

BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Filing by Ohio Edison)
Company, The Cleveland Electric)
Illuminating Company, and The Toledo)
Edison Company for a Distribution Platform)
Modernization Plan)
)

Case No. 17-2436-EL-UNC

DIRECT TESTIMONY OF

WILLIAM T. BEUTLER

ON BEHALF OF

OHIO EDISON COMPANY

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

THE TOLEDO EDISON COMPANY

December 1, 2017

1 **Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.**

2 A. My name is William T. Beutler. I am employed by FirstEnergy Service Company as Senior
3 Consulting Engineer. My business address is 76 S. Main Street, Akron, OH 44308.

4 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND, PROFESSIONAL
5 QUALIFICATIONS, AND EMPLOYMENT EXPERIENCE.**

6 A. I hold a Bachelor of Electrical Engineering degree and a Master of Business Administration
7 degree from Cleveland State University. I am a Registered Professional Engineer and
8 Certified Electrical Safety Inspector in Ohio. I have been employed in the electric utility
9 industry for more than 38 years. I began my career with The Cleveland Electric Illuminating
10 Company (“CEI”) in 1979, and I have subsequently held various positions with CEI and
11 FirstEnergy Service Company. I started as a junior engineer and progressed to a rank of
12 senior engineer in the Distribution Standards section of CEI. Starting in 1994, I was the
13 supervisor of the Power Quality Engineering section, which involved assisting customers
14 with outage and power quality issues. In 1998, I joined the Energy Delivery - Distribution
15 Support Section of FirstEnergy Service Company, where I supported distribution standard
16 development, reliability reporting, distribution practices and outage management. In 2004,
17 I joined the newly formed Outage Management Group, where currently I am a Senior
18 Consulting Engineer.

19 **Q. PLEASE DESCRIBE YOUR CURRENT ROLES AND RESPONSIBILITIES.**

20 A. As Senior Consulting Engineer, my current job responsibilities include providing analysis
21 support for transmission and distribution reliability data, providing corporate direction on
22 the functionality of the outage management system, providing support on the architecture
23 of the outage databases and dashboard for reliability reporting, safety and work practice

1 development, and providing support on interpretations of the National Electrical Safety
2 Code and National Electrical Code. I provide these supporting services to all FirstEnergy
3 distribution operating companies, including Ohio Edison Company, CEI, and The Toledo
4 Edison Company (collectively, the “Companies”).

5 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC UTILITIES**
6 **COMMISSION OF OHIO?**

7 A. Yes. I testified before the Public Utilities Commission of Ohio (“Commission”) on behalf
8 of the Companies in Case No. 09-759-EL-ESS. I have also provided testimony before the
9 Commission on other electrical service related issues over the past 30 years.

10 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

11 A. The purpose of my testimony is to describe the estimated customer benefits of the
12 Distribution Platform Modernization (“DPM”) Plan, which is attached to the Companies’
13 Application as Attachment A. I sponsor and incorporate into my testimony the
14 quantification of these benefits provided in the section of the DPM Plan titled “Estimated
15 Customer Benefits”.

16 **Q. WHAT BENEFITS ARE ASSOCIATED WITH THE DPM PLAN?**

17 A. As described in the testimony of Companies’ witness Vallo, the Companies conducted a
18 detailed analysis of the circuits that are estimated to benefit the most from the distribution
19 platform modernization investments in the DPM Plan. For the circuits ultimately included
20 in the DPM Plan, the Companies anticipate improvements in reliability and improved
21 restoration times following major storms. The Companies also expect that the
22 improvements on these circuits will have the ancillary benefit of increasing reliability and
23 storm restoration capabilities on other circuits as the Companies’ personnel will be freed

1 up to work on other restorations on the distribution system. The work in the DPM Plan
2 will also facilitate safer conditions for the public (less traffic and streetlight outages) and
3 safer working conditions for line workers.

4 **Q. PLEASE SUMMARIZE THE METHODOLOGY YOU USED TO ESTIMATE THE**
5 **RELIABILITY BENEFITS FROM THE DPM PLAN.**

6 A. First, I calculated the estimated reliability improvements to System Average Interruption
7 Duration Index (“SAIDI”) and System Average Interruption Frequency Index (“SAIFI”)
8 based on a recommended methodology provided by the Electric Power Research Institute
9 (“EPRI”). These improvements were conservatively estimated by comparing historical
10 outage information on selected circuits to what the estimated performance on the circuits
11 would have been if the investments included in the DPM Plan were fully implemented, all
12 else equal. These reliability improvements were then translated to dollar amounts
13 representing estimated economic losses avoided from having less outages using the
14 Interruption Cost Estimator (“ICE”) tool developed by the U.S. Department of Energy. In
15 addition to the estimated reliability improvements, the other inputs into the ICE tool used
16 by the Companies were the number and average usage of residential, commercial and
17 industrial customers. The estimated benefits were evaluated over a period of 30 years,
18 consistent with the approximate estimated useful life of the majority of the investments
19 made in the DPM Plan, as discussed in the direct testimony of Companies’ witness Vallo.

20 **Q. PLEASE SUMMARIZE THE METHODOLOGY YOU USED TO ESTIMATE THE**
21 **RELIABILITY BENEFITS FROM IMPROVED RESTORATION TIMES**
22 **FOLLOWING MAJOR STORMS?**

1 A. To estimate the benefits from improved restoration times following major storms, the
2 Companies utilized information obtained from the SGMI Project area in CEI's service
3 territory discussed in the direct testimony of Companies' witness Karafa. For the period
4 January 1, 2012 through May 31, 2014, there were circuits in the SGMI Project area that
5 had circuit ties, reclosers, and SCADA. Accordingly, historical storm restoration data on
6 these circuits during this time period can be reasonably relied upon as proxies for the
7 performance of circuits included in the DPM Plan. Major storms/Major events are those
8 events that are defined in Ohio Administrative Code 4901:1-10-01(T). Specifically, the
9 analysis compared historical restoration data on the circuits in the SGMI Project area that
10 are comparable to circuits in the DPM Plan to other circuits outside of the SGMI Project
11 area. This comparison of actual historical data showed an improvement in average outage
12 duration following major storms for the circuits in the SGMI Project area that had the DPM
13 Plan-like investments. Because the DOE's ICE tool is designed to calculate benefits within
14 a 16-hour period, only those outages that lasted less than 16 hours, representing an
15 improvement of 70 minutes, were considered in calculating savings. This restoration time
16 improvement on selected circuits was then translated into dollar amounts representing
17 estimated economic losses avoided from having less outages over a 30-year period using
18 the ICE tool. This is a conservative method to calculate benefits because it focuses only
19 on direct impacts to retail electric customers and does not take into consideration other
20 potentially significant downstream economic impacts from power outages. Other than the
21 estimated improvement in outage duration times and the corresponding SAIFI for storms,
22 the Companies utilized the same inputs into the ICE tool as they did with the analysis of
23 the estimated reliability improvements.

1 **Q. DOES THE ICE TOOL PRODUCE RESULTS ON BOTH A NOMINAL AND NET**
2 **PRESENT VALUE BASIS?**

3 A. Yes. For the net present value results, I used the discount rate provided by Companies'
4 witness McMillen.

5 **Q. PLEASE SUMMARIZE THE RESULTS OF YOUR ANALYSIS.**

6 A. The estimated nominal benefits to the Companies' customers from improved reliability are
7 \$2.257 billion, or \$838 million on a net present value basis. The estimated nominal benefits
8 from improved storm restoration times are \$592 million, or \$220 million on a net present
9 value basis. Companies' witness McMillen uses these estimated benefits in his cost/benefit
10 analysis.

11 **Q. ARE THE ESTIMATED RELIABILITY AND STORM RESTORATION**
12 **BENEFITS REASONABLE?**

13 A. Yes. The calculations used to estimate these benefits are based on reliable and established
14 methodologies that have been used throughout the industry. For example, the same
15 methodologies were used and relied upon by the Commission in Case No. 13-1939-EL-
16 RDR. The Companies utilized actual historical outage data on their distribution system
17 when performing the analysis. Assuming that similar outage conditions continue as have
18 been experienced historically, these estimates are reasonable.

19 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.**

20 A. The DPM Plan will provide significant benefits to customers in terms of improved reliability
21 and restoration times following major storms. The quantification of the estimated customer
22 benefits is based on reasonable and established methodologies and can be relied upon by

1 the Commission. The DPM Plan should be approved as soon as possible so that customers
2 can start to realize the benefits.

3 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

4 A. Yes. However, I reserve the right to supplement my testimony.

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Summary: Testimony of William T. Beutler electronically filed by Mr. James F Lang on behalf of Ohio Edison Company and The Cleveland Electric Illuminating Company and The Toledo Edison Company