

Exhibit No. 159

Staff – Exhibit 159
Testimony of Sarah L.K. Lange
Surrebuttal
File No. ER-2024-0261

Exhibit No.:
Issue(s): *Class Cost of Service,
Rate Design,
EDR Revenues*
Witness: *Sarah L.K. Lange*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Direct Testimony*
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MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

TARIFF/RATE DESIGN DEPARTMENT

SURREBUTTAL TESTIMONY

OF

SARAH L.K. LANGE

**THE EMPIRE DISTRICT ELECTRIC COMPANY,
d/b/a Liberty**

CASE NO. ER-2024-0261

*Jefferson City, Missouri
September 2025*

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SARAH L.K. LANGE**

**THE EMPIRE DISTRICT ELECTRIC COMPANY,
d/b/a Liberty
CASE NO. ER-2024-0261**

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1 **SURREBUTTAL TESTIMONY OF**

2 **SARAH L.K. LANGE**

3 **THE EMPIRE DISTRICT ELECTRIC COMPANY,**
4 **d/b/a Liberty**

5 **CASE NO. ER-2024-0261**

6 Q. Are you the same Sarah L.K. Lange who filed Class Cost of Service (“CCOS”)
7 and Rate Design testimony and Rebuttal testimony in this matter?

8 A. Yes.

9 Q. What is the purpose of your surrebuttal testimony?

10 A. I will respond to:

11 (1) Empire witness Charlotte Emery revenue discounts provided under
12 the economic development riders (“EDR”);

13 (2) Empire witness Tim Lyons concerning allocation of substations, the
14 residential customer charge calculation, classification adjustments,
15 and rate modernization; and

16 (3) Midwest Energy Consumers Group (“MECG”) witness
17 Kavita Maini, concerning production allocation and rate modernization.

18 **Treatment of EDR Discounts**

19 Q. In her Rebuttal Testimony at pages 23 and 24, Ms. Emery states that
20 Staff’s recommended rates will not provide Empire with revenue associated with economic
21 development discounts that Empire provides to certain customers. Is this testimony
22 factually accurate?

23 A. No. Staff explicitly addresses recovery of these discounts, and a “gross up” of
24 these discounts, from all customer classes.

25 Q. Does Staff recommend recognizing the ongoing annual level of statutory
26 economic development discounts in this case, and increasing all customers rates to make up for
27 the value of those discounts?

1 A. Yes. I address this adjustment in the recommended increases discussed in my
2 Rate Design Direct Testimony.¹ I issued Staff Data Request 470 to Ms. Emery on
3 August 21, 2025, which asked:

4 The rebuttal testimony of Charlotte Emery at pages 24 and 25 includes
5 the following exchanges, “Q. Please explain Staff’s adjustment for EDR
6 revenues. A. Staff proposed an adjustment to remove EDR discounts
7 from recorded revenues. The balance removed by Staff represents the
8 Company’s Schedule SBEDR tariff discounts. Pursuant to
9 Senate Bill 564, “any reduced revenues arising from the discounted rate
10 shall be borne by all of the electrical corporations’ customer classes.”
11 Based on this legislation, the Company has included these discounts in a
12 regulatory asset as previously described in my testimony. This regulatory
13 treatment was established to isolate the financial impact of SBEDR
14 related discounts from operating revenues, thereby preserving revenue
15 neutrality and enabling recovery through future rate proceedings.
16 Q. Does the Company agree with Staff’s proposed treatment of EDR
17 discounts? A. No. The Company does not agree with Staff’s adjustment.
18 Staff’s removal of EDR discounts from revenue is unwarranted and
19 inconsistent with the Company’s regulatory account treatment.
20 Instead, the SBEDR discount amount – recorded in a regulatory asset –
21 should be included in rate base consistent with the Senate Bill 564
22 legislation.” (a) At the time this testimony was filed, was Ms. Emery
23 aware of the treatment of EDR discounts and revenues described in the
24 rate design direct testimony of Sarah Lange at page 1, the reallocation of
25 the current level of EDR shown in the table on page 70, and the EDR
26 factor up shown in the table on page 74? (b) Does Ms. Emery agree that
27 Staff’s recommendation includes increasing the revenue to be collected
28 through Empire’s rates for current EDR discounts of \$1,743,348 and a
29 “gross up” of \$473,494?

30 The response provided September 8, 2025, was as follows:

31 (a) Ms. Emery was generally aware of the items being proposed in the
32 case; however, her expertise and primary focus in preparing rebuttal
33 testimony was on the revenue requirement treatment, not rate design.
34 As such, she was not specifically aware of the treatment of the discounts
35 as described in Staff’s rate design testimony.

¹ The treatment of EDR discounts and revenues described in my Rate Design Direct Testimony at page 1, the reallocation of the current level of EDR was shown in the table on page 70, and the EDR factor up was shown in the table on page 74. Staff’s recommendation includes increasing the revenue to be collected through Empire’s rates for current EDR discounts of \$1,743,348 and a “gross up” of \$473,494.

1 (b) Ms. Emery agrees that the discount provided under Senate Bill 564
2 should be reflected as an increase in revenues collected through Empire's
3 rates. Ms. Emery is still in the process of reviewing the Company's
4 proposed treatment to determine whether any adjustments may be
5 necessary.

6 **Response to Mr. Lyons**

7 **Distribution Substation Allocation**

8 Q. Does Mr. Lyons include factually incorrect statements concerning Staff's
9 allocation approaches in this case?

10 A. Yes. Mr. Lyons states at page 17 of his Rebuttal Testimony that Staff allocated
11 distribution substations using the Production 2 allocator. This is not accurate. I suspected that
12 Mr. Lyons may have confused Staff's treatment of distribution substations with Staff's
13 treatment of windfarm infrastructure that is recorded to intangible plant accounts and to
14 transmission accounts. Staff did subfunctionalize those assets as related to production facilities
15 with low or no variable operational expenses, "Production 2."

16 Q. Did Staff follow-up with Empire through discovery?

17 A. Yes. I issued Staff DR 472 on August 21, 2025, which asked:

18 (a) Please confirm that Empire includes in its intangible plant accounts a
19 subaccount associated with the Neosho Ridge wind farm with a Missouri
20 Jurisdictional balance of approximately \$18 million, in subaccount
21 303.100. (b) Please confirm that Empire includes in its intangible plant
22 accounts a subaccount associated with North Fork Ridge wind farm with
23 a Missouri Jurisdictional balance of approximately \$10 million, in
24 subaccount 303.200. (c) Please confirm that Empire includes in its
25 intangible plant accounts a subaccount associated with King's Point
26 wind farm with a Missouri Jurisdictional balance of approximately \$10
27 million, in subaccount 303.300. (d) Please confirm that Empire includes
28 in its transmission plant accounts (353, 355, 356) subaccounts associated
29 with the Neosho Ridge wind farm with a Missouri Jurisdictional balance
30 of approximately \$16.8 million. (e) Please confirm that Empire includes
31 in its transmission plant accounts (353, 355, 356) subaccounts associated
32 with North Fork Ridge wind farm with a Missouri Jurisdictional balance
33 of approximately \$8.8 million. (f) Please confirm that Empire includes

1 in its transmission plant accounts (353, 355, 356) subaccounts associated
2 with King’s Point wind farm with a Missouri Jurisdictional balance of
3 approximately \$15.2 million. (g) Please confirm that Empire includes
4 subaccounts in its transmission plant accounts associated with Iatan
5 generation station, in the amount of approximately half a million dollars,
6 Missouri Jurisdictional.

7 Empire’s September 2, 2025, response was as follows:

8 Please see attached workbook “RB ADJ 1 – Plant Additions Adjustment
9 – Update.xlsx” for plant balances as of September 30, 2024.

10 a) Balance confirmed as of September 30, 2024, with a balance of
11 \$18,168,632 in the 303 account for Neosho Ridge as found in cell X22
12 of the attachment listed above.

13 b) Balance confirmed as of September 30, 2024, with a balance of
14 \$10,428,412 in the 303 account for North Fork Ridge as found in cell
15 X27 of the attachment listed above.

16 c) Balance confirmed as of September 30, 2024, with a balance of
17 \$10,287,693 in the 303 account for Kings Point as found in cell X32 of
18 the attachment listed above.

19 d) Balance confirmed as of September 30, 2024, with a balance of
20 \$16,746,510. This balance comes from the inclusion of accounts 353,
21 354, 355, and 356 for Neosho Ridge as found in cell X247 of the
22 attachment listed above.

23 e) Balance confirmed as of September 30, 2024, with a balance of
24 \$8,808,164. This balance comes from the inclusion of accounts 353, 355,
25 and 356 for North Fork Ridge as found in cell X255 of the attachment
26 listed above.

27 f) Balance confirmed as of September 30, 2024, with a balance of
28 \$15,097,860. This balance comes from the inclusion of accounts 353,
29 354, 355, and 356 for Kings Point as found in cell X263 of the attachment
30 listed above.

31 g) Balance confirmed as of September 30, 2024, with a balance of
32 \$419,599 found in accounts 352 and 353 for Iatan as found in cells X232
33 and X234 of the attachment listed above.

34 [attachment omitted]

1 Staff DR 471, issued August 21, 2025, requested as follows:

2 The rebuttal testimony of Timothy Lyons includes the following
3 exchange, “Q. Does the Company agree with Staff witness Lange’s
4 proposed allocation of substations related to wind production based on
5 the Production 2 allocator? A. No. Distribution substations are designed
6 to meet the demand requirements of customers served from the
7 substations; consequently, the Company believes substation plant
8 (Account 362) should be based on the 1-NCP allocator. The NARUC
9 Manual states in pertinent part: Distribution facilities, from a design and
10 operational perspective, are installed primarily to meet localized area
11 loads. Distribution substations are design to meet the maximum load
12 from the distribution feeders emanating from the substation...
13 Consequently, customer-class 18 noncoincident demands (NCPs) and
14 individual customer maximum demands are the load characteristics that
15 are normally used to allocate the demand component of distribution
16 facilities.”

17 (a) Please identify by page and line number and or by workpaper tab and
18 cell reference the basis for Mr. Lyons’s belief that Staff allocated any
19 distribution substations using the Production 2 allocator.

20 (b) Please confirm that Mr. Lyons’s testimony on this subject is in error,
21 and that Mr. Lyons now understands that Staff allocated the transmission
22 substations associated with windfarms as Production 2, but did not
23 classify or allocate any distribution substations as Production 2. If
24 Mr. Lyons cannot confirm this error in his testimony, please explain.

25 (c) Please confirm that the distribution poles account of the Continuing
26 Property Record provided by Empire to Staff includes \$12,000 of
27 infrastructure with asset location identified as “MO-PRODUCTION-
28 STATE LINE-SLCC-EDE” and \$78,966 of infrastructure with asset
29 location identified as “MO-PRODUCTION-STATE LINE-COMMON-
30 EDE,” as well as approximately 48 assets identified as asset location as
31 “MO-SUBSTATION-###-EDE,” with a notation of “RECLASS-
32 RESEARCH REQUIRE.” Please further confirm that similar entries are
33 found in the distribution Overhead Conductor and Device, Conduit,
34 Underground Conductor & Device, and transformers accounts.

35 (d) Please confirm that the asset locations identified in Empire’s
36 Continuing Property Record (CPR) within the distribution accounts are
37 “Production Type 1” locations, for example, State Line and Riverton.

38 (e) Please confirm that Staff’s CCOS studies allocated the amounts
39 identified by Empire in its CPR as associated with distribution
40 substations consistent with Staff’s allocation of distribution substations.

(f) Please confirm that Staff’s CCOS studies allocated the amounts identified by Empire in its CPR as associated with production facilities consistent with Staff’s allocation of Production Type 1.

Empire’s response, received September 9, 2025, was as follows:

(a) The referenced testimony was referring to pg. 67, which states “Empire has recorded substation facilities associated with wind generation facilities within its substation accounts. Staff functionalized these subaccounts as Production 2 and has allocated them accordingly.” We agree the reference to distribution substations was an oversight.

(b) Please refer to (a). (c) The asset locations identified as “MO-PRODUCTION-STATE LINE-SLCC-EDE” and “MO-PRODUCTIONSTATE LINE-COMMON-EDE” were initially misclassified as Distribution Plant and are related to Production Plant. These misclassifications would have minimal impacts as these represent a small portion of distribution plant. Specifically, the production-related line items misclassified in Accounts 364-368 amount to \$240,314 (or 0.03% of total Accounts 364-368), as presented in table below.

Distribution Plant Account	Total Plant Amount (\$)	Misclassified as Production Plant (\$)	%
Account 364 Poles, Towers & Fixtures	\$ 277,794,551	\$ 91,362	0.03%
Account 365 Overhead Conductors & Devices	\$ 244,556,254	\$ 29,903	0.01%
Account 366 Underground Conduit	\$ 87,386,376	\$ 56,997	0.07%
Account 367 Underground Conductors & Device	\$ 103,880,712	\$ 46,739	0.04%
Account 368 Line Transformers	\$ 174,527,411	\$ 15,313	0.01%
Total Accounts 364-368	\$ 888,145,303	\$ 240,314	0.03%

Similarly, the asset locations identified as “MO-SUBSTATION-###-EDE” were initially misclassified as substation, but include assets that are either lines, substation, or both (in a few cases). These misclassifications would have minimal impacts as these represent a small portion of distribution plant. Specifically, the substation-related line items misclassified in Accounts 364-368 amount to \$434,110 (or 0.05% of total Accounts 364-368), as presented in table below.

Distribution Plant Account	Total Plant Amount (\$)	Misclassified as Substation Plant (\$)	%
Account 364 Poles, Towers & Fixtures	\$ 277,794,551	\$ 23,348	0.01%
Account 365 Overhead Conductors & Devices	\$ 244,556,254	\$ (11,832)	0.00%
Account 366 Underground Conduit	\$ 87,386,376	\$ (3,226)	0.00%
Account 367 Underground Conductors & Device	\$ 103,880,712	\$ 326,304	0.31%
Account 368 Line Transformers	\$ 174,527,411	\$ 99,516	0.06%
Total Accounts 364-368	\$ 888,145,303	\$ 434,110	0.05%

(d) Please refer to response (c).

(e) Please refer to response (c).

1 (f) Please refer to response (c).

2 **Residential Customer Charge**

3 Q. Could you clarify Staff's position concerning the residential customer charge
4 in this case?

5 A. Yes. Staff determined that the current residential customer charge is slightly too
6 high, using the basic customer calculation. Staff recommends that if its revenue requirement
7 allocation method and recommended revenue requirement are ordered in this case that the
8 residential customer charge remain the same. Staff determined that the residential customer
9 charge amount calculated by Empire is too high because, among other things, it includes
10 Federal Energy Regulatory Commission ("FERC") accounts 364 through 368.² However, if
11 the Commission increases residential rates in this case by an amount greater than that
12 recommended in Staff's direct, Staff does recommend that the residential customer charge be
13 increased by the same percentage as other residential rate elements; not because it is cost
14 justified (it is not), but because that will mitigate customer impacts so that all residential
15 customers experience about the same increase as a percentage. If the customer charge is not
16 increased in a case with a very substantial rate increase, then the customers who experience the
17 largest bill increase in dollars will also experience the largest bill increase as a percentage.

18 Q. Could you explain the difference between classification and customer charge
19 calculation as it relates to this case?

20 A. Yes. Consistent with Commission orders going back to at least ER-2014-0370,
21 Staff did allocate portions of FERC accounts 364 through 368 to the CCOS classes based on
22 the numbers of customers in each class. However, because investment in these accounts

² FERC account descriptions for each are 364 Poles, Towers, & Fixtures, 365 Overhead Conductors, 366 Underground Conductors, 367 Underground Conduit, and 368 Line Transformers.

1 (even the portion allocated on the number of customers) will not consistently vary with the
2 addition of any one customer, it is not appropriate to reflect in the residential customer charge
3 and Staff did not include those accounts in its customer charge calculation.³ Essentially, just
4 because a portion of the accounts should be allocated to the classes in a manner to recognize
5 the influence of geographic diversity and customer numbers on the size and cost of the
6 distribution network, does not mean it is reasonable to cause Empire's recovery of those costs
7 to increase on a one-to-one basis for every customer added.

8 Q. On page 9 of his Rebuttal Testimony, Mr. Lyons alleges a general relationship
9 between the number of customers and the number of poles. Does that mean that poles should
10 be included in the residential customer charge?

11 A. No. Specific rebuttal to Mr. Lyons' analysis is provided by Staff expert,
12 Dr. Poudel, in his Surrebuttal Testimony. Additional factors undermine the reasonableness of
13 the time period studied by Mr. Lyons. Mr. Lyons' selected time period is very short considering
14 the long-lived distribution assets it concerns. It also includes the essential rebuilding and
15 improvement of the Empire distribution system that occurred after the 2012 Joplin tornado,
16 and the distribution system build-out incented by Plant in Service Accounting. Any poles added
17 to connect radial circuits or improve grid resiliency are irrelevant to the relationship of new
18 poles and new customers, and the inclusion of those poles significantly impairs any possible
19 usefulness of Mr. Lyons' review.

³ The terminology for this customer charge calculation is called the basic customer method or approach. However, that same terminology can also be used for whether or not to allocate some portion of those FERC accounts on the basis of customer counts during the classification stage of a CCOS study.

Distribution Classification – Adjustments to Original Cost of Assets

Q. Mr. Lyons states his concern, in his Rebuttal Testimony at page 11, that Staff failed to use Handy-Whitman. What is Staff's response?

A. Staff did not use the Handy-Whitman cost index to modify the value of assets installed over the last century as was done by Empire. There is no reasonable reason to classify Empire's embedded cost of distribution assets made over a century as though those assets were installed in the current year. Doing so artificially and transparently inflates the allocation to classes with many customers – such as residential – and when combined with Mr. Lyons' decision to include network distribution accounts in the customer charge calculation against Commission practice, it artificially inflates the residential customer charge.

Q. Does Empire have a commercial interest in shifting costs to the residential class and to the residential customer charge?

A. Yes. This is a growth area for the company.

Q. Is the reasonableness of using Handy-Whitman for distribution classification undermined by another Empire witness?

A. Yes. In his Rebuttal Testimony at page 19, Tim Wilson testifies "While capital has increased since 2016, so have material costs and infrastructure needs. Our system continues to age, and we are investing in replacements and upgrades to maintain safety, reliability, and resiliency. For example, distribution transformer prices have risen on average over 142% in the past decade due to global supply chain constraints and rising commodity prices – an industry wide trend. In some instances, certain transformers have risen over 342%, depending on type and size." Using Mr. Lyons' logic and method, if there are 5,000 transformers installed from 1920 - 2025, and 10 of them have been replaced in the last few years,

1 the customer-allocated transformer expense would increase by 142-342%. That is simply not
2 reasonable, and not reflective of the embedded cost which is being allocated.

3 **Demand Charges and Rate Modernization**

4 Q. Mr. Lyons testifies at page 20 of his Rebuttal Testimony that he will look at
5 certain Demand Charges in the future. What was Empire's commitment on this issue
6 in its last case?

7 A. In ER-2021-0312, Empire and other parties entered a Non-Unanimous Partial
8 Stipulation and Agreement, which was filed on January 28, 2022. That stipulation included at
9 page 8, that "Empire commits to propose time-variant demand charges in the next rate case,
10 with supporting billing determinants. Empire commits to retain data sufficient for other parties
11 to recommend variations to Empire's proposal, such as shifting the hours to which the demand
12 charge is applicable."

13 Q. Did Empire meaningfully respond to your rate modernization
14 recommendations?

15 A. No. For example, Mr. Lyons at page 20 of his Rebuttal Testimony states that
16 moving to coincident peak (CP) demand billing requires careful review and analysis, yet he did
17 not respond to the review and analysis that I presented in direct testimony. However, Staff
18 agrees that it has no confidence in the ability of Empire to make changes to its billing system
19 at this time. Therefore, the Commission should order Empire to file timelines on the
20 recommended rate modernization efforts detailed at pages 54 – 56 of my direct testimony no
21 later than six months after the tariffs implementing this case take effect.

1 **Response to Ms. Maini**

2 Q. Ms. Maini alleges, at pages 3 and 5 of her Rebuttal Testimony, that there is
3 insufficient justification to separately allocate power plants with no or low variable operating
4 costs from power plants with medium to high variable operating costs. Do you agree?

5 A. No. Fundamental fairness and reasonable cost allocation dictate that it is not
6 reasonable to bill residential and small commercial customers for the cost of owning and
7 operating windfarms, while offsetting the cost of providing service to large customers with the
8 revenue from the windfarms. Historically, renewable generation was not a large component of
9 any Missouri utility's generation fleet. Now it is.

10 Q. Ms. Maini alleges, at page 4 of her Rebuttal Testimony, that Staff's production
11 allocation approach in this case does not fully value the capacity-serving contribution of
12 renewable resources. Do you agree?

13 A. In this particular case, yes. Staff has developed a method to account for the
14 value of renewable resources, but it requires good hourly load data. Given the data issues in
15 this case, Staff was unable to use that method as it has used in other cases when separately
16 allocating renewable and non-renewable production cost of service.

17 Q. Is it better to use Staff's approach which doesn't fully value capacity
18 contributions from renewable generation, or to allocate renewable generation costs differently
19 than renewable generation revenues?

20 A. It is better to allocate renewable generation costs and revenues consistently than
21 to ignore the problem. This is doubly true because the A&E allocator, which is not great to
22 begin with, is used to allocate the remaining generation.

Surrebuttal Testimony of
Sarah L.K. Lange

1 Q. On page 9 of her Rebuttal Testimony, Ms. Maini raises concerns with the
2 mechanics of how Staff allocated Administrative and General cost of service as a separate step
3 outside of the model, how do you respond?

4 A. Staff mechanically treated A&G separately so that it is not lost as a “bundled”
5 cost of service, and also because technical Staff is working with the Commission’s Information
6 Services department to update software and to make multiple rounds of
7 internal allocators possible.

8 Q. Ms. Maini recommends collaborative work for rate modernization at page 14 of
9 her Rebuttal Testimony. Do you agree?

10 A. Yes.

11 **Conclusion**

12 Q. Does this conclude your surrebuttal testimony?

13 A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Request of The Empire)
District Electric Company d/b/a Liberty for) Case No. ER-2024-0261
Authority to File Tariffs Increasing Rates)
for Electric Service Provided to Customers)
in Its Missouri Service Area)

AFFIDAVIT OF SARAH L.K. LANGE

STATE OF MISSOURI)
) SS.
COUNTY OF COLE)

COMES 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 *Surrebuttal / True-Up Direct Testimony of Sarah L.K. Lange*; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Sarah L.K. Lange
SARAH L.K. LANGE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 9th day of September 2025.



D. Suzie Mankin
Notary Public