Filed
June 7, 2021
Data Center
Missouri Public
Service Commission

Exhibit No. 13

Staff – Exhibit 13
Sarah Lange
Rebuttal Testimony
File No. ET-2021-0082

Exhibit No.:	
Issue(s):	*Regulated Surge Protection Program*
Witness:	*Sarah L.K. Lange*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Rebuttal Testimony*
Case No.:	*ET-2021-0082*
Date Testimony Prepared:	*February 19, 2021*

MISSOURI PUBLIC SERVICE COMMISSION

COMMISSION STAFF DIVISION

TARIFF/RATE DESIGN

REBUTTAL TESTIMONY

OF

SARAH L.K. LANGE

UNION ELECTRIC COMPANY, d/b/a AMEREN MISSOURI

CASE NO. ET-2021-0082

Jefferson City, Missouri
February 2021

TABLE OF CONTENTS OF

REBUTTAL TESTIMONY

OF

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CASE NO. ET-2021-0082

REBUTTAL TESTIMONY

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SARAH L.K. LANGE

UNION ELECTRIC COMPANY,
d/b/a AMEREN MISSOURI

CASE NO. ET-2021-0082

Q. Please state your name and business address.

A. My name is Sarah L.K. Lange and my business address is Missouri Public Service Commission, P. O. Box 360, Jefferson City, Missouri 65102.

Q. Who is your employer and what is your present position?

A. I am employed by the Missouri Public Service Commission ("Commission") and my title is Economist, in the Tariff and Rate Design Department of the Industry Analysis Division.

Q. What is your educational background and work experience?

A. I have testified in numerous cases before this Commission on the subjects of rate design, class cost of service, transmission, and other tariff and tariff design issues. I completed a Bachelor of Science degree in Historic Preservation from Southeast Missouri University in Cape Girardeau, Missouri, and a Juris Doctorate degree from the University of Missouri, Columbia. I have been employed by the Missouri Public Service Commission since May 2006. Prior to transferring to the Economic Analysis Section in July 2013, I was a Senior Counsel in the Staff Counsel's Office. A copy of my credentials and case participation is attached as Schedule SLKL-r1.

EXECUTIVE SUMMARY

Q. What concerns does Staff have with Ameren Missouri's estimate of the effect on non-participating ratepayers of its proposed surge protection program?

A. Ameren Missouri failed to incorporate the impact of Ameren Missouri's authorized Plant in Service Accounting ("PISA") into the revenue requirement analysis and unsupported and unreasonable assumptions underlie Ameren Missouri's estimates of net margin resulting from the proposed program.

Q. If Ameren Missouri refined its estimate of the effect of its proposed program on non-participating ratepayers, would Staff recommend proceeding with the program?

A. No. First, the customers in Ameren Missouri's service territory do not need a legally protected monopoly to offer the proposed program in order to obtain surge protection service or the installation of surge protection devices. Also, the proposed program as discussed in Ameren Missouri's testimony and the proposed tariff are poorly designed and unclear. Finally, under any scenario, Ameren Missouri's proposed program will cause increases in non-participating customers' rates in the initial rate cases following implementation of the program. The economic collapse that has occurred in the last year has shifted Staff's perspective of the ability of a typical Ameren Missouri ratepayer to absorb even a minimal increase to promote a new program, particularly one so far afield from the provision of utility services.

Q. If the Commission were to authorize Ameren Missouri to proceed with offering the program on a regulated basis, what modifications would be necessary?

A. A hold harmless provision should be incorporated to mitigate the risk of this program to non-participating ratepayers, and robust pre-and post-enrollment customer education is necessary.

Q. Is there a program redesign that could substantially limit the risks to non-participating customers?

A. Yes. Much of the risk for non-participating customers is associated with the ongoing capital costs of the device installations, coupled with Ameren Missouri's proposed unreasonable plans for treatment of early termination fees. A more reasonable approach would be an upfront charge to participants of approximately $125.00, and ongoing monthly fees of approximately $4.00, subject to change at each rate case. A termination fee of approximately $37.50 could also be appropriate.

Minimization of risk to non-participating ratepayers and program redesign

Q. Could you summarize the need for a hold-harmless provision in the context of a program with a levelized cost rate design?

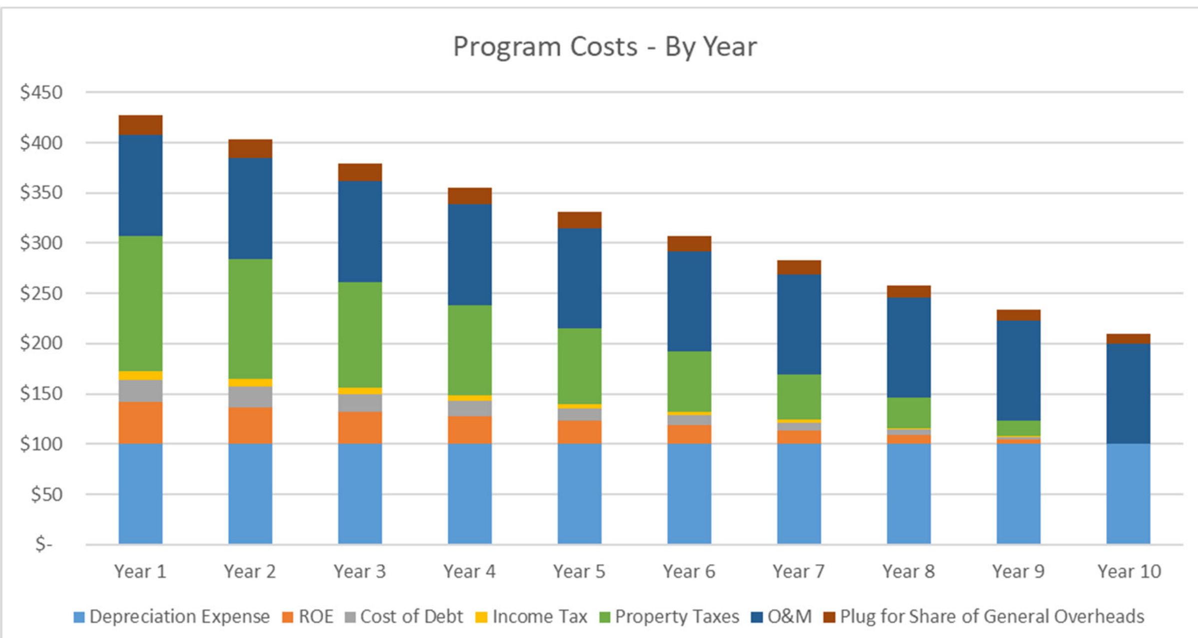
A. Yes. Essentially, any program based on the levelization of the revenue requirement of providing a service over time will result in anomalies due to the presence of regulatory lag. Positive regulatory lag will result in unearned financial benefits to shareholders in excess of the authorized return on and of investment. While this concept and explanation are admittedly tedious, this phenomena is becoming increasingly important as utilities offer more programs that are outside of straightforward provision of electrical services. A simplified example is provided below which (1) does not include the impacts of PISA, (2) assumes a ten year program run of a single installation, (3) does not include inflation of Operations & Maintenance (O&M) costs, and (4) assumes a four-year rate case cycle.

Q. What are the costs and expenses assumed in this simplified example?

A. For purposes of this simplified example, the following assumptions are in place:[1]

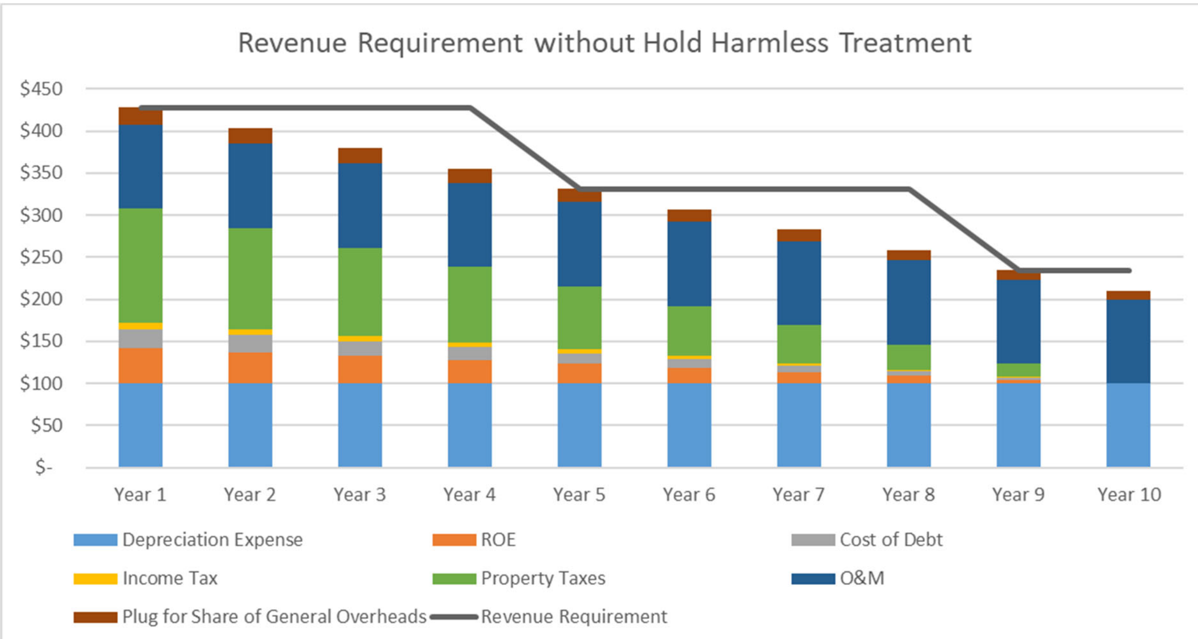
Original Cost	$ 1,000
Depreciable Life	10
Cost of Removal	0%
Annual O&M	$ 100

The sum of these assumed costs and expenses are provided below, on a year-by-year basis.



[1] Staff used generic amounts for Return on Equity (ROE) of 9.25%, Cost of Debt of 5%, Capital Structure of 50%/50%, Income Tax treatment of 20% of ROE, Property Tax treatment of 15% of net rate base, and a plug for allocated overhead of 5% of annual revenue requirement.

Q. How do these annual costs and expenses compare to the revenue requirement of this program that one would expect to be calculated in a rate case, absent an appropriate hold-harmless provision?



Q. What does the difference between the gray line and the top of the column represent?

A. The gray line represents the difference between the incremental revenue the Commission would be expected to authorize the company to collect in a general rate case, and the incremental costs and reallocated costs that the company would be expected to incur.[2] In a given rate case, the entire area under the gray line represents revenue that rates will be designed to collect, whether from participants or non-participants.

[2] This scenario also assumes the rate for the program is set in a general rate case so that double-recovery of the reallocated costs does not occur, as applied to a single installation under a program where there is an expectation that there will be a bow-wave of new participants, but that the influx of new participants is expected to level off over time.

Q. In this example, what is the rate that is required from the participant, per month, to fill the area under the gray line?

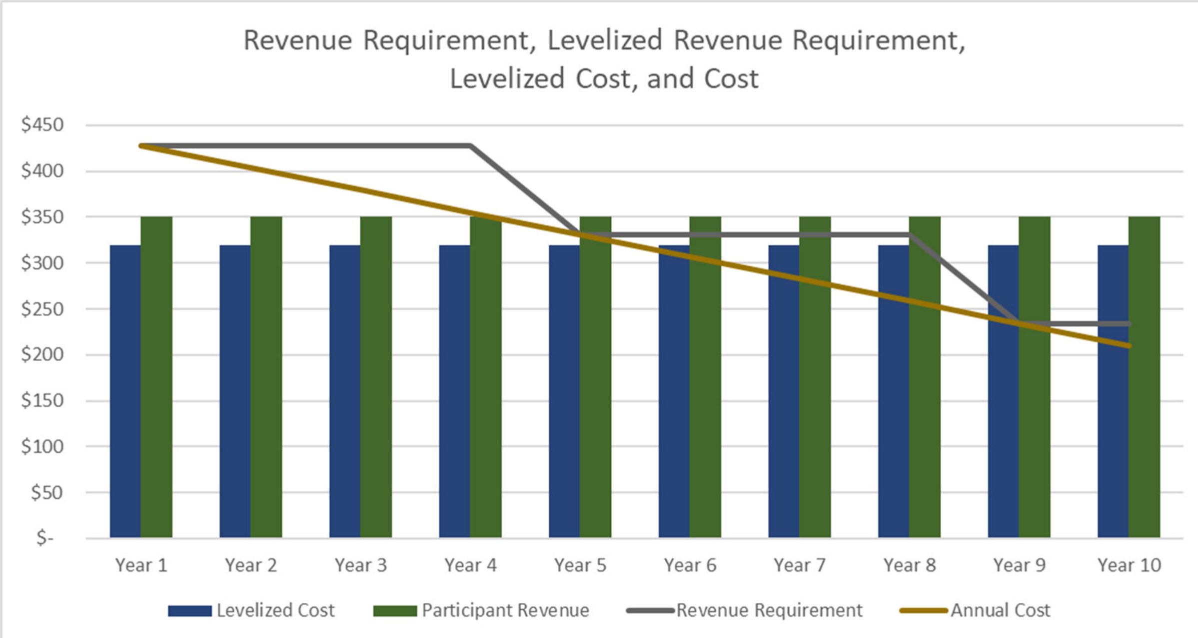
A. To fill the area under the gray line, a participant would need to provide $29.20 of revenue per month, for a total of approximately $350 per year, and $3,504 over the participant's enrollment.

Q. In this example, what is the rate that is required from the participant, per month, to match the total program costs represented by the sum of the columns in the graph above, which fall under the gray line?

A. To match the program's costs (as opposed to its revenue requirement), a participant would need to provide $26.58 of revenue per month, for a total of approximately $319 per year, and $3,189 over the participant's enrollment.

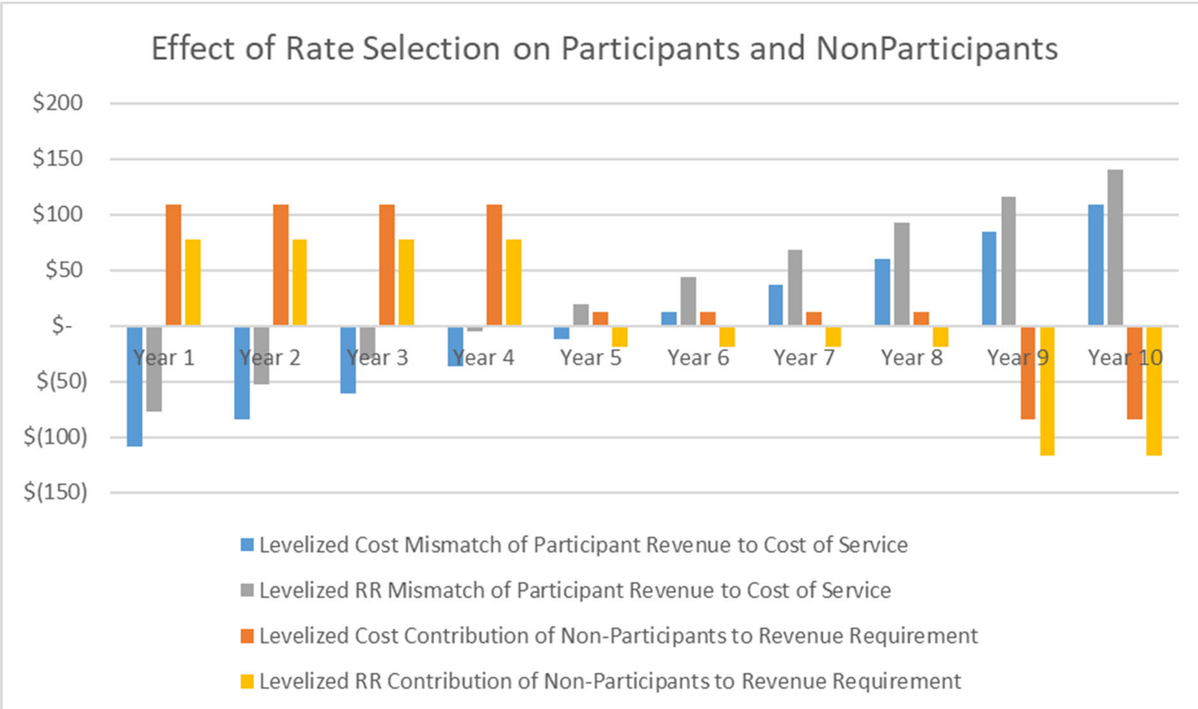
Q. Could you illustrate the difference between the cost of providing the program, the revenue requirements associated with the program under the assumed rate case cycle, and the levelized cost rate and levelized revenue requirement rate?

A. Yes. In the graph below, the columns representing each year's costs from the graph above have been replaced by the brown diagonal line. The annual participant revenue that is required to fill the area under the brown line ($319 per year) is illustrated as the blue columns. The annual participant revenue that is required to fill the area under the gray line is illustrated by the green columns ($350 per year). The blue columns represent the rates that result from a levelized cost analysis, while the gray columns represent the rates that result from a levelized revenue requirement analysis.



Q. Which method of developing levelized rates minimizes the risk on nonparticipants?

A. By minimizing the unfilled area under the gray (revenue requirement) bar in the early years of the program's existence, the $29.20 rate based on the levelized revenue requirement is less risky to non-participating ratepayers than the rate based on the levelized costs, and by shifting the recovery goal from the forecasted cost to the forecasted revenue requirement, the responsibility for the revenue requirement associated with positive regulatory lag is shifted from non-participants to participants, as illustrated below:



Q. How has this issue been addressed in the past?

A. In the past, rates were subject to change at each rate case. This continues to be the best practice.

Q. Can you quantify the impact of the program's existence on non-participants under the example provided above?

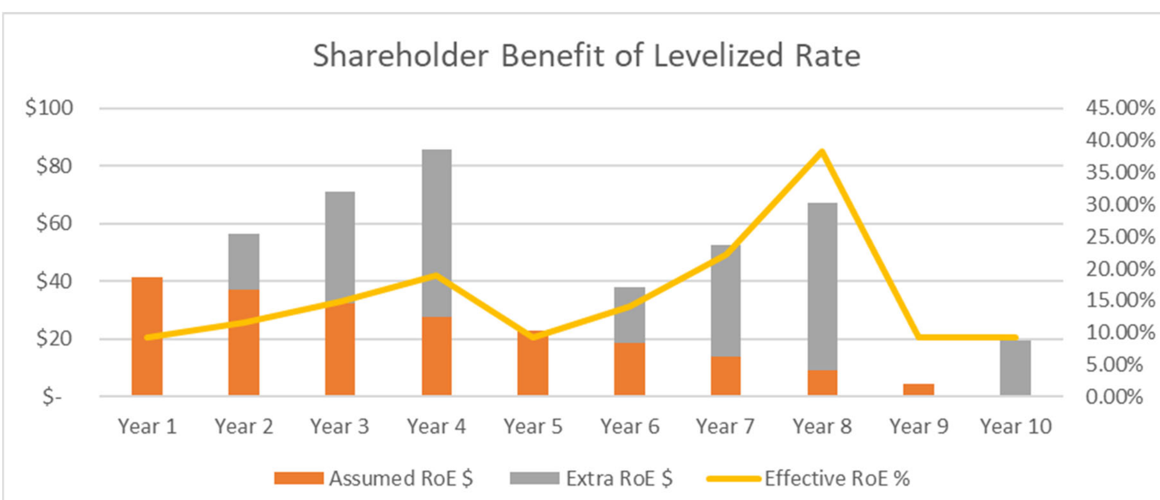
A. Yes. If all assumptions used to set the rate in my example are correct and the levelized revenue requirement is used to set the participant rate, nonparticipating ratepayers will be harmed by the effects of the time-value of money by approximately $36 over this ten year example, which is approximately 4% of the cost of the initial investment of $1,000. If all assumptions are correct and the levelized cost is used to set the participant rate, nonparticipating ratepayers will be harmed by the effects of regulatory lag and the time-value of money by approximately $323, which is approximately 32% of the cost of the initial investment.

Q. Can you quantify the impact on shareholders under the example provided above?

A. Yes. If all assumptions are correct, and if either the levelized revenue requirement or the levelized cost is used to set the participant rate, in the example, shareholders will benefit in excess of the incremental and allocated cost of providing the service by the effects of the time-value of money and regulatory lag by approximately $287, over this 10 year example, which is approximately 29% of the cost of the initial investment of $1,000. Ignoring the time-value of money, shareholders will benefit in excess of the incremental and allocated cost of providing the service by approximately $315, which is 31% of the initial investment.

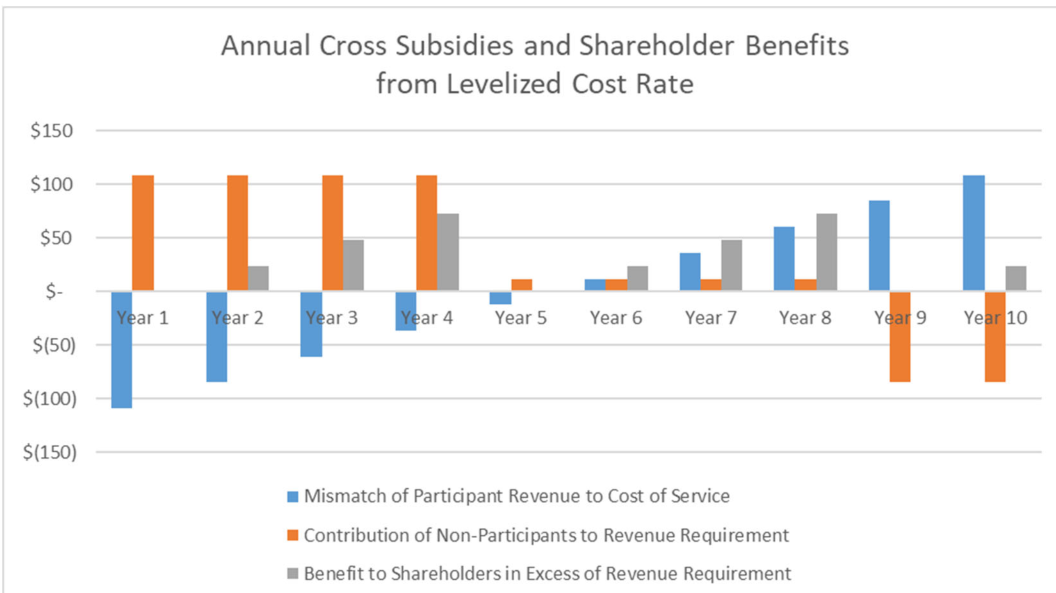
Q. What effective rate of return is generated by the regulatory lag-created shareholder benefits in excess of the incremental and allocated cost of providing the service in the example provided above?

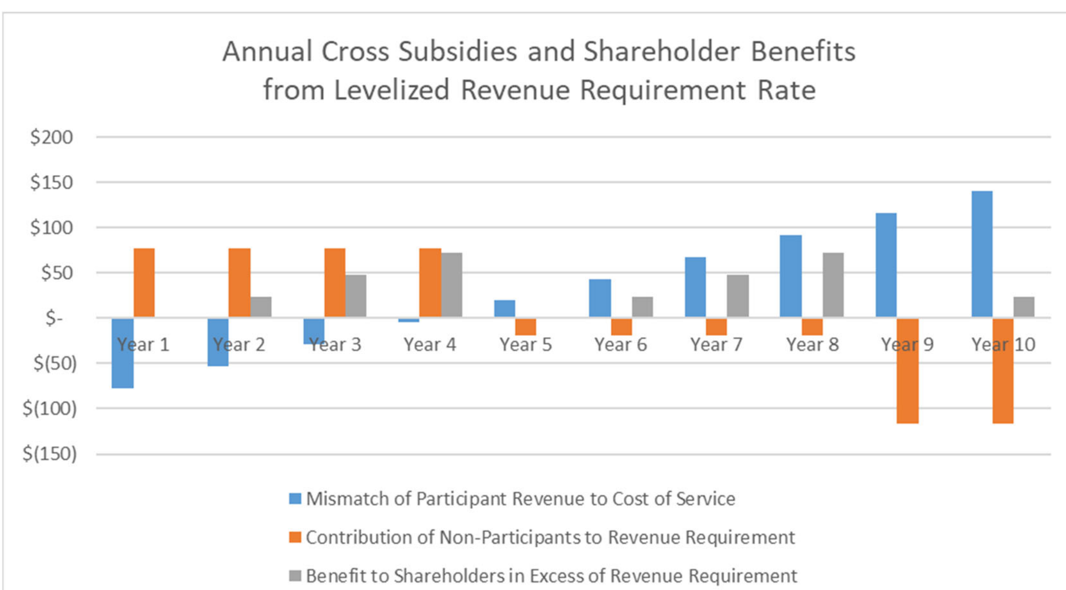
A. The dollars associated with the authorized return, the dollars associated with the excess return, and the resultant percent ROE, net of income tax, are provided in the illustration below:



Q. For its surge protection proposal, does Ameren Missouri propose to protect non-participants (or participants) from the impact of regulatory lag?

A. No. The Ameren Missouri testimony glosses over positive regulatory lag that the company anticipates, which will be enhanced by the PISA accounting treatment it has requested, and will not be reduced by the termination provisions as designed. Summaries of the relative sizes of cross subsidies and shareholder benefits in excess of revenue requirement for the hypothetical example provided above are provided in the graphs below:





Essentially, Ameren Missouri proposes non-participants accept a pricing method that will saddle them with the revenue responsibility for the shareholder's benefits in excess of the cost of providing the service, as well as the risk to indemnify the shareholders for the actual cost of providing the service in the event assumptions prove wrong or that participation does not continue. The Ameren Missouri approach is to focus on the speculative negative orange bars in the later years of the graph, to pay less attention to the more certain orange bars in the early years, and to ignore the gray bars of excess revenue entirely.

Q. Turning from this general example to the details of Ameren Missouri's proposal, at page 6 of witness Mr. Jared Schneider's direct testimony, he states that "Program participation is entirely voluntary and after a short, two-year period (which will allow participation fees to fully cover the cost of the device), customers are free to stay on or leave the Program at no cost." If participation fees or the planned termination fee will "cover" the cost of the device after two years, how is it possible that this program could be harmful to nonparticipating ratepayers?

A. The program would be harmful to nonparticipating ratepayers because Ameren Missouri has stated its intent to retain the program revenues and any received termination fees for shareholders, as opposed to recording these revenues and termination fees in a manner to "fully cover the cost of the device" as alluded by Mr. Schneider.

Q. What is the difference between recording customer revenues and fees as revenues and recording customer revenues and fees to "cover" the cost of the device?

A. Ameren Missouri is requesting to own the surge protection devices and to place the cost of the devices and the capitalized cost of installing the devices into ratebase. This means that for roughly 15 years per device, Ameren Missouri would be entitled to a "return of" its capital in the form of ongoing depreciation expense, and entitled to an opportunity to obtain a "return on" its capital in the form of revenues in excess of costs to be enjoyed by its shareholders. Ameren Missouri is also requesting that the costs (presumably some capital and some expense) be included in its regulated revenue requirement, as well as the ongoing annual expenses of operating the program. [3]

In contrast, the program could be designed so that an offsetting accounting entry is made to offset the capital. In this arrangement, participants would immediately reimburse Ameren Missouri for the capital associated with purchasing and installing the device. Because the company would receive an immediate "return of" its capital, no ongoing depreciation expense would be required from either participating or non-participating ratepayers, and there would be no capital contributed by Ameren Missouri investors on which to provide a "return on" their investment.

Q. Did Ameren Missouri's customer research indicate that customers preferred paying for surge protection upfront or via ongoing fees?

A. In Ameren Missouri's "December Research" presentation provided in response to the Office of the Public Counsel ("OPC") Data Request (DR) No. 1102, Ameren Missouri noted that 73% of its residential survey participants indicated that they were interested in purchasing the surge collar device outright from Ameren Missouri, which is not an option under the current Ameren Missouri proposal. Only 43% of those responding were interested in making recurring payments for surge protection insurance. Thus, as designed, Ameren Missouri's proposed program shifts risks to non-participating customers by incorporating

[3] In response to OPC DR No. 1101 Ameren Missouri declined to record the program revenues contributed to cover the cost of the device as contributions in aid of construction (CIAC). In response to Staff DR No. 0006 Ameren Missouri indicated that the termination fee will be recorded to Account 451 as Miscellaneous Revenue. Thus, this program would increase Ameren Missouri's regulated revenue requirement without implementing reasonable measures to offset the increases to ratebase with the dedicated stream of program revenues. Based on Mr. Schneider's net revenue model, 3rd party removal cost is charged to O&M.

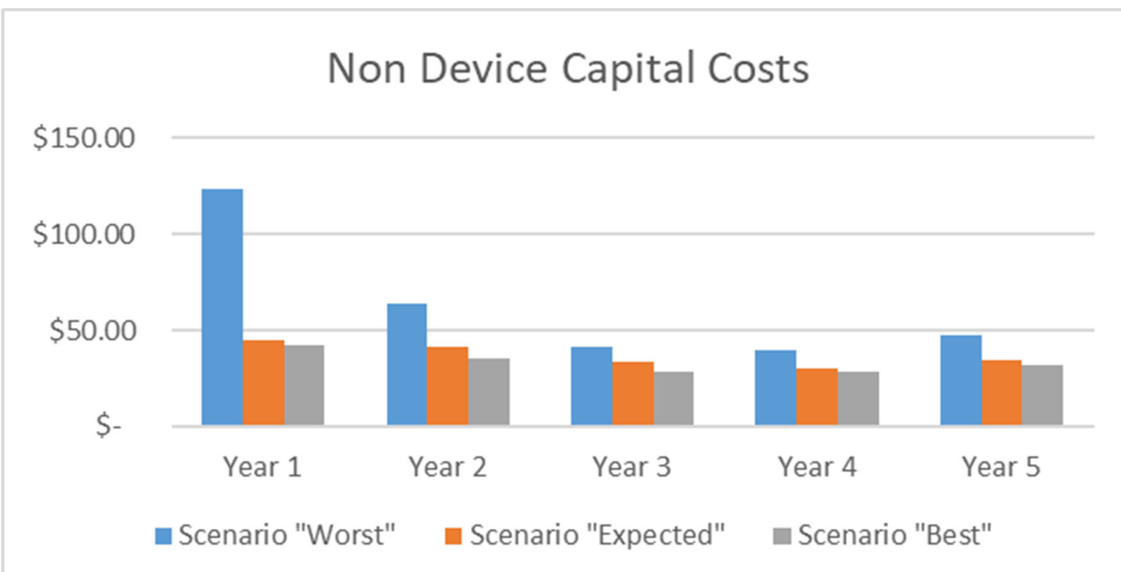
features that Ameren Missouri's research suggests makes the program less attractive to potential participating customers.

Q. Is there a way to redesign the program to reduce the risks to nonparticipants and to better meet the needs of potential participants?

A. Yes. The obvious solution would be for participants to pay the upfront costs when they enroll in the program with a minimal ongoing monthly charge for the program expenses. This design also eliminates the need for extensive and unreliable modeling relying on difficult-to-ascertain assumptions. Also, it would reduce the bills to participating customers by approximately 50%.

Q. What is the upfront cost of obtaining and installing the physical device?

A. According to Mr. Schneider's workpaper, provided in response to Staff DR No. 0001, the cost of the surge protector itself and the installation ring is \$69.95 per ring, with capitalized installation costs per device of a simple average of \$44.41, although the projected installation costs vary across Mr. Schneider's scenarios and years, as illustrated below:[4]

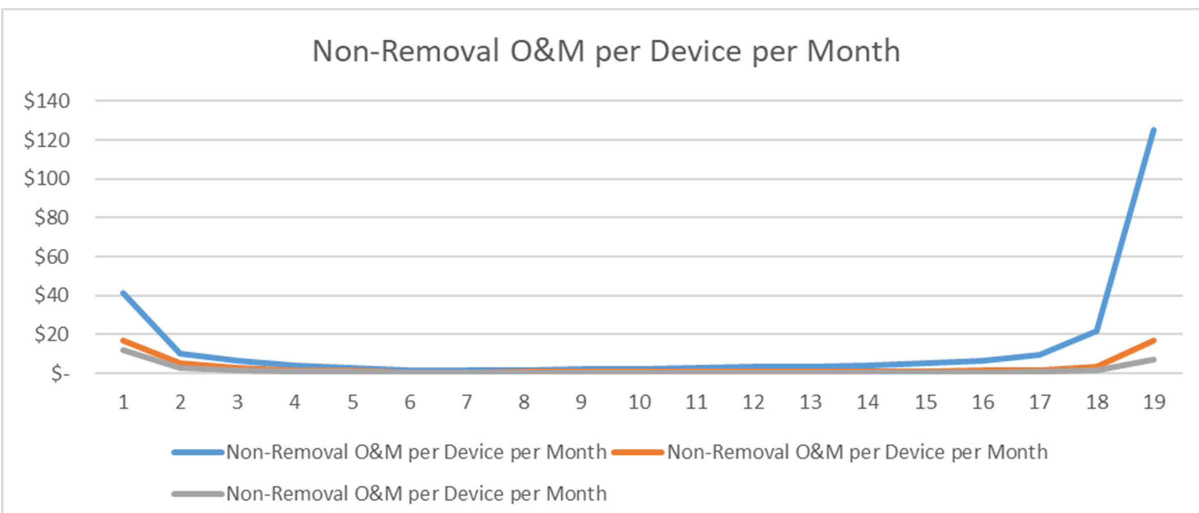


[4] Based on tab "Input Sheet – 3rd Party Expense," of Mr. Schneider's direct workpaper, the driver of this variation appears to be the number of "Surge Device Installer" monthly fees and their associated travel and per diem expenses, as divided by the number of devices installed. Based on this input tab, Ameren Missouri expects installation costs to range from approximately \$304,000 to \$551,000 annually.

Mr. Schneider's workpaper also assumes upfront expenditures of $250,000 for "Other Digital (website, etc.)" and $40,000 for billing updates. While higher quality data is necessary to refine this amount, the available data suggests an upfront fee of approximately $125 is reasonable.

Q. What level of ongoing expense does Ameren Missouri reflect in its modeling for providing the program?

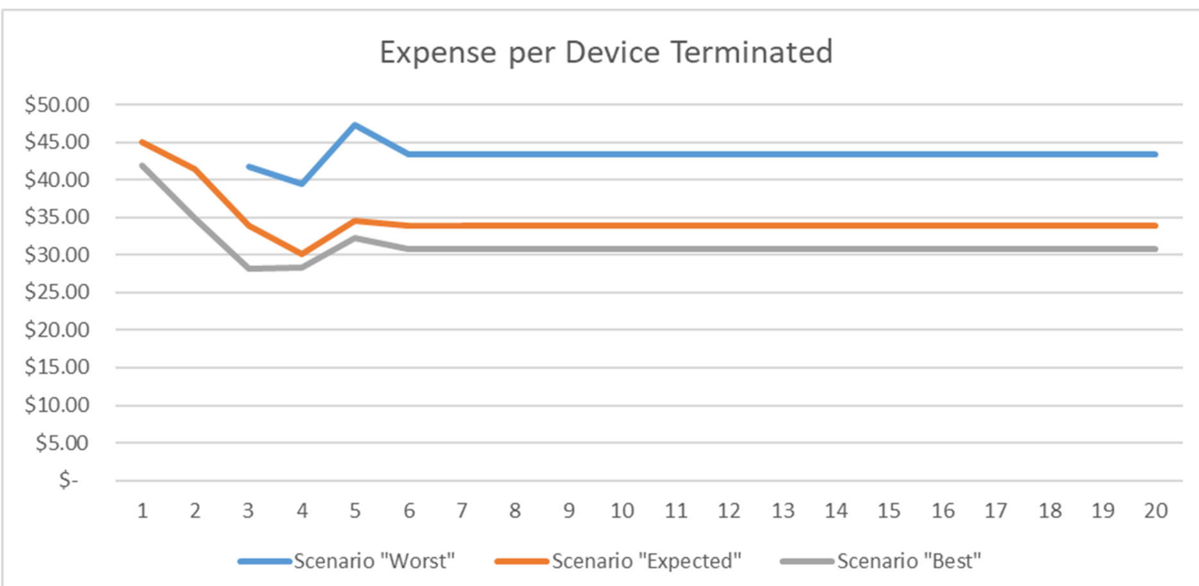
A. As indicated by Mr. Schneider's direct workpapers, the simple average across all scenarios for the average expense associated with the program is $6.12 per device per month. However, this value includes somewhat high startup cost that may be more properly included in the initial fee, and would not be collected under the Ameren Missouri-proposed approach until years into a given customer's participation.



An ongoing fee of approximately $4.00 seems a reasonable starting point to be refined in this docket - if applicable - based on improved data. This value is on the upper side of the modeled ongoing prices, therefore when the fee is adjusted in an initial future rate case it is less likely to increase anticipated bills for customers electing to participate based on any rates established in this docket when applying the projected data and assumptions. This fee would be subject to change in future rate cases as directly-incurred costs and reasonable assignments and allocations of Ameren Missouri's overall cost of service may vary over time, and is expected to increase with labor costs, billing costs, and the general costs of Ameren Missouri's utility business including administrative and general expenses.[5]

Q. What level of termination expense does Ameren Missouri reflect in its modeling for removal of the device when a customer elects to cease participation?

A. As indicated by Mr. Schneider's workpapers, the simple average across all scenarios for the average expense of hiring a third party to remove the device is approximately $35.88. The variation by scenario is provided in the graph below:

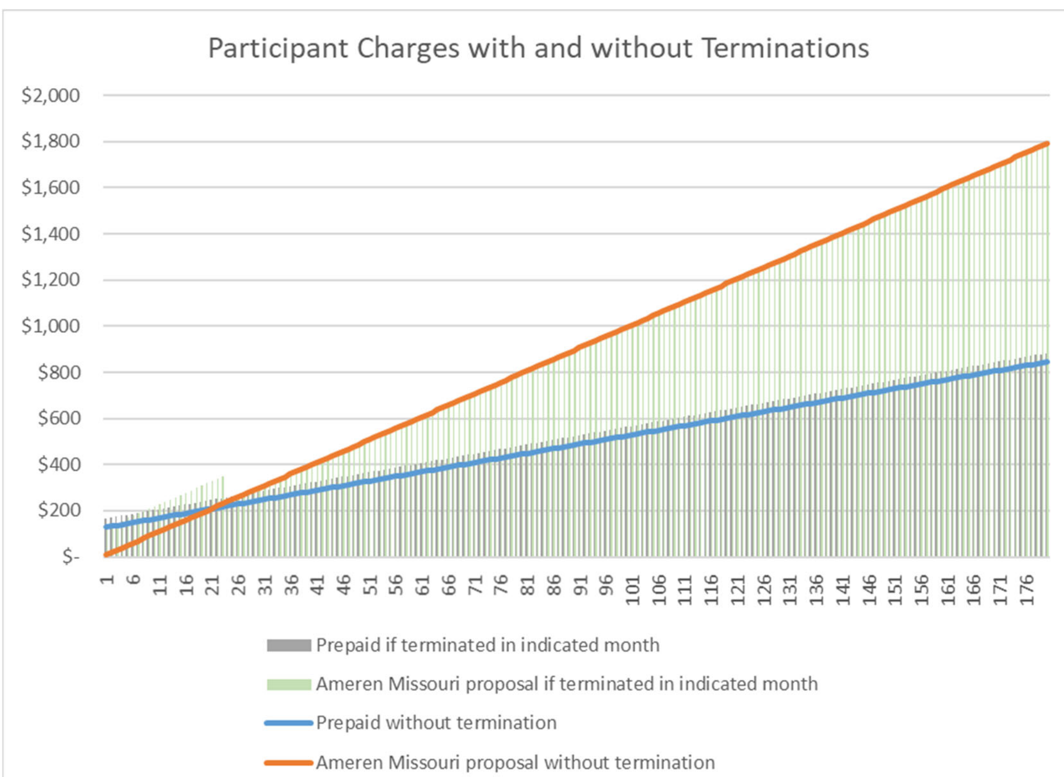


[5] The values in this testimony do not incorporate revisions and updates to the direct workpapers that have been provided in response to Staff data requests by Ameren Missouri after February 1, 2021.

Initially setting a termination fee of approximately $37.50 seems a reasonable starting point to be refined in this docket - if applicable - based on improved data. This value is on the upper side of the modeled prices, therefore if and when the fee is adjusted in a future rate case it would not increase anticipated bills for customers electing to participate based on any rates established in this docket based on projected data and assumptions. This fee could potentially change in future rate cases as incurred costs may vary over time.

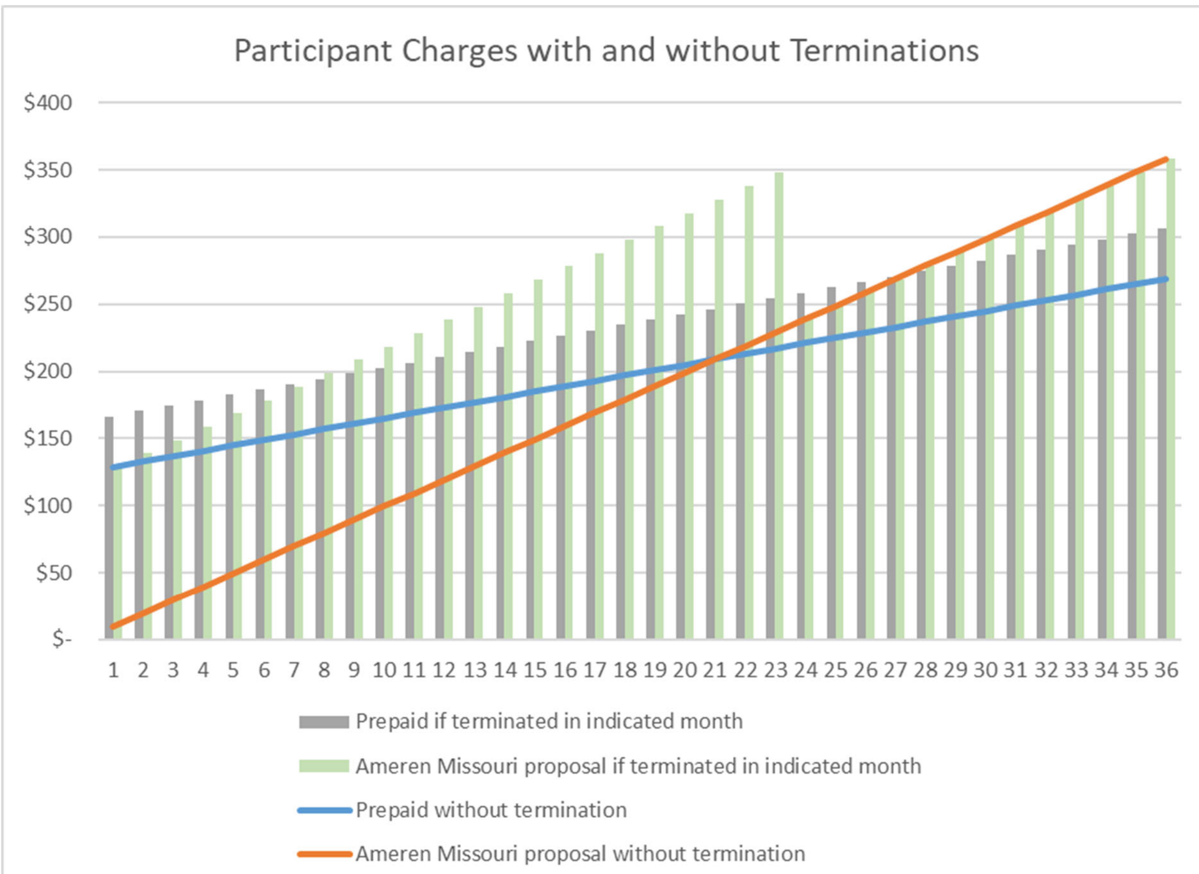
Q. How does the bill a participant would experience for the program vary over time under Ameren Missouri's requested design, and under the redesign discussed above?

A. Given the quality of data provided by Ameren Missouri the rates resulting from the redesign discussed above are preliminary. However, the total amount a participant would be billed for Ameren Missouri's proposed surge protection service is shown below, by month, under each design. The vertical bars indicate what the customer would have paid in total if the customer terminates service in the indicated month.



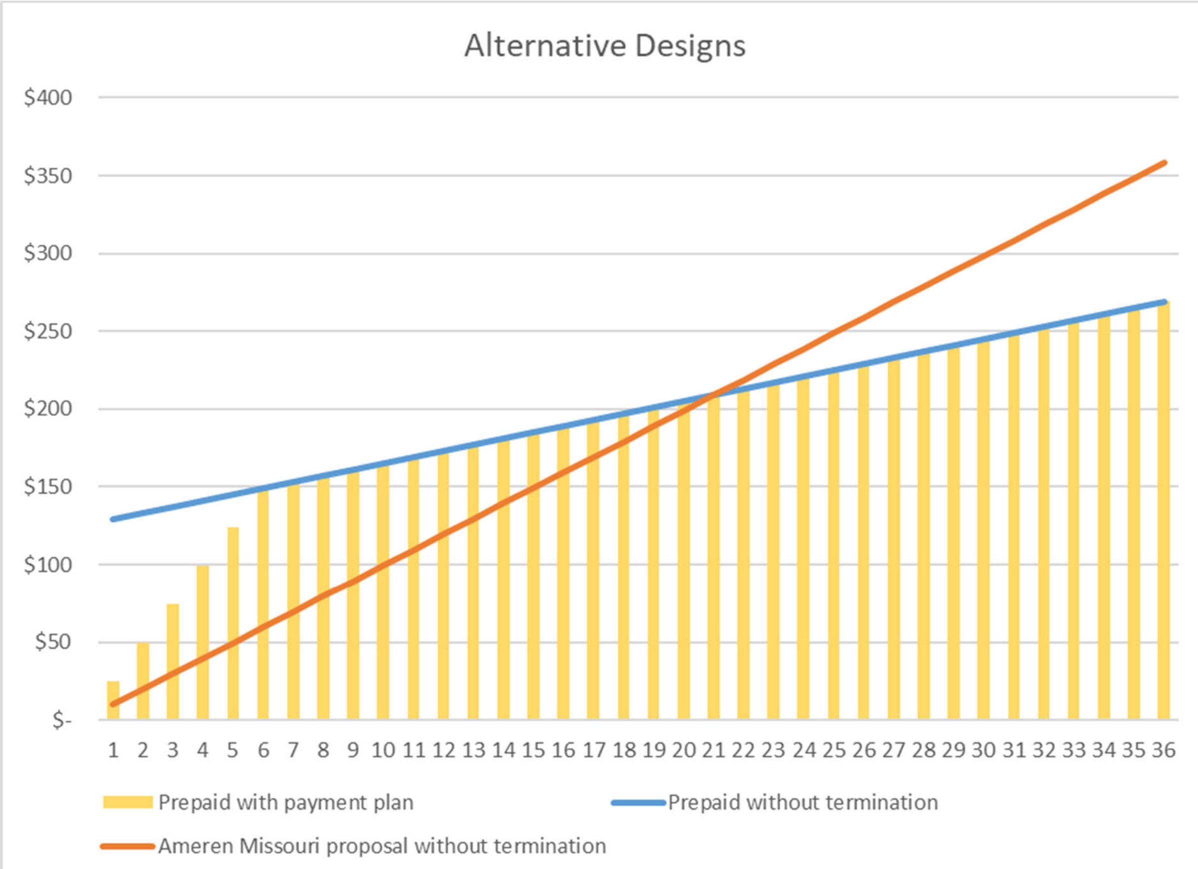
A participant would be billed $1,791 in 15 years under the Ameren Missouri proposal, and approximately $882.50 under the proposed redesign. This is a difference of approximately $908 or 51%, largely attributable to giving customers the ability to purchase the $125 device upfront.

A detailed graph of the first 36 months is provided below:



Q. Has Staff considered modifying the redesign to smooth the upfront fee?

A. Yes. The participant bill, if the approximate upfront fee was spread over the first 6 monthly bills, is reflected as the gold vertical bars included in the graph below.



Q. Ameren Missouri alleges that the purpose of this program is to create additional revenues to reduce the rates for non-participating ratepayers. Does reducing the costs to participants make this program worse for nonparticipants?

A. No. First, all rate schedules and company practices are legally required to be offered and conducted without undue discrimination. I am not aware of any justification to overcharge participants in a utility program for the benefit of nonparticipants. Second, as will be discussed below, Ameren Missouri's projections are wildly unreliable and all financial risks are placed on non-participating ratepayers and all financial benefits are retained by Ameren Missouri, while participants are also being overcharged.

Ameren Missouri's analysis of non-participant impact

Q. What features undermine the reliability of Ameren Missouri's non-participant impact analysis?

A. Any forward looking analysis relies upon various assumptions. However, Ameren Missouri's analysis does not reasonably reflect PISA accounting treatments and mixes and matches the lifecycle cost calculation conducted by Mr. Schneider with the revenue requirement calculation of an ongoing program. Most significantly, Ameren Missouri's witness Mr. Steven M. Wills' analysis relies entirely on assumed interplay between program deployment and rate case timing.[6] Also, the rate case levels of costs and revenues appear to be based on a summation of 12 months of activity, without any normalization or annualizations. While those approaches are possible, they are not typical in my experience. Finally, while Mr. Wills employs a generally reasonable process to estimate rate case frequency, he fails to apply variations to that frequency to determine the sensitivity of non-participant benefits and detriments to the variations in rate case timing.

Q. Are there specific critiques of Mr. Wills' rate case timing analysis aside from the reasonableness of its inputs and its failure to model multiple scenarios?

A. Yes. Mr. Wills rate case interval analysis assumes that the limited rate case conducted for purposes of incorporating a bill credit to implement the impact of the Tax Creation and Jobs act functions as a general rate case for these purposes.

[6] As noted by Mr. Wills in Ameren Missouri's November 20, 2020 Response to Staff's November 10, 2020 Recommendation, the figure I included and related values were off by a factor of approximately 12 related to the conversion by Mr. Wills of an annual value as provided on a monthly basis. Mr. Wills spreadsheet provided in response to DR No. 0001.2 includes an apparent formula error that implies rates continue to increase between rate cases. I have corrected this error in the discussions that follow.

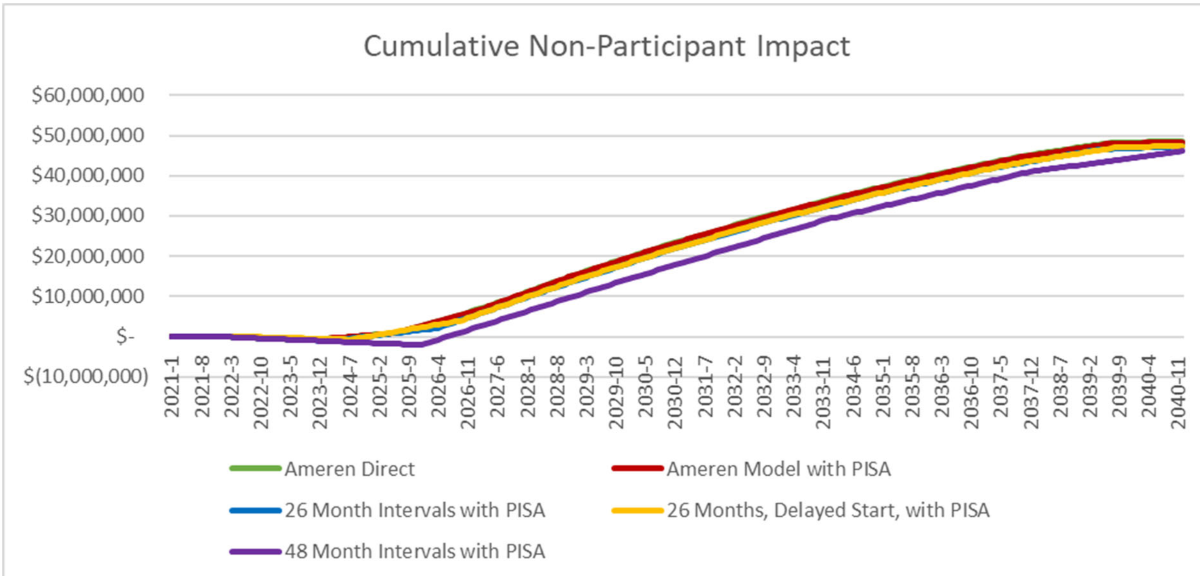
Q. What impact does Ameren Missouri forecast this program will have on its ratepayers?

A. According to Mr. Wills' direct testimony at page 12, nonparticipating ratepayers will "benefit" $48.7 million over 20 years, pursuant to the assumptions resulting from Mr. Schneider's 20-year lifecycle analysis. As this analysis assumes no new customers will elect to participate after the 5th program year, and all customers will cease to participate by the 20th program year, it is facially an unreasonable projection of prolonged non-participating ratepayer impact.

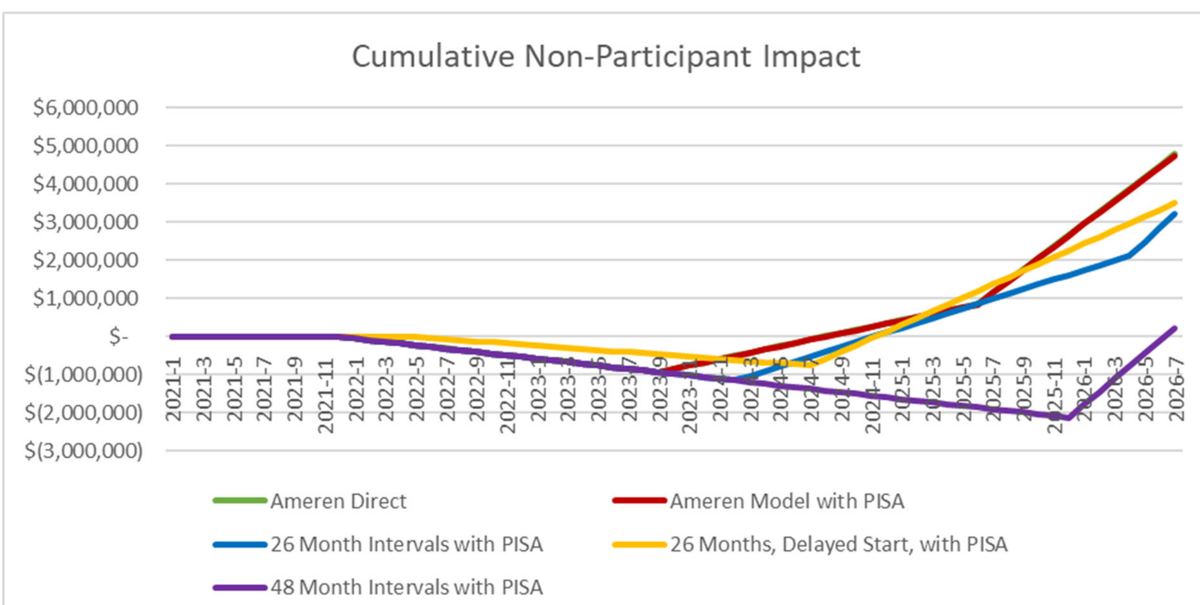
Q. Have you prepared alternate rate case timing scenarios relying on Mr. Schneider's results and Mr. Wills' modeling?

A. Yes. I modified Mr. Wills' spreadsheet to reflect rate case timing assumptions (1) with the same start date as modeled by Ameren Missouri, but with 26 month intervals between cases,[7] (2) 26 month intervals between rate cases, with the initial rate case sliding 5 months, and (3) with the same start date as modeled by Ameren Missouri, but with 48 month intervals between cases, consistent with timing requirements of the Fuel Adjustment Clause. The cumulative ratepayer impact of these scenarios are compared in the figure below to Ameren Missouri's direct-filed modeled results, and the modeled results provided in response to Staff DR No. 0001.2, which incorporates the rate impact of PISA accounting treatment.

[7] This interval is consistent with removal of the TCJA rate case from Mr. Wills' timing analysis.

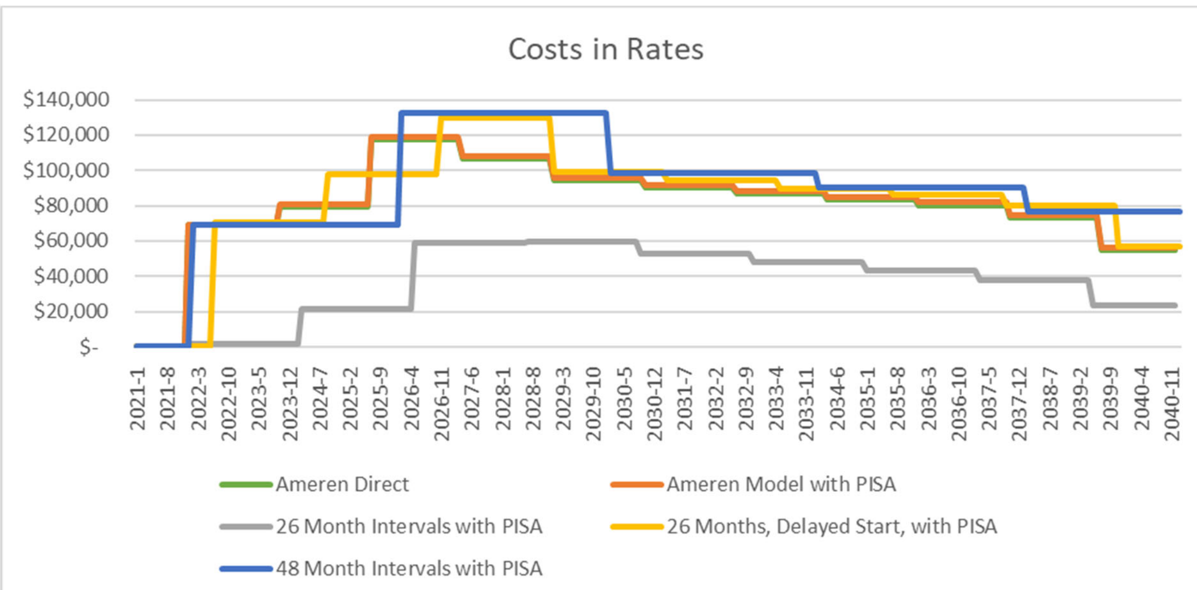


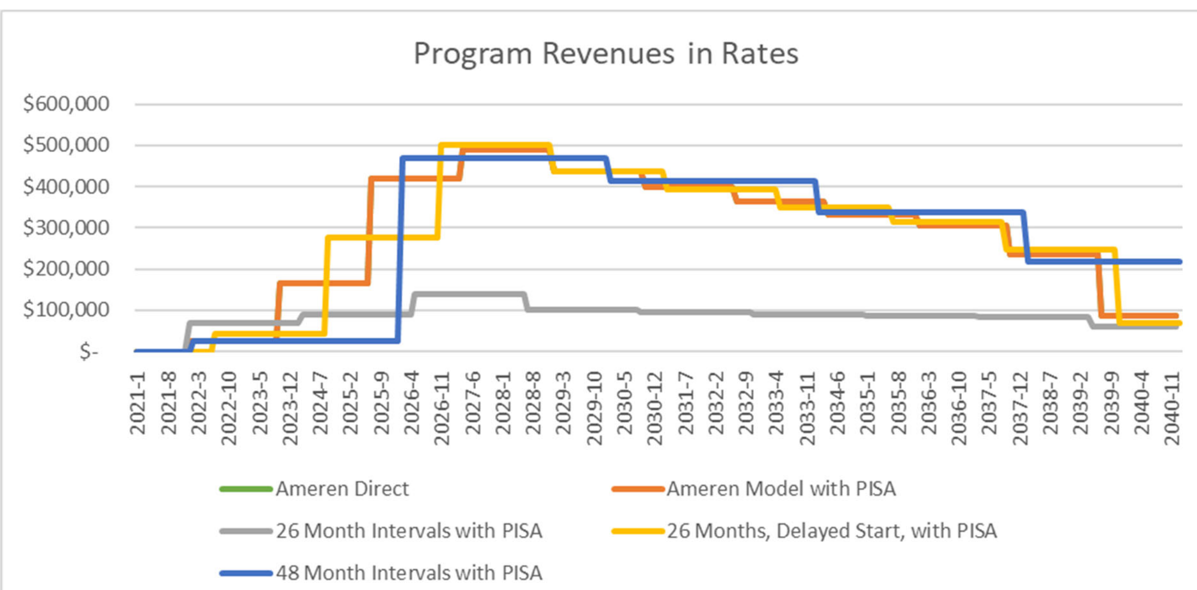
A detail of the initial program years is provided below, indicating that customers will experience a net detriment pursuant to the program – under Ameren Missouri's life cycle assumptions – until sometime between the second half of 2024 and the second half of 2026.

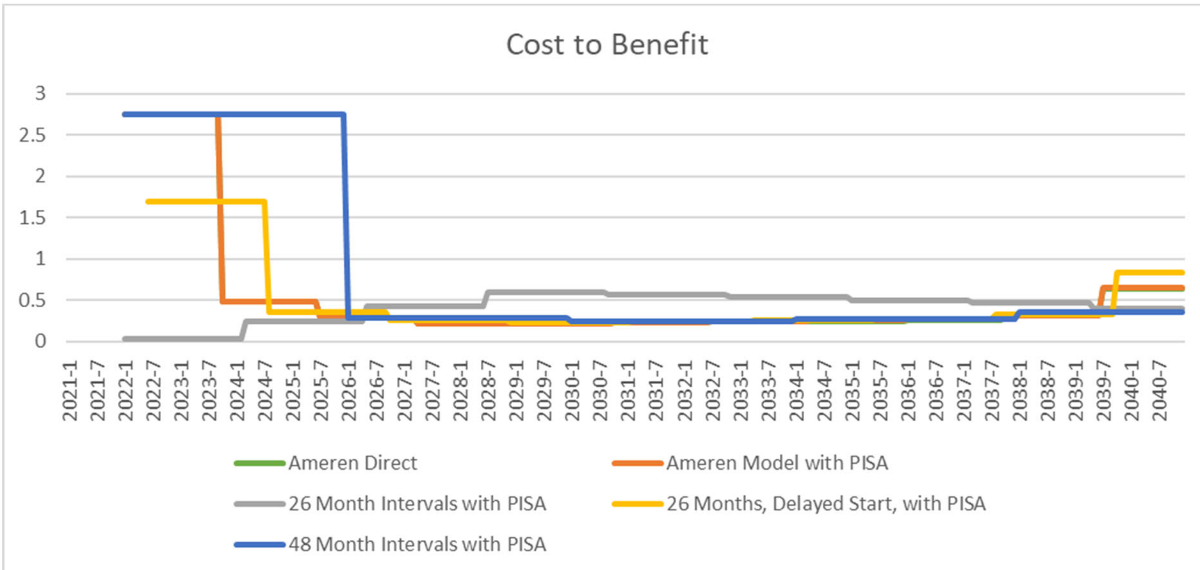


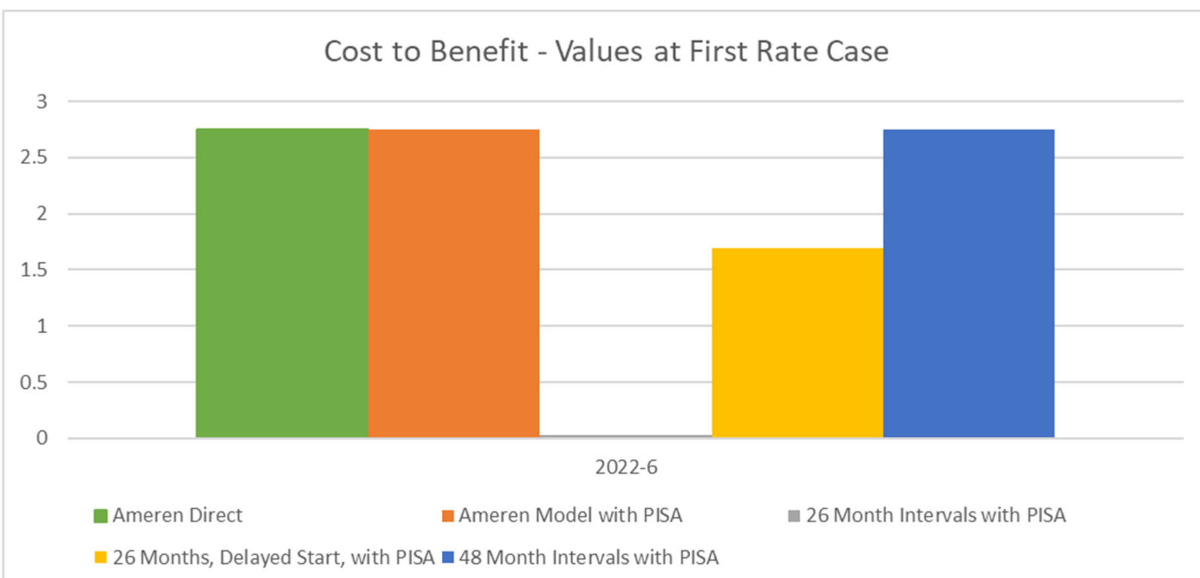
Q. Are program costs and program benefits smoothly offset over the 20-year life cycle Mr. Wills models for non-participant rate impact?

A. No. There are significant up front program costs as devices are installed. The projected revenues accrue over the life of the device to offset these upfront costs. The figures below illustrate that upfront costs are significant, while upfront revenues fail to cover those costs.









These graphs indicate that estimated initial costs are relatively high, and estimated initial revenues are relatively low, across virtually all scenarios.

Q. Are these estimates reliable estimates of the program's likely impact on non-participating ratepayers?

A. No. However the costs will be known much earlier in the program's lifetime and will be long of duration regardless of any parties' actions, and the revenues will continue to be variable over the programs lifetime due to customer participation levels. Further, these modeled costs do not appear to reflect a full allocation of costs as integrated into the cost of providing Ameren Missouri's retail rate service. The introduction of fully-allocated costs outside of a rate case is complicated, in that those values are not knowable at this time in the absence of a fully developed revenue requirement and class cost of service study.[8] In that Ameren Missouri's retail rates are currently designed to cover its cost of service, it is problematic to include those costs in the proposed Surge Protection rate design, as it would result in short-term double recovery of those costs. However, purporting to set rates that will remain in effect for 15+ years that fail to reflect fully-allocated costs is also not reasonable and is discriminatory to the extent that participants bear a more or less reasonable allocation of revenue requirement responsibility.

Q. What nonparticipant rate impact would exist under Staff's alternative cost-based proposal, described above?

A. Essentially none. During a rate case it would be appropriate to apportion a reasonable level of overhead expenses to this program, such as the fully allocated cost of program personnel, a revenue-based share of the PSC assessment, and an allocation of generally unassignable costs of doing business. The impacts of regulatory lag associated with only the expense portion of program costs are lower than the impacts of regulatory lag associated with including the capital costs of the program in a levelized cost rate.

[8] Based on Ameren Missouri's Class Cost of Service (CCOS) study in prior rate cases, it appears that potentially Company Allocation Factors 7, 15, 19, 29, 30, 32, 35, 36, 37, 38, and potentially others, would be used to allocate costs to program participants.

Abuse of monopoly powers

Q. Is Ameren Missouri uniquely situated to offer surge protection devices and insurance to entities within its service territory?

A. No. As discussed in the testimony of Amanda Coffer, surge protection devices are widely available through unregulated markets including a variety of retail stores. Ameren Missouri has not demonstrated that the proposed program falls under the Commission's jurisdiction.

Q. Ignoring this jurisdictional problem, what metric does Ameren Missouri offer to support Commission authorization of this program?

A. Ameren Missouri represents that the program is cost effective, and thus should be authorized.

Q. If a program is cost effective, should it be authorized?

A. No. Ameren Missouri could open a door-to-door kitten rental service that may prove to be cost effective. Ameren Missouri could make a case that its customer-relations team has determined that residents isolated due to COVID would benefit immensely from petting a kitten for half an hour and pay for that opportunity. Ameren Missouri could provide a study that shows the cost of using its existing utility vehicle fleet and employees to bring kittens to be petted on a prearranged schedule, and that includes estimates of the net cost of rehoming when the pandemic ends or the kittens decline in cuteness, whichever occurs first. While such costs and revenues could be projected to balance in favor of providing a benefit to non-participating ratepayers; that does not in itself justify the use of ratepayer funds to establish and operate the program. While less cuddly, this proposal is no more an appropriate a use of captive ratepayer funds than a silly kitten program.

CONCLUSION

Q. What is a summary of your recommendation in this matter?

A. Staff recommends this tariff be rejected in that it has not been reasonably shown to be cost effective, and the provision of Surge Protection devices and warrantees is beyond the Commission's jurisdiction. In the event the Commission does authorize the program, Staff recommends the program and tariff incorporate the prepayment alternative described above, along with record keeping requirements and vigorous pre- and post-enrollment customer education, as outlined in the testimony of Staff witness Amanda Coffer.

Q. Does this conclude your testimony?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of	)	
Union Electric Company d/b/a	)	Case No. ET-2021-0082
Ameren Missouri for Approval of	)	
its Surge Protection Program	)	

AFFIDAVIT OF SARAH L.K. LANGE

STATE OF MISSOURI	)	
	)	ss.
COUNTY OF COLE	)	

COME NOW SARAH L.K. LANGE and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Rebuttal Testimony of Sarah L.K. Lange*; and that the same is true and correct according to her best knowledge and belief, under penalty of perjury.

Further the Affiants sayeth not.

/s/ Sarah L.K. Lange
SARAH L.K. LANGE

<u>Sarah L.K. Lange</u>

I received my J.D. from the University of Missouri, Columbia, in 2007, and am licensed to practice law in the State of Missouri. I received my B.S. in Historic Preservation from Southeast Missouri State University, and took courses in architecture and literature at Drury University. Since beginning my employment with the MoPSC I have taken courses in economics through Columbia College and courses in energy transmission through Bismarck State College, and have attended various trainings and seminars, indicated below.

I began my employment with the Commission in May 2006 as an intern in what was then known as the General Counsel's Office. I was hired as a Legal Counsel in September 2007, and was promoted to Associate Counsel in 2009, and Senior Counsel in 2011. During that time my duties consisted of leading major rate case litigation and settlement, and presenting Staff's position to the Commission, and providing legal advice and assistance primarily in the areas of depreciation, cost of service, class cost of service, rate design, tariff issues, resource planning, accounting authority orders, construction audits, rulemakings and workshops, fuel adjustment clauses, document management and retention, and customer complaints.

In July 2013 I was hired as a Regulatory Economist III in what is now known as the Tariff /Rate Design Department. In this position my duties include providing analysis and recommendations in the areas of RTO and ISO transmission, rate design, class cost of service, tariff compliance and design, and regulatory adjustment mechanisms and tariff design. I also continue to provide legal advice and assistance regarding generating station and environmental control construction audits and electric utility regulatory depreciation. I have also participated before the Commission under the name Sarah L. Kliethermes.

Presentations

Midwest Energy Policy Series – Impact of ToU Rates on Energy Efficiency (August 14, 2020)

Billing Determinants Lunch and Learn (March 27, 2019)

Support for Low Income and Income Eligible Customers, Cost-Reflective Tariff Training, in cooperation with U.S.A.I.D. and NARUC, Addis Ababa, Ethiopia (February 23-26, 2016)

Fundamentals of Ratemaking at the MoPSC (October 8, 2014)

Ratemaking Basics (Sept. 14, 2012)

Participant in Missouri's Comprehensive Statewide Energy Plan working group on Energy Pricing and Rate Setting Processes.

Relevant Trainings and Seminars

Regional Training on Integrated Distribution System Planning for Midwest/MISO Region (October 13-15, 2020)

"Fundamentals of Utility Law" Scott Hempling lecture series (January – April, 2019)

Today's U.S. Electric Power Industry, the Smart Grid, ISO Markets & Wholesale Power Transactions (July 29-30, 2014)

MISO Markets & Settlements training for OMS and ERSC Commissioners & Staff (January 27–28, 2014)

Validating Settlement Charges in New SPP Integrated Marketplace (July 22, 2013)

PSC Transmission Training (May 14 – 16, 2013)

Grid School (March 4–7, 2013)

Specialized Technical Training - Electric Transmission (April 18–19, 2012)

The New Energy Markets: Technologies, Differentials and Dependencies (June 16, 2011)

Mid-American Regulatory Conference Annual Meeting (June 5–8, 2011)

Renewable Energy Finance Forum (Sept. 29–Oct 3, 2010)

Utility Basics (Oct. 14–19, 2007)

Testimony and Staff Memoranda

Company	Case No.
Union Electric Company d/b/a Ameren Missouri In the Matter of the Request of Union Electric Company d/b/a Ameren for Approval of its Surge Protection Program	ET-2021-0082
Union Electric Company d/b/a Ameren Missouri In the Matter of the Request of Union Electric Company d/b/a Ameren Missouri to Implement the Delivery Charge Adjustment for the 1st Accumulation Period beginning September 1, 2019 and ending August 31, 2020	GT-2021-0055
The Empire District Electric Company In the Matter of The Empire District Electric Company's Tariffs Approval of a Transportation Electrification Portfolio for Electric Customers in its Missouri Service Area	ET-2020-0390

Company	Case No.
KCP&L Greater Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company Request for Authority to Implement Rate Adjustments Required by 4 CSR 240-20.090(8) And the Company's Approved Fuel and Purchased Power Cost Recovery Mechanism	ER-2019-0413
The Empire District Electric Company In the Matter of The Empire District Electric Company's Tariffs to Increase Its Revenues for Electric Service	ER-2019-0374
Union Electric Company d/b/a Ameren Missouri In the Matter of of Union Electric Company d/b/a Ameren Missouri's Tariffs to Decrease Its Revenues for Electric Service	ER-2019-0335
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri Revised Tariff Sheets	ET-2019-0149
Union Electric Company d/b/a Ameren Missouri In the Matter of of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase Its Revenues for Natural Gas Service	GR-2019-0077
The Empire District Electric Company In the Matter of The Empire District Electric Company's Revised Economic Development Rider Tariff Sheets	ET-2019-0029
The Empire District Electric Company In the Matter of a Proceeding Under Section 393.137 (SB 564) to Adjust the Electric Rates of The Empire District Electric Company	ER-2018-0366
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Construct a Wind Generation Facility	EA-2018-0202
Kansas City Power & Light Company KCP&L Greater Missouri Operations Company In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2018-0145 ER-2018-0146
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of Efficient Electrification Program	ET-2018-0132

Company	**Case No.**
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of 2017 Green Tariff	ET-2018-0063
Laclede Gas Company Laclede Gas Company d/b/a Missouri Gas Energy In the Matter of Laclede Gas Company's Request to Increase Its Revenue for Gas Service, In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase Its Revenue for Gas Service.	GR-2017-0215 GR-2017-0216
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Demand Side Investment Rider Rate Adjustment And True-Up Required by 4 CSR 240-3.163(8)	ER-2017-0316
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Demand Side Investment Rider Rate Adjustment And True-Up Required by 4 CSR 240-3.163(8)	ER-2017-0167
KCP&L Great Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company's Annual RESRAM Tariff Filing	ET-2017-0097
Grain Belt Express Clean Line, LLC In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing It to Construct, Own, Operate, Control, Manage, and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood - Montgomery 345 kV Transmission Line	EA-2016-0358
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Demand Side Investment Rider Rate Adjustment And True-Up Required by 4 CSR 240-3.163(8)	ER-2016-0325
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Request for Authority to Implement A General Rate Increase for Electric Service	ER-2016-0285
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Offer a Pilot Subscriber Solar Program and File Associated Tariff	EA-2016-0207

Company	**Case No.**
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariff to Increase Its Revenues for Electric Service	ER-2016-0179
KCP&L Great Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2016-0156
Empire District Electric Company In the Matter of The Empire District Electric Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2016-0023
Ameren Transmission Company of Illinois In the Matter of the Application of Ameren Transmission Company of Illinois for Other Relief or, in the Alternative, a Certificate of Public Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage a 345,000-volt Electric Transmission Line from Palmyra, Missouri to the Iowa Border and an Associated Substation Near Kirksville, Missouri	EA-2015-0146
Ameren Transmission Company of Illinois In the Matter of the Application of Ameren Transmission Company of Illinois for Other Relief or, in the Alternative, a Certificate of Public Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage a 345,000-volt Electric Transmission Line in Marion County, Missouri and an Associated Switching Station Near Palmyra, Missouri	EA-2015-0145
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's 2nd Filing to Implement Regulatory Changes in Furtherance of Energy Efficiency as Allowed by MEEIA	EO-2015-0055
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2014-0370
Empire District Electric Company In the Matter of The Empire District Electric Company for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Company's Missouri Service Area	ER-2014-0351
Union Electric Company d/b/a Ameren Missouri City of O'Fallon, Missouri, and City of Ballwin, Missouri, Complainants v. Union Electric Company d/b/a Ameren Missouri, Respondent	EC-2014-0316

Company	Case No.
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariff to Increase Its Revenues for Electric Service	ER-2014-0258
Union Electric Company d/b/a Ameren Missouri Noranda Aluminum, Inc., et al., Complainants, v. Union Electric Company d/b/a Ameren Missouri, Respondent	EC-2014-0224
Grain Belt Express Clean Line, LLC In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing It to Construct, Own, Operate, Control, Manage, and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood - Montgomery 345 kV Transmission Line	EA-2014-0207
KCP&L Great Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company's Application for Authority to Establish a Renewable Energy Standard Rate Adjustment Mechanism	EO-2014-0151
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Filing for Approval of Demand-Side Programs and for Authority to Establish A Demand-Side Programs Investment Mechanism	EO-2014-0095
Veolia Energy Kansas City, Inc. In the Matter of Veolia Energy Kansas City, Inc. for Authority to File Tariffs to Increase Rates	HR-2014-0066