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DE-OHIO EXHIBIT ___

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Duke Energy Ohio for an Increase in Electric Distribution Rates	)	Case No. 08-709-EL-AIR
In the Matter of the Application of Duke Energy Ohio for Tariff Approval	)	Case No. 08-710-EL-ATA
In the Matter of the Application of Duke Energy Ohio for Approval to Change Accounting Methods	)	Case No. 08-711-EL-AAM

DIRECT TESTIMONY OF

JAMES E. MEHRING

ON BEHALF OF

DUKE ENERGY OHIO

_____ Management policies, practices, and organization

_____ Operating income

_____ Rate Base

_____ Allocations

_____ Rate of return

_____ Rates and tariffs

__X__ Other: Electric Delivery System

August 8, 2008

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I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is James E. Mehring, and my business address is 139 E. Fourth Street, Cincinnati, Ohio 45202.

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

A. I am employed by the Duke Energy Corporation (Duke Energy) affiliated companies as Vice President of Field Operations for the Midwest region.

Q. PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL QUALIFICATIONS.

A. I hold a Bachelor of Science degree in Business Administration from Indiana Wesleyan University. I also hold a Master of Business Administration degree from Indiana University.

I began my career with Pubic Service Company of Indiana, Inc. (PSI) as a lineperson apprentice in 1977. Upon completion of the apprenticeship, I progressed through assignments of increasing responsibility in distribution operations, safety and technical training, and field operations. These assignments included serving as a first line supervisor, area manager for transmission and distribution construction and maintenance, and general manager of substation operations. I was named to my current position in November 2006.

Q. PLEASE DESCRIBE YOUR DUTIES AS VICE PRESIDENT OF FIELD OPERATIONS.

A. I am responsible for transmission and distribution construction and maintenance, substation construction and maintenance, premise services, meter reading,

customer service engineering, and electric outage response for the Duke Energy Midwest service area in Kentucky, Ohio, and Indiana.

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

A. The purpose of my testimony is: (1) to describe Duke Energy Ohio's (DE-Ohio or Company) electric delivery system; (2) to explain the policies relating to the design, construction, operation, and maintenance of DE-Ohio's electric delivery facilities; and (3) to explain the need for continued investment in the electric delivery system in order to maintain reliability.

II. DESCRIPTION OF DE-OHIO'S ELECTRIC DELIVERY SYSTEM

Q. PLEASE DESCRIBE THE DE-OHIO ELECTRIC DELIVERY SYSTEM.

A. The DE-Ohio electric delivery system is used, among other things, to provide electric service to approximately 690,000 customers located throughout our service area in Ohio. DE-Ohio owns and operates all of its electric distribution and local transmission facilities. The bulk transmission facilities are subject to the functional control of the Midwest Independent Transmission System Operator, Inc. (MISO). DE-Ohio's electric delivery system includes approximately 228 substations, 15 transmission substations (locations with 69 kilovolt (kV) or higher operating voltages) having a combined capacity of approximately 8,776,106 kilovolt-amperes (kVA), 200 distribution substations (locations that supply one or more circuits at 35 kV or lower voltage) having a combined capacity of approximately 5,783,899 kVA, and 15 both transmission and distribution substations (locations with 69 kV or higher operating voltages that also have 35

kV or lower voltage) having a combined capacity of approximately 5,541,733 kVA. The DE-Ohio electric delivery system includes various other equipment and facilities such as control rooms, computers, capacitors, street lights, meters and protective relays, and telecommunications equipment and facilities. Although the DE-Ohio electric system is not a North American Electric Reliability Corporation (NERC) Balancing Authority Area, DE-Ohio does own transmission facilities that are part of the Duke Energy Balancing Authority Area, which is operated by Duke Energy Midwest Control Area Operation. DE-Ohio's facilities are directly interconnected to four other Balancing Authorities. DE-Ohio's electric delivery system provides considerable flexibility for DE-Ohio to operate in a manner that provides reliable and economic power to our customers.

Q. PLEASE DESCRIBE HOW DE-OHIO'S ELECTRIC DELIVERY SYSTEM HAS GROWN BETWEEN SEPTEMBER 30, 2004, THE DATE CERTAIN OF DE-OHIO'S LAST ELECTRIC DISTRIBUTION RATE CASE AND THE CURRENT DATE CERTAIN, MARCH 31, 2008.

A. DE-Ohio's electric distribution system has grown significantly. On September 30, 2004, DE-Ohio's original cost of electric distribution system plant in service was approximately $1.4 billion. By March 31, 2008, DE-Ohio's original cost electric delivery system plant in service had increased by 14% to approximately $1.6 billion. As a further example, since September 30, 2004, DE-Ohio has installed over 188 circuit miles of distribution lines, 458,717 kVA of distribution substation transformer capacity, and six new substations. Investments like these have been necessary to maintain safe, reliable, efficient, and economical electric delivery

service for our existing customers as well as serve approximately 31,000 new retail electric customers added to the DE-Ohio system since September 30, 2004.

Q. IN YOUR OPINION, ARE DE-OHIO'S ELECTRIC DELIVERY SYSTEM FACILITIES *USED AND USEFUL IN PROVIDING SERVICE* TO DE-OHIO'S RETAIL ELECTRIC CUSTOMERS?

A. Yes. DE-Ohio's electric delivery system is used daily to provide safe, reliable, efficient, and economical electric delivery service to our customers.

Q. PLEASE GENERALLY DESCRIBE HOW THE TRANSMISSION AND DISTRIBUTION SYSTEM IS DESIGNED, CONSTRUCTED, AND OPERATED.

A. The electric transmission system is designed to deliver bulk electric power from local generating plants and other resources to regional substations, or to interconnect with other systems in order to enhance system reliability. DE-Ohio's transmission voltages are 69 kV, 138 kV, and 345 kV. The system generally consists of steel tower or wood pole transmission lines and substations with power transformers, switches, circuit breakers, and associated equipment. The system is operated in accordance with standards issued by NERC and Reliability*First* Corporation (RFC). RFC is a Regional Reliability Organization that is the successor organization to the East Central Area Reliability Council (ECAR). The system is under the control of MISO, a regional transmission organization approved by the Federal Energy Regulatory Commission (FERC).

The electric distribution system is designed to receive bulk power at transmission voltages, reduce the voltage to 34.5 kV, 12.5 kV, or 4 kV, and deliver

power to customers' premises. The distribution system generally consists of substation power transformers, switches, circuit breakers, wood pole lines, underground cables, distribution transformers, and associated equipment. The physical design of the distribution system is also generally governed by the National Electric Safety Code (NESC), which I understand has been adopted by the state of Ohio in Ohio Administrative Code (O.A.C.) 4901:1-10-06. The transmission system is operated in accordance with RFC and NERC guidelines and is under the control of MISO.

DE-Ohio operates the transmission and distribution facilities it owns in accordance with good utility practice. DE-Ohio continuously runs the system with a workforce that provides customer service 24 hours per day, 7 days per week, 365 days per year, including trouble response crews. DE-Ohio monitors equipment loading in accordance with good utility practice. The Company monitors outages with various systems such as Supervisory Control and Data Acquisition (SCADA), Trouble Call Outage Management System (TCOMS), Electric Trouble data mart, and Outage Information System.

Customers typically report outages by telephone through Duke Energy's call center. The call center creates an outage report through a telephone software application that interfaces with TCOMS, a state-of-the-art outage management software application that DE-Ohio adopted in 2001 to improve its ability to monitor and respond to outages. TCOMS analyzes the calls and identifies to DE-Ohio's dispatchers the piece of equipment (circuit breaker, recloser, fuse, transformer, etc.) that is the probable location of the outage. The dispatcher contacts the field trouble

response person through the radio system to direct him/her to the probable equipment location to make repairs and restore electric service to the customers. Generally, the field trouble response person inspects the circuit or segment of line in question to identify and report the cause of the outage. The dispatcher records the date, time, duration, and cause of the outage in TCOMS.

Dispatchers continuously monitor weather conditions. When lightning, wind, or ice storms hit DE-Ohio's service territory, line crews are paged, called, or held over to respond. DE-Ohio will often call in several hundred employees to respond to severe storms, including Duke Energy's U.S. Franchised Electric and Gas employees stationed in Kentucky, Indiana, North Carolina, and South Carolina. If necessary, DE-Ohio will contact contract employees and other utilities for additional line crews through a mutual assistance program. These rigorous operating practices have enabled DE-Ohio to provide reliable electric service to its customers.

Q. PLEASE GENERALLY DESCRIBE HOW DE-OHIO'S DISTRIBUTION SYSTEM IS MAINTAINED.

A. DE-Ohio maintains its distribution system in accordance with good utility practice by following several inspections, monitoring, testing, and periodic maintenance programs. Examples of these programs include: substation inspection program, line inspection program, ground-line inspection and treatment program, vegetation management program, underground cable replacement program, capacitor maintenance program, infrared scanning of equipment, and dissolved gas analysis. DE-Ohio uses various reliability indices to measure the effectiveness of its maintenance programs and system reliability. DE-Ohio follows the Public Utilities

Commission of Ohio's (Commission) Electric Service and Safety Standards (ESSS) as set forth in O.A.C. 4901:1-10. DE-Ohio uses various indices to measure the effectiveness of its maintenance programs and system reliability.

Q. HAVE THERE BEEN ANY IMPROVEMENTS TO THE WAY DE-OHIO MAINTAINS ITS ELECRIC DISTRIBUTION SYSTEM SINCE THE COMPANY'S LAST ELECTRIC DISTRIBUTION RATE CASE?

A. Yes. In addition to the existing maintenance programs previously described, DE-Ohio implemented a comprehensive ground line inspection and treatment program for its entire distribution system. This program is targeted to inspecting and maintaining the wood poles that are used throughout DE-Ohio's service territory to ensure they continue to provide safe and reliable electric service. Since its implementation, approximately 54,600 wooden poles have been inspected, which equals approximately 1/5 of the entire distribution system. The purpose of the program is to not only treat existing poles so that they will last longer, thereby reducing DE-Ohio's costs for replacement of poles, but to identify potential problems, whether immediate or in the near future. If the problem is immediate in nature, such as a utility pole in need of replacement, it is promptly addressed.

III. MEASURING THE RELIABILITY OF DE-OHIO'S ELECTRIC DELIVERY SYSTEM

Q. YOU STATED THAT DE-OHIO USES VARIOUS INDICES TO MEASURE THE EFFECTIVENESS OF ITS MAINTENANCE PROGRAMS AND SYSTEM RELIABILITY. PLEASE EXPLAIN THESE RELIABILITY INDICES.

A. These reliability indices are generally recognized standards for measuring the number, scope, and duration of outages. Ohio requires electric distribution utilities to annually report on these reliability indices. These indices are defined as follows:

- Customer Average Interruption Duration Index (CAIDI) is the average interruption duration or average time to restore service per interrupted customer and is expressed by the sum of the customer interruption durations divided by the total number of customer interruptions.
- System Average Interruption Duration Index (SAIDI) is the average time each customer is interrupted and is expressed by the sum of customer interruption durations divided by the total number of customers served.
- System Average Interruption Frequency Index (SAIFI) is the system average frequency index and represents the average number of interruptions per customer. SAIFI is expressed by the total number of customer interruptions divided by the total number of customers served.

Q. HOW HAS DE-OHIO'S SYSTEM PERFORMED AS MEASURED BY THESE RELIABILITY INDICES?

A. DE-Ohio has performed well. Its reliability scores have always exceeded DE-Ohio's targets established in consultation with Commission Staff pursuant to O.A.C. 4901:1-10-10(B)(2). The latest reliability index scores available are for calendar year 2007 and are reported below.

Duke Energy Ohio Rule #10 -2007 Distribution System Reliability Report		
CAIDI – Customer Average Interruption Duration Index (in Minutes)		
CAIDI Performance Target	CAIDI with Storm & Transmission Exclusions	CAIDI without Storm & Transmission Exclusions
127.80	97.07	159.53

SAIDI – System Average Interruption Duration Index (in Minutes)		
SAIDI Performance Target	SAIDI with Storm & Transmission Exclusions	SAIDI without Storm & Transmission Exclusions
174.00	128.66	326.71

SAIFI – System Average Interruption Duration Index (in Minutes)		
SAIDI Performance Target	SAIFI with Storm & Transmission Exclusions	SAIFI without Storm & Transmission Exclusions
1.50	1.33	2.05

Q. WHAT ARE DE-OHIO'S OBJECTIVES IN DESIGNING, CONSTRUCTING, OPERATING AND MAINTAINING ITS DISTRIBUTION FACILITIES?

A. In designing, constructing, operating and maintaining its facilities, DE-Ohio strives to provide safe, cost-effective, and reliable electric service.

Q. PLEASE DESCRIBE SOME OF THE FACTORS THAT THE COMPANY MUST CONSIDER IN ATTEMPTING TO ACHIEVE THESE OBJECTIVES.

A. In providing electric service to its customers, DE-Ohio must provide safe and reliable service while at the same time prudently and responsibly managing the costs of providing such service. DE-Ohio weighs various factors in selecting the electric delivery system projects in which to invest, including DE-Ohio's planning criteria, any requirements mandated either by regulatory authorities or reliability councils, and government mandated projects, to name a few.

Q. HOW DOES DE-OHIO BALANCE ALL OF THESE FACTORS?

A. Annually, electric system studies are performed to determine where and when system modifications are needed to ensure load is adequately served. When these needs are identified, multiple solutions are developed, addressing not only the capacity need, but also providing opportunities to maintain or improve reliability and operating flexibility. Recommendations are made and discussed with the operations staff to ensure a balanced, workable plan has been developed.

In the course of maintaining and operating the electric system, equipment and hardware is identified that requires repair or replacement. Blanket budgets

have been established to cover small items, but specific projects are developed for larger expenditure items. These items are triggered as a result of operating issues, new load growth, or as a result of the various inspection, monitoring, and testing programs I described above.

IV. DE-OHIO'S INVESTMENT IN ITS DISTRIBUTION FACILITIES

Q. PLEASE DESCRIBE DE-OHIO'S INVESTMENT RELATING TO ITS DISTRIBUTION FACILITIES DURING THE PAST FIVE YEARS AND ITS PROJECTED FUTURE INVESTMENT.

A. The table below summarizes DE-Ohio's capital expenditures for its transmission and distribution facilities for the period from September 30, 2004 through March 31, 2008.

Table 2 – Capital Expenditures September 30, 2004 – March 31, 2008

Function	2004 September 30th through December	2005	2006	2007	2008 through March 31st
Distribution	14,480,470	71,797,048	82,417,539	86,201,462	22,617,178

DE-Ohio anticipates its projected future investment in its electric distribution system to be approximately $125 million - $130 million per year (includes Smart Grid investment) for the next three years.

V. MAJOR CHALLENGES FACING DE-OHIO'S ELECTRIC DELIVERY SYSTEM

Q. WHAT ARE THE MAJOR CHALLENGES FACING DE-OHIO'S DISTRIBUTION SYSTEM?

A. The aging of the distribution system is a major challenge. Much of this equipment is over thirty years old. This equipment typically will last from thirty to fifty years. We expect to incur substantial expenditures to replace this equipment during the next several years. The charts below show the age distribution for DE-Ohio's poles, distribution circuit breakers, and distribution transformers.

Figure 1 – DE-Ohio's Distribution

Poles Age Distribution

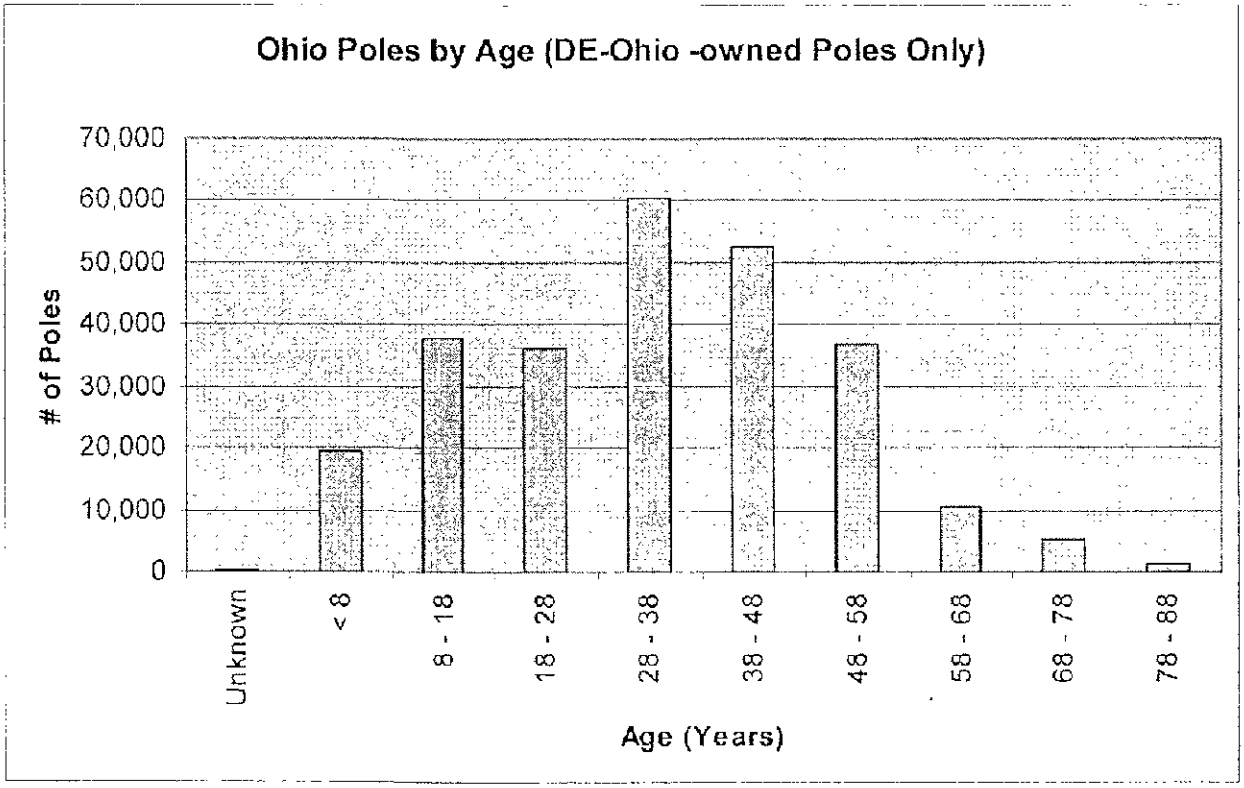
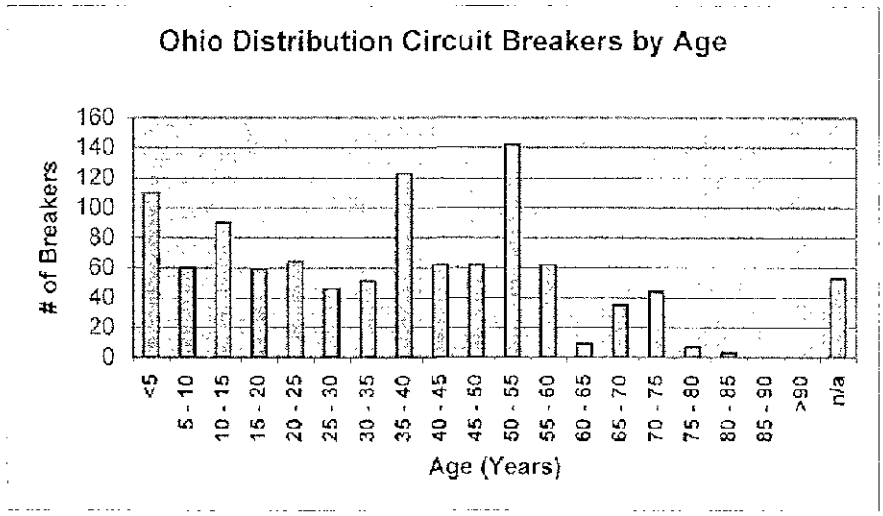


Figure 2 – DE-Ohio's

Distribution Circuit Breakers Age Distribution As of

March 31, 2008



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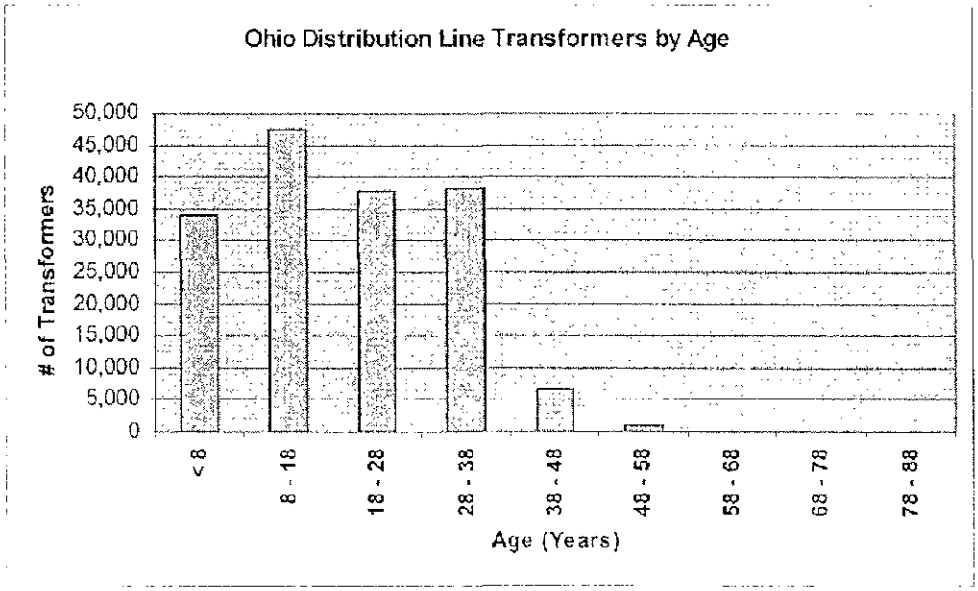
2 **Figure 3 – DE-Ohio's Distribution Transformer Age**

Distribution as of March 31, 2008



Q. DO CUSTOMERS' EXPECTATIONS PRESENT A CHALLENGE?

A. Yes. Customers are now using equipment that is highly sensitive to voltage fluctuations; therefore, customers are demanding highly reliable service that minimizes the number of voltage fluctuations. This presents a challenge for DE-Ohio to strike the correct balance between reliable and economic service.

Q. DOES TIMELY COST RECOVERY OF DISTRIBUTION SYSTEM INVESTMENT PRESENT A CHALLENGE TO DELIVERING SAFE AND RELIABLE SERVICE?

A. Yes. The cost of equipment such as transformers, utility poles, wire, and other necessary components continue to rise. This inflation causes DE-Ohio's cost of providing service to continue to rise as well. Similarly, as new technologies continue to develop, existing equipment tends to become obsolete or difficult to acquire and maintain. DE-Ohio is constantly evaluating how it can better manage its costs while at the same time take advantage of the new technologies that can provide enhanced and more reliable service to its customers. That is why DE-Ohio is proposing the implementation of its Distribution Rider (Rider DR). As explained further by DE-Ohio's witnesses Mr. William Don Wathen Jr. and Mr. Todd W. Arnold, Rider DR will provide DE-Ohio with timely recovery of its costs incurred to improve and modernize its electric delivery infrastructure including the implementation of SmartGrid technologies and timely recovery of other distribution capital investments. Rider DR is beneficial to customers in that it will allow DE-Ohio to recover capital investment costs necessary to continue providing safe and reliable electric distribution service in a transparent manner. The Commission will

review the rider, including the project costs to be included. The addition of this rider will likely reduce the magnitude and frequency of future rate cases as DE-Ohio is better able to plan for its investments in reliability.

VI. CONCLUSION

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

A. Yes.