

**FILED**

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**BEFORE THE CORPORATION COMMISSION OF OKLAHOMA**

COURT CLERK'S OFFICE - OKC  
CORPORATION COMMISSION  
OF OKLAHOMA

IN THE MATTER OF THE )  
APPLICATION OF OKLAHOMA GAS )  
AND ELECTRIC COMPANY FOR AN )  
ORDER OF THE COMMISSION )  
AUTHORIZING APPLICANT TO )  
MODIFY ITS RATES, CHARGES, AND )  
TARIFFS FOR RETAIL ELECTRIC )  
SERVICE IN OKLAHOMA )

CAUSE NO. PUD 201500273

## **RESPONSIVE TESTIMONY**

**OF**

**KEVIN J. MARA**

**ON BEHALF OF**

**E. SCOTT PRUITT,**

**OKLAHOMA ATTORNEY GENERAL**

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**RESPONSIVE TESTIMONY OF KEVIN J. MARA**

**I. INTRODUCTION**

**Q. PLEASE STATE YOUR NAME.**

A. My name is Kevin J. Mara.

**Q. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR BUSINESS ADDRESS?**

A. I am a Vice President with GDS Associates, Inc. My business address is 1850 Parkway Place, Marietta, Georgia.

**Q. ON WHOSE BEHALF ARE YOU TESTIFYING?**

A. I am testifying on behalf of the Oklahoma Attorney General ("AG").

**Q. DID YOU PRE-FILE RESPONSIVE TESTIMONY ON THE REVENUE REQUIREMENT OF OKLAHOMA GAS AND ELECTRIC COMPANY ("OG&E" OR "COMPANY") IN THIS CAUSE?**

A. Yes, I previously filed responsive testimony in this Cause on the subjects of OG&E's vegetation management budget, and the Company's proposed vegetation management tracker.

**Q. WHAT IS THE PURPOSE OF THE TESTIMONY YOU NOW FILE IN THIS CASE?**

A. The purpose of my testimony is to support the allocation factors for distribution costs as these costs relate to the cost of service analysis.

**Q. WHAT HAVE YOU RELIED UPON IN MAKING YOUR EVALUATION AND RESULTING CONCLUSIONS AND RECOMMENDATIONS?**

A. I have relied upon the information in the direct testimony of OG&E's witnesses, OG&E's responses to data requests ("DRs") submitted by the AG and other parties, analysis performed by GDS, and my educational training and related professional experience.

**Q. HAVE YOU PREPARED ANY EXHIBITS WITH THIS TESTIMONY?**

A. No.

**II. SUMMARY OF TESTIMONY**

**Q. PLEASE SUMMARIZE THE CONCLUSIONS AND RECOMMENDATIONS YOU HAVE REACHED AS A RESULT OF YOUR REVIEW AND ANALYSIS.**

A. I recommend that OG&E's distribution system costs in FERC Accounts 364, 365, 366, 367, and 368 be allocated as demand-related costs. This differs from the method used by OG&E, which allocates distribution costs partly based on customer-related costs, and partly based on demand-related costs. The method I am proposing for the distribution systems costs is the same method proposed by OG&E for the transmission and substation costs.

### **III. ALLOCATION OF DISTRIBUTION COSTS**

**Q. WHAT CRITERIA ARE USED TO DESIGN TRANSMISSION LINES AND SUBSTATIONS?**

A. From my experience, the industry standard method to determine the capacity of transmission lines and substations utilizes the expected peak energy demand, measured in megawatts (“MW”), on these facilities. The peak energy demand is the highest electrical peak power flow that occurs in a defined time interval (15-minute to 60-minute) for a given year. There is normally a secondary criterion for single contingency occurrences, known as N-1. N-1 is reserve capacity built into the substation transformer(s) and transmission line(s) to provide backup capacity to the system in the event a critical component of the system fails.

**Q. IS THE SIZE OR CAPACITY OF TRANSMISSION LINES AND SUBSTATIONS INFLUENCED BY FLUCTUATIONS IN ENERGY DELIVERED OVER TIME?**

A. No. While energy delivery over time has peaks and valleys, only the peaks are used to determine the capacity of the system components. Capacity of electrical components is generally limited by thermal loading, a term which refers to heat produced by electrical current passing through an electrical device or transmission conductor. The highest thermal loading occurs at peak-energy demand. Therefore low demand levels, even over a long period of time, do not influence the capacities of the transmission lines and substations.

**Q. WHAT ALLOCATION FACTORS HAS OG&E APPLIED TO SUBSTATIONS AND TRANSMISSION LINES?**

A. My understanding is that OG&E has allocated one hundred percent (100%) of the cost of transmission lines to demand-related costs and zero percent (0%) to customer-related costs. In OG&E witness David Smith's Direct Testimony, he states that transmission costs are typically considered to be demand-related costs because they are mainly fixed, and do not vary with energy usage.<sup>1</sup> For substations, the work papers presented in the Company's Cost of Service and Jurisdictional Calculations Study, in Section K, show that substation charges are also one hundred percent (100%) allocated to demand-related costs and zero percent (0%) to customer-related costs.<sup>2</sup>

**Q. CAN YOU EXPLAIN THE FEDERAL ENERGY REGULATORY COMMISSION'S ("FERC") ACCOUNT CODES FOR DISTRIBUTION SYSTEMS?**

A. FERC regulates accounting standards used by electric utilities, including OG&E. These standards group functional system components into specific accounts. For distribution systems, the FERC accounts are as follows;

364 Poles, Towers, & Fixtures

365 Overhead Conductors

366 Underground Conductors

367 Underground Conduit

368 Line Transformers

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<sup>1</sup> Smith Dir. Test. 4:4-5.

<sup>2</sup> See OG&E's Application Package, Workpapers Section K and Section L.

**Q. WHAT CRITERIA ARE USED TO DESIGN DISTRIBUTION LINES AND DISTRIBUTION CABLES?**

A. My experience is that distribution lines and cables, whose costs are captured in FERC accounts 364, 365, 366, and 367, are sized and designed based on peak demand. As with transmission lines, reserved capacity is often included in the distribution system design to provide capacity for single contingency (N-1) failure of distribution components. The sizing of distribution conductors is not directly influenced by the number of customers being served by that conductor. Rather, it is the demand of those customers that determines the size of the conductors. The conductors' size influences the supporting poles, in terms of number, height, and size. Thus, the poles are also influenced by the local area electrical demand.

With regard to underground cable and conduit, the electrical capacity requirements are used to select the size of the distribution cable. The size of the cable, in turn, drives the size of the conduit used to encase the cable.

**Q. IS THE SIZE OR CAPACITY OF DISTRIBUTION LINES AND CABLES INFLUENCED BY FLUCTUATIONS IN ENERGY DELIVERED OVER TIME?**

A. No. While energy delivery over time has peaks and valleys, only the peaks are used to determine the capacity of the system components.

**Q. WHAT ALLOCATION FACTORS HAS OG&E APPLIED FOR DISTRIBUTION LINES AND CABLES?**

A. My understanding is that OG&E assigned a percentage of the cost for distribution lines and cables set forth in FERC accounts 364, 365, 366, and 367, to demand-related costs, and a portion to customer-related costs. Each distribution system account has a different

allocation percentage for demand-related costs and customer-related costs. Essentially, OG&E has allocated a portion of the distribution system based on the number of customers served by the system.

**Q. DO YOU AGREE WITH THE COST ALLOCATION PROPOSED BY OG&E FOR FERC ACCOUNTS 364, 365, 366, AND 367?**

A. I disagree with OG&E's cost allocation methodology because distribution systems are sized based on peak demand, not based on the number of customers served. I recommend one hundred percent (100%) of the costs in FERC accounts 364, 365, 366, and 367 be allocated to OG&E's demand-related costs. This distribution system cost allocation method is consistent with the regulatory practice described in a report prepared for the National Association of Regulatory Utility Commissioners ("NARUC"):

"The most common method used is the "basic customer" method, which classifies all poles, wires, and transformers as demand-related and meters, meter-reading, and billing as customer-related. This general approach is used in more than thirty states."<sup>3</sup>

**Q. WHAT CRITERIA ARE USED TO DESIGN DISTRIBUTION TRANSFORMERS?**

A. The size of a distribution transformer is determined based on the peak demand placed on that individual transformer. Some transformers serve a single customer, and will be sized for the unique demand of that customer. Other transformers serve multiple customers, and the coincident peak demand of those customers is used to determine the transformer size. The coincident peak demand is the single highest electrical demand in a 60-minute

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<sup>3</sup> Frederick Weston, *Charging for Distribution Utility Servs.: Issues in Rate Design*, December 2000, at 30, <http://www.oca.state.pa.us/cinfo/DistributedResourcesWorkshop/DistributionUtilityIssues/DistributionUtilityRateDesign.pdf>.

time interval over a one-year period. The coincident peak demand is almost always less than the sum of the peak demands of each individual customer served by the transformer. The number of customers is not a driving factor in the selection of a transformer size. The size is determined based on electrical demand. It should be noted that each distribution service has unique electrical demands, and no two residential or commercial electrical services are exactly the same. Instead, the distribution engineer specifying the transformer must study individual electric loads for each distribution service.

My experience is that for some cases, only one or two customers are served by a single transformer. But in subdivisions where electrical distribution lines are located underground, four to eight customers can be served by a single transformer. For condominiums and apartments, it is possible to serve eight to twelve customers per transformer. For commercial accounts, one customer to a transformer is common, but there are also numerous cases where a single transformer can serve multiple commercial accounts. In my opinion, the number of customers is not the driving force in transformer sizing, and correspondingly, not in transformer cost either.

**Q. IS THE CAPACITY OF DISTRIBUTION TRANSFORMERS INFLUENCED BY FLUCTUATIONS IN ENERGY DELIVERED OVER TIME?**

A. No. While energy delivery over time has peaks and valleys, the peak demand drives the selection of a distribution transformer.

**Q. DO YOU AGREE WITH OG&E'S PROPOSED ALLOCATION OF THE LINE TRANSFORMER COSTS IN FERC ACCOUNT 368?**

A. I disagree with OG&E's cost allocation methodology because distribution line transformers, which are captured in FERC account 368, are sized for peak demands, and

are not based on the number of customers served. I recommend one hundred percent (100%) of the distribution line transformers costs be allocated to the demand-related costs.

#### **IV. SUMMARY AND CONCLUSIONS**

**Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS?**

A. I recommend that the cost of service to OG&E's customers using OG&E's distribution system, set forth in FERC accounts 364, 365, 366, 367, and 368, be allocated based solely on demand. This method is consistent with OG&E's transmission and substation cost allocations, and as I pointed out earlier in my testimony, it is consistent with the method used in many other jurisdictions.

**Q. DOES THIS COMPLETE YOUR TESTIMONY?**

A. Yes.

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

A. Yes, it does. However, I reserve the right to supplement this testimony as needed to respond to any new information OG&E may present on these issues.