BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of The Empire District Electric Company's Application for Variance From Selected Provisions of The Commission's Rules to Electric Utility Resource Planning.	)))	Case No. EO-2019-0049

OFFICE OF THE PUBLIC COUNSEL'S RESPONSE TO THE EMPIRE DISTRICT ELECTRIC COMPANY'S VARIANCE REQUESTS

COMES NOW the Office of the Public Counsel and responds to The Empire District Electric Company's variance requests as follows:

1. The Empire District Electric Company filed its requests for variances from requirements of Chapter 22 on September 20, 2018. Commission rule 4 CSR 240-22.080(1)(B) requires Empire to make its triennial resource compliance planning filing on April 1, 2013, and every third year thereafter. Commission rule 4 CSR 240-22.080(13) provides:

> Upon written application made at least twelve (12) months prior to a triennial compliance filing, and after notice and an opportunity for hearing, the commission may waive or grant a variance from a provision of 4 CSR 240-22.030–4 CSR 240-22.080 for good cause shown. The commission may grant an application for waiver or variance filed less than twelve (12) months prior to the triennial compliance filing upon a showing of good cause for the delay in filing the application for waiver or variance.

2. September 20, 2018, is not twelve (12) or more months before April 1, 2019. Instead, September 20, 2018, precedes April 1, 2019, by slightly over six (6) months. Empire has not alleged any cause for why it could not have filed its variance requests by or before April 1, 2018, or even before when it did file them on September 20, 2018. Paragraph five of its application indicates that there is no reason it could not have filed them before April 1, 2018:

> The variances being requested herein were previously requested and granted by this Commission. On April 1, 2015, Empire filed an Application for Variance in File No. EE-2015-0249 seeking these same variances, and the Commission issued

an Order Granting Application for Variance on June 2, 2015, with regard to Empire's 2016 IRP triennial compliance filing (File No. EO-2016-0223).

3. Empire has not identified what it views to be the required "good cause" for why the Commission should grant its variance requests. The Commission has said[1]:

> "Good cause," is defined as showing a "legally sufficient ground or reason" under the circumstances.[2] Good cause means a good faith request for reasonable relief.[3] To constitute good cause, the reason "must be real, not imaginary, substantial, not trifling, and reasonable, not whimsical, and good faith is an essential element."[4] (Original footnote numbering).

4. Among other requests, Empire requests relief from complying with the requirement of Commission rules 4 CSR 240-22.030(7)(A) and 4 CSR 240-22.020(37) that it produce the monthly energy usage and demand forecasts at the time of the summer and winter system peaks for each year of the planning horizon required by Commission rule 4 CSR 240-22.030(7)(A) for each of its cost-of-service classes. Empire proposes, instead, to produce forecasts using the following groupings: Residential, Commercial, Industrial, Wholesale, Street & Highway, Interdepartmental, and Public Authority.

5. While the Office of the Public Counsel does not dispute that aggregating customer data into groups larger than its cost-of-service classes "offer(s) data stability," it does so at the expense of muting or hiding information otherwise discernable when more granular cost-of-service class-based data is used for forecasting monthly energy usage and demand, or for load analysis. For example, the energy usages and demands of small commercial customers (e.g., a gas station) are very different from those of large commercial customers (e.g., a large office

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[1] *In the Matter of the Local Exchange Rate Tariff Filing of BPS Telephone CompanyTo Comply with the FCC's Nov. 18, 2011 Order Establishing a Local Rate Floor*, File No. IT-2012-0374, ORDER APPROVING TARIFFS AND GRANTING MOTIONS FOR EXPEDITED TREATMENT, 22 MoP.S.C.3d , 149, 155 (Effective: July 1, 2012).
[2] *Wilson v. Morris,* 369 S.W.2d 402, 407 (Mo.1963); *Black's Law Dictionary*, 6th ed., West Group, 1990, p. 692.
[3] *American Family Ins. Co. v. Hilden*, 936 S.W.2d 207 (Mo. App. 1996).
[4] *Schuenemann v. Route 66 Rail Haven, Ltd*., 353 S.W.3d 691, 696 (Mo. App. 2011), *citing to*, *Belle State Bank v. Indus. Comm'n*, 547 S.W.2d 841, 846 (Mo. App. 1977).

building). Therefore, aggregating the data of customers in these classes mutes or makes imperceptible the disparate energy usage and demand of the small commercial customers from those of large commercial customers, impacting not only forecasts, but also customer load analyses. Empire has approximately 170,000 electric customers, and this Commission has chosen that for resource planning forecasts are to be based on customer energy usage and demand aggregated at the cost-of-service class level to provide a manageable database that is sufficiently granular to give meaningful results.

6. Empire has neither alleged nor shown that its less granular groupings of customers will allow sufficiently meaningful analyses, or that it is unable to comply with the Commission's rules. The essence of Empire's request is that because the Commission granted Empire these variances over three years ago it should grant them again now.

7. Appended is the memorandum of Lena Mantle, Senior Analyst, Office of the Public Counsel, who provides a history of Empire's noncompliance with rule 4 CSR 240-22.030(7)(A) and explains why Empire's request to aggregate its customer data into the following groups—Residential, Commercial, Industrial, Wholesale, Street & Highway, Interdepartmental, and Public Authority—for producing monthly energy usage and demand forecasts rather than its cost-of-service classes of residential, commercial, small heating service, general power, special transmission service contract, total electric building, feed mill and grain service, and large power service, as required by rule 4 CSR 240-22.030(7)(A) is without merit.

8. The Office of the Public Counsel conferred with Empire regarding its issues with Empire's variance requests, but was unable to reach a resolution before the October 25, 2018, date by which responses to Empire's requests are due. Discussions continue.

9. Recognizing that at this point in time it might cause Empire undue hardship to switch from using its designated revenue classes to using cost-of-service classes, if Empire shows that is in fact the case, then the Office of the Public Counsel would be satisfied by Empire committing to use cost-of-service classes in its next triennial filing analyses and not using them in this one, *i.e.*, if Empire commits using cost-of-service classes in its next triennial filing analyses and the Commission orders Empire to use cost-of-service classes in its next triennial filing, then the Office of the Public Counsel does not oppose Empire's variance requests in this case.

Wherefore, the Office of the Public Counsel responds to Empire's variance requests as set forth above.

Respectfully,

/s/ Nathan Williams

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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing have been mailed, hand-delivered, transmitted by facsimile or electronically mailed to all counsel of record this 25th day of October 2018.

/s/ Nathan Williams

MEMORANDUM

To: Office of the Public Counsel for filing in Missouri Public Service Commission Official Case File, Case No. EO-2019-0049 (Empire)

From: Lena Mantle, Senior Analyst, Office of the Public Counsel

Subject: If it reaches the merits of Empire's request for a variance from the Rule 4 CSR 240-22.030(7)(A) requirement to use major class as defined in 4 CSR 240-22.020(37), the Commission should deny the request

Date: October 25, 2018

Summary

One of the two Commission rules from which Empire seeks a variance is 4 CSR 240-22.030(7)(A). That request is the subject of this memorandum.

Rule 4 CSR 240-22.030(7)(A), provided in full below in this memorandum, describes the minimum requirements of the forecasts of the energy usage characteristics of Empire's customers that are used in the resource planning process to determine the type and amount of resources needed to provide service to these customers over the planning horizon. While Empire asked for a variance from 4 CSR 240-22.030(7)(A), it is actually asking for a variance from the definition of major class in 4 CSR 240-22.020(37) where it is defined as "a cost-of-service class of the utility." Empire's cost-of-service classes in the last rate case[1] were residential, commercial,[2] small heating service,[3] general power,[4] special transmission service contract,[5] total electric building,[6] feed mill and grain service,[7] and large power service.[8]

For purposes of its 2019 resource plan filing, Empire is requesting that the Commission allow it to use the following "revenue classes" instead its cost-of-service classes for performing its load analysis and load forecasts: residential, commercial, industrial, wholesale, street and highway, interdepartmental, and public authority. Empire's commercial and industrial revenue classes are

[1] *In the Matter of The Empire District Electric Company's Request for Authority to Implement a General Rate Increase for Electric Service,* Staff's Rate Design and Class Cost-of-Service Report, page 2, Case No. ER-2016-0023.
[2] Small non-residential customers with a load below 40 kilowatts (kW), PSC Mo. Tariff No. 5, Section 2, Sheet No. 1.
[3] Small non-residential customers with a summer load below 40 kW that uses electric space heating, PSC Mo. Tariff No. 5, Section 2, Sheet No. 2.
[4] Large non-residential customers, includes a minimum demand charge for 40 kW, PSC Mo. Tariff No. 5, Section 2, Sheet No. 3.
[5] Praxair, Schedule SC-P, PSC Mo. Tariff No. 5, Section 2, Sheet No. 9.
[6] Large non-residential customers with total electric service, includes a minimum demand charge for 40 kW, PSC Mo. Tariff No. 5, Section 2, Sheet No. 7.
[7] Schedule PFM, PSC Mo. Tariff No. 5, Section 2, Sheet No. 6.
[8] Large non-residential customers, includes a minimum demand charge for 1,000 kW, PSC Mo. Tariff No. 5, Section 2, Sheet No. 4.

an aggregation of customers from its various cost-of-service classes based on the standard industrial classification ("SIC") code Empire assigned to the customer when Empire began serving the customer.

If the Commission reaches the merits of Empire's variance request, the Commission should deny Empire's request.

First, Empire already has and uses the data it needs to comply with the rule. Empire has monthly billing usage for each of its cost-of-service classes that it uses to weather normalizes billing usage by cost-of-service class for its general electric rate cases. In addition, Empire collects statistically valid hourly load research data by cost-of-service classes that are used to determine the weather response of each of these classes in rate cases.

Second, and importantly, by not using this data, critical information regarding how customers use energy is lost when customer data are aggregated into fewer classes that are not based on cost of service and when load profiles are created from data that was not collected to represent accurate load profiles for these classes.

<u>Loss of Critical Information</u>

The purpose of Commission rule 4 CSR 240-22.030 Load Analyses and Load Forecasting is to provide minimum standards that give the utilities information about how their customers use electricity, so that the utilities can forecast energy usage and design cost-effective demand-side programs. The text of the portion rule that Empire is specifically requesting a variance from follows:

> (7) Base-Case Load Forecast. The utility's base-case load forecast shall be based on projections of the independent variables that utility decision-makers believe to be most likely. All components of the base-case load forecast shall assume normal weather conditions. The load impacts of implemented demand-side programs and rates shall be incorporated in the base-case load forecast, but the load impacts of proposed demand-side programs and rates shall not be included in the base-case forecast.
>
> (A) Major Class and Total Load Detail. The utility shall produce forecasts of monthly energy usage and demands at the time of the summer and winter system peaks by major class for each year of the planning horizon, and shall describe and document those forecasts in its triennial compliance filings. Where applicable, these major class forecasts shall be separated into their jurisdictional components.
>
> 1. The utility shall describe and document how the base-case forecasts of energy usage and demands have taken into account the effects of real prices of electricity, real prices of competitive energy sources, real incomes, and any other relevant economic and demographic factors. If the methodology does not incorporate economic and demographic factors, the utility shall explain how it accounted for the effects of these factors.

> 2. The utility shall describe and document how the forecasts of energy usage and demands have taken into account the effects of legal mandates affecting the consumption of electricity.
>
> 3. The utility shall describe and document how the forecasts of energy usage and demands are consistent with trends in historical consumption patterns, end uses, and endues efficiency in the utility's service area as identified pursuant to sections 4 CSR 240-22.030(2), (3), and (4).
>
> 4. For at least the base year of the forecast, the utility shall describe and document its estimates of the monthly cooling, heating, and non-weather-sensitive components of the weather-normalized major class loads.
>
> 5. Where judgment has been applied to modify the results of its energy and peak forecast models, the utility shall describe and document the factors which caused the modification and how those factors were quantified.
>
> 6. For each major class specified pursuant to subsection (2)(A), the utility shall provide plots of class monthly energy and coincident peak demand at the time of summer and winter system peaks. The plots shall cover the historical database period and the forecast period of at least twenty (20) years. The plots of coincident peak demands for the historical period shall include both actual and weather-normalized peak demands at the time of summer and winter system peaks. The plots of coincident peak demand for the forecast period shall show the class coincident demands for the base-case forecast at the time of summer and winter system peaks.
>
> 7. The utility shall provide plots of the net system load profiles for the summer peak day and the winter peak day showing the contribution of each major class. The plots shall be provided in the triennial filing for the base year of the forecast and for the fifth, tenth, and twentieth years of the forecast. Plots for all years shall be included in the workpapers supplied at the time of the triennial filing.

By grouping all of its non-residential customers into just two groups – commercial or industrial – Empire loses the variability in its customers' usage data that provides valuable information to Empire for designing effective demand-side programs and for forecasting how its customers will use electricity in the future.

When the Commission undertook a major revision of Chapter 22 in 2010 (Case No. EX-2010-0254), Kansas City Power & Light Company made a comment with a similar argument to the Commission when it advocated that the definition of major class in the rule be revenue class, not cost-of-service class. In its response to KCPL's comment, the Commission said the following:

> COMMENT #10: Changes to Section 4 CSR 240-22.020(36). In the proposed amendment, "major class" is defined as a "cost-of-service class of the utility." KCPL suggests that the commission instead define "major class" by economic

> sector—residential, commercial, and manufacturing. KCPL explains that it currently prepares its budgets and forecasts based on economic sectors. Requiring it to prepare separate budgets and forecasts based on its cost-of-service classifications would be duplicative and wasteful.
>
> Staff responded to KCPL's argument at the hearing. Staff explains that there are advantages to using cost-of-service classes in that hourly load research data is at that level and small and large customer, which are impacted differently by economic conditions, are grouped separately.
>
> RESPONSE: The commission agrees with its staff and will not modify the definition of major class. However, this section will be renumbered as section (37) of this rule.

As a Staff witness in the rulemaking hearing, I testified for why the rules should require the use of class cost-of-serve classes instead of revenue classes as follows:

> KCPL states it's splitting between commercial and industrial the most homogenous groups. Well, think about that. Both the Coffee Zone down here on High Street and St. Mary's Health Center are commercial customers. Are they very homogenous? An upholstery shop and Delong's are both considered industrial. Is that very homogenous? I -- I wouldn't think so.
>
> They do say that most economic data forecasts are provided by an economic sector, which those are, and I would agree with that.
>
> And the company has used forecast of energy efficiency trends from United States Department of Energy and their models -- Department of Energy's models are separated by economic sector, and that is true.
>
> One thing that they state which kind of bothered me was, it would require separate budgets and IRP forecasts, which may not be in sync.
>
> Now, if I had two different models and they forecast separately different directions, that would give me great concern. They're using the same input data. If they aren't the same, one of the -- you need to go back and look at your models.
>
> I do realize that budget models often aren't at the same level as what is done in the resource planning rules, but the difference really should be checked if the two aren't in sync.
>
> There are advantages to using class cost of service classes. The hourly load research data is at that level. Small business and large businesses, which are impacted differently by economic conditions, are grouped separately.
>
> There's small general service, which would have Coffee Zone in it. There's -- and it would -- it may have an upholstery shop in it, too. And there is the bigger classes for customers such as St. Mary's and Delong's.
>
> There -- the companies, when they acquire a customer, will put what's often called SIC codes -- which stands for standard industrial classification code – on that customer to decide whether it's commercial or industrial. That's how that's [determined].

> By using the class cost of service classes, you don't have to worry about whether that -- how that classification is made. For example, a building that has an industrial plant might have some office space -- quite a bit of office space in it. Is that commercial? Is that industrial? When you're using class cost of service, you don't have to worry about the split.[9]

In this rulemaking, the current definition of major class was set as cost-of-service classes from revenue classes as defined in the original rule.[10]

Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri") recognizes the usefulness of the Commission's definition of major class when, in its resource plan filings in Case Nos. EO-2011-0271,[11] EO-2015-0084,[12] and EO-2018-0038,[13] it states:

> Ameren Missouri tracks its historical sales and customer counts by revenue class (Residential, Commercial, and Industrial), and also by rate class (Small General Service, Large General Service, Small Primary Service, and Large Primary Service). **Ameren Missouri uses these rate classes as the sub-classes for forecasting, both because the data is readily accessible from the billing system and because it provides relatively homogeneous groups of customers in terms of size.** (Emphasis added)

To date, Empire has yet to file a resource plan with load analysis and load forecasting conducted by cost-of-service class. In the first triennial resource plan Empire filed after the Commission required utilities to forecast their loads at the cost-of-service class aggregation level, Staff noted as a deficiency that Empire had not developed load forecasts at the cost-of-service class level.[14] Staff's suggested remedy for that deficiency was that if Empire desired to develop its load forecasts using classes other than cost-of-service classes, it should file for a variance from rule 4 CSR 240-22.030(7)(A) that demonstrated good cause for not using cost-of-service classes.[15]

Empire did file for a variance from rule 4 CSR 240-22.030(7)(A) a year prior to its next triennial resource plan filing in Case No. EE-2015-0249 as the Commission's rules require. Empire's "good cause" in that filing for why it should be granted a variance was exactly the same as the brief three-sentence reason Empire provided in this case, ending with a statement that it had used revenue

[9] Transcript of Proceedings, Volume 1, page 15-17.

[10] In their first resource plan filings after the revised rule became effective, Case Nos. EO-2012-0323 and EO-2012-0324, KCPL and KCP&L-Greater Missouri Operations Company filed their load analysis as required by the rule. In their next two filings, they analyzed the industrial customers as a class and the commercial customers split into small and large commercial classes.

[11] *In the Matter of Union Electric Company's 2011 Utility Resource Filing Pursuant to 4 CSR 240 – Chapter 22,* Case No. EO-2011-0271, Chapter 3 – Load Analysis and Forecasting, pg. 3.

[12] *In the Matter of Union Electric Company's 2014 Utility Resource Filing Pursuant to 4 CSR 240 – Chapter 22,* Case No. EO-2015-0084, Chapter 3 – Load Analysis and Forecasting, pg. 3.

[13] *In the Matter of Union Electric Company's 2017 Utility Resource Filing Pursuant to 4 CSR 240 – Chapter 22,* Case No. EO-2018-0038, Chapter 3 – Load Analysis and Forecasting, pg. 3.

[14] Case No. EO-2013-0547, *In the Matter of The Empire District Electric Company's 2013 Triennial Compliance Filing Pursuant to 4 CSR 240-22*, Staff Report on The Empire District Electric Company's Electric Utility Resource Planning Triennial Compliance Filing, page 19.

[15] *Id*.

classes in its immediately prior 2013 resource plan filing. Empire did not acknowledge in its explanation in its request for a variance that the Commission's Staff had noted Empire's use of revenue classes instead of rate classes to be a deficiency in Empire's 2013 resource plan filing and that Staff's suggested remedy for that deficiency was that if Empire desired to develop its load forecasts using classes other than cost-of-service classes, it should file for a variance from rule 4 CSR 240-22.030(7)(A) that demonstrated good cause for not using cost-of-service classes.

In its response to Empire's request for a variance in Case No. EE-2015-0249, Staff recommended that the Commission grant Empire a variance from rule 4 CSR 240-22.030(7)(A) but require Empire to provide in its triennial plan filing a mapping of rate classes to revenue classes. That mapping, as provided in *Volume 3, Load Analysis and Load Forecasting* filed in Case No. EO-2016-0223, is shown below:

Table 3-40 - Load Research to Class Profile Mapping

Class	Load Research	Weight
Residential	Residential	100.00%
Commercial	CB	77%
	GP - Secondary	6%
	SH	13%
	TEB	4%
Wholesale	Monett, Mt. Vernon, Lockwood, Chetopa	NA
Street Highway	CB	77%
	Generic Lighting Shape	22%
	SH	1%
Interdepartmental	CB	86%
	GP - Secondary	14%
Industrial: Other Industrial	CB	26%
	GP - Secondary	57%
	LP - Primary	8%
	SH	5%
	TEB	4%
Industrial: Praxair	Praxair	NA
Industrial: OPP	GP - Primary	67%
	LP - Primary	33%

This table shows the disparity of customers in the commercial and industrial revenue classes.[16] The commercial class contained customers without space heating and with a very small demand, such as small as a stand-alone ATM machine, along with General Power customers as large as the 890,000 square foot Mercy Hospital in Joplin. In this resource plan there were small space heating customers in the street lighting customer class. The industrial class includes a significant number

[16] Empire's resource planning report in Case No. EO-2016-0223 does not specifically identify how the "Weight" was calculated.

of customers that have a monthly demand of less than 40 kW and customers that are served at primary and transmission voltage.

In the report just prior to this mapping table, Empire provided the following regarding the need to create load profiles for the commercial and industrial revenue classes:

> Empire maintains an active load research program. Unfortunately, the program is not designed to forecast load shapes by the classes identified in this forecast process. To obtain historical load shape data for the profile models, the load research data are aggregated based on the annual average 2014 customer counts associated with each rate in the class.

What this means is that the load profiles used in the resource planning process for the commercial and industrial revenue classes are not determined through load research data that is collected from random samples designed to accurately estimate the load profiles for these groups of customers. The commercial and industrial revenue class load profiles are instead pieced together from data used to develop load research profiles for cost-of-service classes.

These load profiles are used as a basis for the planning process to determine what resources are needed. These are also the load profiles used to determine if demand-side programs are cost-effective. If the Commission grants Empire the variance from rule 4 CSR 240-22.030(7)(A) it requests, then the Commission is by default giving Empire approval to use these imprecise load profiles as a foundation for its resource planning process.

Conclusion

Empire is asking the Commission to approve its request to forecast customer usage and usage patterns at a very aggregate revenue class level foregoing much of the information that can be gleamed from the information it has collected through cost-of-service billing data and its load research programs, although this more disaggregated data is readily available to Empire.

In my opinion the Commission should not grant Empire’s request that the Commission grant it a variance to allow it to use the more aggregated revenue classes instead of the more disaggregated cost-of-service classes for performing its load forecasting and analyses. This variance, while it might perhaps result in forecasting models that appear better statistically, will require Empire to create load profiles for revenue classes when it already has them for cost-of-service classes. Further, Empire already has the data needed to make forecasts by cost-of-service class, and Empire already has monthly billing usage and statistically valid cost-of-service class load profiles.