

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026

DATA REQUEST

**KPSC
RH 2_1** Refer to the Rehearing Testimony of Amy Elliott (Elliott Rehearing Testimony), page 10, Figure AJE-RH2.

- a. Explain how Kentucky Power's reliability metrics compare favorably to its neighboring cooperatives when its five-year-average System Average Interruption Duration Index (SAIDI) was the second highest of all electric cooperatives listed in Figure AJE-RH2.
- b. Explain whether any of Kentucky Power's neighboring electric cooperatives listed in Figure AJE-RH2 provide any incentive compensation plan to their respective employees.

RESPONSE

- a. Please see KPCO_R_KPSC_RH_2_1_Attachment1 which provides the SAIFI and SAIDI values (excluding major event days) over the past five years for the Company and all of the neighboring cooperatives listed in Figure AJE-RH2. The charts included as part of KPCO_R_KPSC_RH_2_1_Attachment1 illustrate the success of Kentucky Power's vegetation management programs as the Company's SAIFI and SAIDI numbers are trending downwards while the neighboring cooperatives are trending upwards.
- b. The Company does not know whether the neighboring electric cooperatives listed in Figure AJE-RH2 provide incentive compensation to employees or how the total compensation plans between companies compare. However, it is the company's understanding that the neighboring cooperatives do offer a defined benefit pension plan, which would contribute to cooperative employees' total compensation.

Witness: Michele Ross (a)

Witness: Amy J. Elliott (b)

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 1 of 7

DATA REQUEST

**KPSC
RH 2_2** Refer to Kentucky Power's response to Commission Staff's First Rehearing Request for Information (Staff's First Rehearing Request), Item 11.

- a. In the same format as Kentucky Power's response to Staff's First Rehearing Request, Item 11, Confidential Attachment 1, provide the amounts of any adjustments made to remove expenses within the individual time entry code categories from the test year based on known and measurable changes or nonrecurring events.
- b. For each category that was not removed from the test year, provide an explanation of how that compensation benefits Kentucky Power's ratepayers.
- c. Explain why Kentucky Power should be allowed to recover the taxes associated with IMP-CO AIRCRAFT-PERSONAL USE (CAI) when there is no direct expense associated with Kentucky Power's cost of service in this proceeding.
- d. Explain whether the amount included in Kentucky Power's cost of service pertaining to PY-OTHER COMP/ALLOW-CASH (OTH) is considered a recurring expense for Kentucky Power or if that expense was irregular for the test year.
- e. Explain where Kentucky Power made the adjustment to remove PY-SEVERANCE PAYMENT-CASH (SEV) from its requested cost of service in this case.

RESPONSE

a. Direct expense related to the 2024 voluntary severance program was removed from Kentucky Power's requested cost of service as shown on Schedule W29, which totaled \$3,086,549 in general ledger records. The general ledger does not include employee details for Other Compensation so the amount removed from the requested cost of service cannot be provided in the requested format. However, KPSCO_R_KPSC_RH_2_2_ConfidentialAttachment1, column AQ, provides a reconciliation of total direct and indirect severance expense from payroll records to the total direct severance expense from general ledger records that was removed from the requested cost of service,

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 2 of 7

inclusive of severances for Kentucky Power's share of Wheeling Power Company employees who worked at the Mitchell Plant.

While Kentucky Power's 2024 voluntary severance expense benefits customers by resulting in a lower payroll expense going forward, and would arguably be recoverable over some period of time, the Company chose to remove this specific non-recurring expense from its requested cost of service in this case, further reducing its requested revenue requirement.

b. The earnings types in KPCO_R_KPSC_RH_1_11_ConfidentialAttachment1 parts a. and b. 1., (columns D-R and T-AE) are types of paid time off. Each of these types of earnings benefit customers in the same way and to the same extent as a similar number of hours or value of regular pay because a reasonable amount of paid time off is roughly as important for attracting and retaining suitable employees as regular pay. Employees expect to be able to take a reasonable amount of time off and do not want the time they take off to have a financial impact on them. The provision of paid time off is also customary in the utility industry and among U.S. general industry employers.

The earnings types in KPCO_R_KPSC_RH_1_11_ConfidentialAttachment1 part b. 2., (columns AG-AH) are not charged to customers or do not have significant expense included in the requested cost of service in this case. The minor tax costs associated with T/L-SAL-IMP-CO VEHICLES CAT 2 (ICT) benefits customers by allowing more rapid response to outages by allowing employees to take Company vehicles home, which enables them to drive directly to the outage location, rather than to the Company garage to pick up the Company vehicle and then to the outage location.

The earnings types in KPCO_R_KPSC_RH_1_11_ConfidentialAttachment1 part b. 3., (columns AJ-AR):

- PY-PAY ADVANCE (178) is the repayment to AEP of a pay advance granted to certain employees in 2001 to maintain their cash flow at the time that AEP was converting from semi-monthly pay to bi-weekly pay one week in arrears. There is not any income or expense recorded in the general ledger or any amount included in the Company's requested cost of service associated with the repayment of these pay advances.
- PY-GRIEV/SETTL-INC 806/401CASH (GSI) is a minor amount associated with the payment of a small grievance settlement to a union represented employee. Such items benefit customers because they are necessary for resolving disputes with represented employees in a manner that complies with labor laws. Failure to

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 3 of 7

settle or pay such amounts would also undermine labor relations and potentially result in work stoppages.

- PY-INCENTIVE WELLNESS-CASH (INW) is the payment of small wellness incentives to participants who earn such incentives under AEP's wellness program, such as obtaining certain preventive care, but do not have a health savings account or health reimbursement account to receive the incentive. Such wellness programs are commonplace and benefit customers by encouraging participants to obtain services focused on prevention or early identification of diseases that are likely to be much more costly to the plan. This saves customers money.
- PY-NONTOB NIC PREM CR CASH (NTN) is the payment of small monthly credit to medical plan participants if they and/or their spouse certifies that they did not use nicotine during the past year. The use of nicotine products has negative health consequences that result in additional costs for customers. This rewards participants who do not use nicotine products, which reduces their use and the associated negative health consequences. This saves customers money.
- IMP-CO AIRCRAFT-PERSONAL USE (CAI) is used to impute income to employees related to personal use of company aircraft based on the IRS Standard Industry Fair Level methodology. The amounts shown are applicable for tax purposes only and do not result in any significant income or expense being recorded in the general ledger or the Company's requested cost of service in this case. Please see the response to part c below.
- IMP-FINANCIAL COUNSEL (EFC) is used to impute income to employees related to financial counseling provided through AEP's financial counseling vendor. The amount is imputed based on the actual cost to AEP. The general ledger expense is not triggered by the imputed payroll income so there are timing differences between when the imputed income is recorded in payroll records and when the cost is recorded in the general ledger. These amounts benefit customers by reducing the burden of personal financial activities on participants, which enables them to spend more time on their work. If financial counseling expense is to be removed, the amount recorded in the GL is the correct amount to remove, not the amount recorded in payroll.

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 4 of 7

- PY-OTHER COMP/ALLOW-CASH (OTH) was used in this period to reimburse executive officer financial counseling participants for services and travel provided by vendors other than AEP's financial counseling vendor. These amounts benefit customers by reducing the burden of personal financial activities on participants which enables them to spend more time on their work. This earnings code was also used to pay a \$60,000 stipend to one executive participant for serving as AEP's Interim Transmission President. This amount benefited customers by providing appropriate wages for this interim position, which enabled the Company to immediately fill it with a qualified candidate for an interim period and ensure a smooth management transition, which saved customer money.
- PY-SEVERANCE PAYMENT-CASH (SEV) is used for the payment of severance benefits. The direct Kentucky Power severance expense recorded on its general ledger, not payroll records, was previously removed from the Company's requested cost of service in this case.
- IMP TAXABLE EDUCATIONAL REIMB (TEA) is imputed income to employees to whom the Company provided educational assistance in excess of the Federal annual limit for which such reimbursement is exempt from income tax. Such educational assistance is considered a taxable benefit. Educational assistance benefits customers by enabling current employees to obtain relevant education that otherwise likely would be unavailable to them. This is a source of often more dedicated and loyal employees who have come up through the ranks and have a broader understanding of the business, for roles for which additional or specialized education is a hiring differentiator or qualification. This helps meet Federal and state educational priorities and often saves money for customers in the long run by avoiding or delaying the need to hire externally and relocate employees for such roles.

The earnings types in KPCO_R_KPSC_RH_1_11_ConfidentialAttachment1 part b. 4., (columns AT-AW) are deferred compensation distributions. There is not any income or expense recorded in the general ledger directly related to the payment of any of these deferred compensation balances.

- IMP-DEFCareerShareDistribution (CSD) is imputed income related to the distribution of AEP shares to officers after their employment terminates for the value of previously deferred compensation in the form of AEP career shares. The value is imputed for tax withholding purposes because the distribution occurs in shares of AEP stock, rather than cash. These payments occur at least six months after the participant's termination of employment and generally reflect deferred

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 5 of 7

compensation that was accrued on the general ledger over many prior years of employment. FICA taxes were withheld at the time of deferral, so these distributions did not and do not give rise to any employer FICA taxes.

- IMP-SSC ER MATCH W/CITY TAX (SSC) is used for tax withholding purposes only. It applies FICA tax upon the distribution of Company matching contributions to the supplemental savings plan on which FICA tax was not applied at the time the contribution was credited to participants' accounts around circa 2002. As with all payments of this type, this balance was earned by the participant and accrued on the general ledger over many prior years of employment. The single employee with this type of earnings exceeded the social security wage base for both 2024 and 2025 by a substantial margin. Therefore, removing the employer portion of OASDI tax on these earnings, if there was any, would have resulted in this tax being applied to other earnings and would not have reduced Kentucky Power's OASDI tax for the test year. There is also a 1.45% employer portion of Medicare tax that applied to this income, without a limit. Removal of this amount from Kentucky Power's cost of service would result in an insignificant cost reduction on a Kentucky jurisdictionalized basis.
- PY-SSP DISTRIBUTION-CASH (SSP) reflects the payment of deferred compensation (Supplemental Savings Plan balances) that were generally earned by participants and accrued on the general ledger over many prior years of employment. FICA taxes were withheld at the time of deferral, so these distributions did not and do not give rise to any employer FICA taxes.
- PY-SUP PENS-CASH (Ret/DefMnth) (SUP) reflects the payment of supplemental excess pension (SERP) balances to participants. As with all payments of this type, this balance was earned by the participant and accrued on the general ledger over many prior years of employment. The single employee with this type of earnings exceeded the social security wage base for both 2024 and 2025 by a substantial margin. Therefore, removing the employer portion of OASDI tax on these earnings, if there was any, would have resulted in this tax being applied to other earnings and would not have reduced Kentucky Power's OASDI tax for the test year. There is also a 1.45% employer portion of Medicare tax that applied to this income, without a limit. Removal of this amount from Kentucky Power's cost of service would result in an insignificant cost reduction on a Kentucky jurisdictionalized basis.

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 6 of 7

The earnings types in KPCO_R_KPSC_RH_1_11_ConfidentialAttachment1 part b. 5., (columns AY-BB) are related to relocation benefits, all of which benefits customers by greatly expanding the population of qualified candidates for positions, which enables the Company to attract and retain more qualified personnel without paying a premium for their services or entering into a bidding war with local employers. This reduces long-term costs for customers.

- PY-MARKETING ASST PRG-CASH (MAP) reimburses relocation eligible participants for costs related to selling their departure home, such as selecting a qualified real estate agent, creating an effective listing strategy, follow-up with the agent, and assistance with sales negotiations.
- PY-RELO-HOME PURCHASE-CASH (PUR) reimburses relocation eligible participants for home sale costs, such as commissions and normal and customary non-recurring home sale closing costs.
- PY-RELO-LUMP SUM-CASH (RLS) is used to pay relocation eligible participants a taxable lump sum amount, based on salary grade, to assist with expenses related to house hunting (e.g. mileage, lodging, meals, and incidental expenses), temporary living/lodging, return trips home, and other miscellaneous expenses incurred that are not specifically covered by other relocation benefits.
- IMP-RELO-TXBL RELOCATION-NONCS (TRL) is used to impute income to participants for taxable relocation benefits that are paid for by the Company or its relocation vendor.

The earnings types in KPCO_R_KPSC_RH_1_11_ConfidentialAttachment1 part b. 6., (columns AD-BE) are related to payroll adjustments.

- ADJ-SICK-NON T&L (ASB) is used for payroll and other HR purposes to reclassify sick pay. Use of this code does not provide any pay to participants and did not result in any net expense in the Company's general ledger or requested cost of service in this case.
- ADJ-OCCUP INJ-NON T&L (ASC) is used for payroll and HR tracking purposes to reclassify occupational injury pay. It does not provide any pay to participants and did not result in any net expense in the Company's general ledger or requested cost of service in this case.

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 7 of 7

c. Kentucky Power should be allowed to recover the taxes associated with IMP-CO AIRCRAFT-PERSONAL USE (CAI) because they are not significant and likely would cost more to remove than the value saved for customers. Each of the employees with this type of earnings exceeded the social security wage base for both 2024 and 2025 by a substantial margin. Therefore, removing the employer portion of OASDI tax on these earnings, if there was any, would have resulted in this tax being applied to other earnings and would not have reduced Kentucky Power's OASDI tax for the test year. There is also a 1.45% employer portion of Medicare tax that applied to this income, without a limit. Removal of this amount from Kentucky Power's cost of service would result in a total reduction of approximately \$4 on a jurisdictionalized basis, which is not significant.

d. Some of the items paid using PY-OTHER COMP/ALLOW-CASH (OTH) are recurring, such as financial counseling reimbursements for former officers. However, none of the amounts for the specific officers shown in the test year are recurring.

e. Please see the response to part a. of this question.

Witness: Andrew R. Carlin

KPCO_R_KPSC_RH_2_2_ConfidentialAttachment1 is redacted in its entirety.

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 1 of 2

DATA REQUEST

**KPSC
RH 2_3** Refer to Direct Testimony of Michele Ross, page 18, Case No. 2017-00179, January 18, 2028 Order, pages 70–71 and Case No. 2020-00174, January 13, 2021 Order, pages 109–110.

- a. Provide a calculation of the vegetation management one-way balancing mechanism balances since 2015.
- b. Explain the basis for not including Trees Outside of the Right-of-Way expenditures in the one-way balancing mechanism.
- c. Explain the basis for capitalizing vegetation management despite the two referenced orders referring to vegetation management as “O&M.”

RESPONSE

a. Please see KPCO_R_KPSC_RH_2_3_Attachment1.

b. and c. The one-way balancing mechanism was originally established in Kentucky Power’s 2014 base case (Case No. 2014-00396). The Commission-approved settlement agreement in that case stated that the amounts included in the one-way balancing account were specific to O&M expenditures, as described in the Direct Testimony of Company Witness Everett G. Phillips.¹ Company Witness Phillips’ Direct Testimony also explained the difference between these O&M expenditures related to the clearing of vegetation and small Trees Inside of the Right-of Way (“TIR”), and the capital investments to widen rights-of-way and remove Trees Outside of the Right-of-Way² (“TOR”).

¹ KPCO_SA_Attachment1 at pg.9-12, *In the Matter of: Application of Kentucky Power Company For: (1) A General Adjustment of Its Rates For Electric Service; (2) An Order Approving Its 2014 Environmental Compliance Plan; (3) An Order Approving Its Tariffs And Riders; And (4) An Order Granting All Other Required Approvals And Relief*, Case No. 2014-00396 (Ky. P.S.C April 30, 2015)

² Direct Testimony of Everett G. Phillips at pp 8-31, *In the Matter of: Application of Kentucky Power Company For: (1) A General Adjustment of Its Rates For Electric Service; (2) An Order Approving Its 2014 Environmental Compliance Plan; (3) An Order Approving Its Tariffs And Riders; And (4) An Order Granting All Other Required Approvals And Relief*, Case No. 2014-00396 (Ky. P.S.C April 30, 2015)

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 2 of 2

In each of Kentucky Power's subsequent base cases and annual vegetation management report, the Company has outlined and described the capital investments made to widen rights-of-way and remove TOR, as well as the capital investments to remove TIR with a diameter greater than 18 inches, separately from the O&M expenses related to its Vegetation Management Plan included in the one-way balancing account which address TIR. The Orders cited in the question above refer specifically to the O&M related to the one-way balancing account.

Listed below are the Company's distribution witnesses in its last four base rate cases where these differences in types of vegetation management activities are discussed:

Case No.	Witness	Reference
2017-00179	Phillips	Direct Testimony (p. 23-54)
2020-00174	Phillips	Direct Testimony (p. 11-29)
2023-00159	Phillips	Direct Testimony (p. 24-29)
2025-00257	Ross	Direct Testimony (p. 15-28)

The relevant portions of these testimonies is provided in KPCO_R_KPSC_RH_2_3_Attachment2.

Kentucky Power officially established a TOR Pilot Program in its 2018 Vegetation Management Plan. The TOR Pilot Program was separate from the TIR Vegetation Management Plan and because it involves capital expenditures is not addressed in the one-way balancing mechanism. In Case No. 2023-00159, Kentucky Power proposed a Distribution Reliability Rider ("DRR") which included capital expenditures related to the TOR Pilot Program. While the Commission ultimately denied the DRR, it recognized the success of the TOR Pilot Program and encouraged Kentucky Power to continue making those investments.³

Witness: Brian C. Ciborek (a)

Witness: Michele Ross (b & c)

Witness: Amy J. Elliott (b & c)

³ Order at pg. 78, *In the Matter of: Electronic Application of Kentucky Power Company For (1) A General Adjustment of Its Rates For Electric Service; (2) Approval of Tariffs And Riders; (3) Approval of Accounting Practices To Establish Regulatory Assets and Liabilities; (4) A Securitization Financing Order; And (5) All Other Required Approvals And Relief*, Case No. 2023-00159 (Ky. P.S.C January 19, 2024)

From The Direct Testimony of Everett G. Phillips
On Behalf of Kentucky Power
Case No. 2017-00179

1 based Plan is expected to improve tree-related distribution circuit reliability further
 2 through more frequent re-clearing of rights-of-way. Later, I provide more detail
 3 concerning the Company's 2015 distribution Vegetation Management Program.

4 **4. CAPITAL INVESTMENT**

5 **Q. PLEASE SUMMARIZE THE YEARLY DISTRIBUTION CAPITAL COSTS**
 6 **SINCE SEPTEMBER 30, 2014 (THE TEST YEAR USED IN THE COMPANY'S**
 7 **LAST BASE RATE CASE.)**

8 A. The total capital Plant-In-Service installed since September 30, 2014 was
 9 \$92,482,663. Details are provided in Table 3 below.

10 **Table 3 - Kentucky Power 2014-2016 Plant-In-Service Capital Costs**

Category	2014 (Oct.- Dec.)	2015	2016	2017 (Jan.- Feb.)	Total*
Asset Improvement	\$4,282,812	\$11,521,177	\$11,831,279	\$2,389,807	\$30,025,075
Customer Service	\$3,955,730	\$12,292,677	\$11,943,357	\$1,468,891	\$29,660,655
Forestry	\$1,301,729	\$5,699,748	\$3,718,526	\$719,584	\$11,439,587
Other	\$0	\$0	\$69,758	\$0	\$69,758
Reliability	\$1,636,131	\$5,194,087	\$5,103,175	\$1,486,568	\$13,419,961
System Restoration	\$501,694	\$3,580,284	\$3,442,652	\$342,997	\$7,867,627
Total	\$11,678,096	\$38,287,973	\$36,108,747	\$6,407,847	\$92,482,663

11 *Total additions since 9/30/2014 (end of test year in Case 2014-00396) through 2/28/2017

12 **Q. PLEASE EXPLAIN EACH OF THE CAPITAL PROJECT CATEGORIES.**

13 A. Kentucky Power each year completes a significant number of capital projects of
 14 varying degrees of complexity and dollar value. The majority of capital projects
 15 completed by Kentucky Power can be classified under one of six general categories.

16 The general capital project categories are:

- 17 1. Asset Improvement: Asset Improvement projects include replacement of
 18 obsolete equipment and other aging infrastructure, as well as the addition

1 of new assets that support projects associated with smart grid such as the
2 Distribution Automation – Circuit Reconfiguration technology. This
3 technology automatically reconfigures distribution circuits during fault
4 conditions to minimize the impact of outages to the fewest number of
5 customers. Kentucky Power applies this technology to both line and
6 station equipment. This project category also has a significant impact on
7 reducing the duration of customer outages and improving customer
8 reliability.

9 2. Customer Service: These projects support new customer facilities, and
10 include upgrading existing customer facilities, meter installations, and
11 other customer requirements.

12 3. Forestry: Forestry capital projects generally involve widening of rights-
13 of-way, the removal of trees greater than 18 inches in diameter within or
14 outside the rights-of-way, as well as the removal of “cycle buster trees.”
15 “Cycle Buster Trees” are trees greater than 18” in diameter that must be
16 trimmed or removed before the circuit is due for its next cycle.

17 4. Reliability: Reliability capital projects are specific projects that target
18 known reliability issues affecting both groups of customers and entire
19 circuits. These projects may also be used to add capacity to the system,
20 and include new circuits or stations, additions to existing facilities, and
21 replacing existing assets with higher capacity assets such as re-
22 conductoring an existing line with an increased conductor size. A recent
23 example of a reliability project is the new Haddix-Troublesome Creek

1 Circuit. Prior to the Haddix-Troublesome Creek Circuit being placed in
2 service on January 18, 2017, the customers now served by it were served
3 by the Haddix-Quicksand Circuit. The former Haddix-Quicksand Circuit
4 was 213 line miles in length and served 2,017 customers. The new
5 Haddix-Troublesome Creek project reduced the length of the Haddix-
6 Quicksand Circuit by 45% to 116 line miles and reduced the number of
7 customers receiving service on the Haddix-Quicksand Circuit by almost
8 50% to 1,045 customers. The new Haddix-Troublesome Creek Circuit is
9 97 line miles and serves 972 customers. Reducing the circuit length and
10 the number of customers served by a single circuit limits the impact from
11 an outage and assists in restoring service more quickly.

12 Another example of a specific reliability project is the Cutout
13 Replacement Project. Cutouts are identified for replacement because
14 they may crack and fail during repeated freezing and thawing over time.

- 15 5. System Restoration: These projects replace assets that have failed.
16 Capital projects completed during service restoration are typical system
17 restoration projects, and include replacing poles, re-conductoring full
18 length spans, and replacing transformers damaged during a storm or
19 weather-related event.
- 20 6. Other: These include miscellaneous projects, as well as distribution
21 projects that support other business units. These include distribution
22 upgrades made in response to a transmission system change.

1 **5. OPERATION AND MAINTENANCE EXPENSE**

2 **Q. WHAT WAS THE KENTUCKY POWER DISTRIBUTION OPERATION**
3 **AND MAINTENANCE EXPENSE FOR THE TEST YEAR?**

4 A. Kentucky Power's unadjusted, actual Distribution Operation and Maintenance
5 Expense for the Test Year ending February 28, 2017 was \$49,901,372.

6 **Q. HOW DOES THE TEST YEAR DISTRIBUTION OPERATION AND**
7 **MAINTENANCE EXPENSES COMPARE WITH HISTORICAL LEVELS**
8 **FOR KENTUCKY POWER?**

9 A. Table 4 provides the Distribution Operation and Maintenance expenses for 2014
10 through 2016 and the test year.

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2

**Table 4 - Kentucky Power Distribution
 Operation and Maintenance Expenses by Year**

General Category	2014	2015	2016	Test Year
Asset Improvement	\$4,878,026	\$4,583,901	\$4,716,346	\$4,683,735
Customer Service	\$780,646	\$400,151	\$701,125	\$861,379
Forestry	\$17,567,439	\$23,067,891	\$27,774,545	\$28,259,445
Other	\$4,925,328	\$5,745,071	\$5,375,592	\$5,061,171
Amortization of Major Storm Deferral	\$4,698,444	\$3,563,822	\$2,429,200	\$2,429,200
Reliability	\$551,598	\$475,412	\$402,309	\$422,326
System Restoration	\$11,643,120	\$9,530,008	\$8,073,649	\$8,184,116
Grand Total	\$45,044,601	\$47,366,256	\$49,472,766	\$49,901,372

3 **Q. PLEASE DESCRIBE THE MAJOR COMPONENTS OF THE**
 4 **DISTRIBUTION O&M EXPENSES INCLUDED IN THE TEST YEAR.**

5 A. The largest Operation and Maintenance expense of the Test Year is the Forestry
 6 expense in connection with the implementation of the Company's Distribution
 7 Vegetation Management Plan approved by the Commission in Case No. 2014-
 8 00396. This level of Forestry expense is expected to continue until Task 1 and Task
 9 2 work (described below) is completed.

10 The System Restoration expense can vary from year-to-year, and is largely
 11 dependent on weather events during a particular year. The Customer Service
 12 Operation and Maintenance expenditures support customer programs and address
 13 customer issues. The Asset Improvement expense represents the Operation and
 14 Maintenance expense associated with capital additions such as the replacement of
 15 poles, towers, fixtures, conductors, line transformers and station equipment. The
 16 other major category is the Amortization of Major Storm Deferral. This reflects the
 17 amortization of regulatory assets related to Major Event Storms that were approved
 18 by the Commission for later review and potential recovery through rates. Company

1 Witness Wohnhas addresses this topic in more detail in his testimony. Finally,
2 “other” contains miscellaneous projects and overheads.

V. VEGETATION MANAGEMENT

1. EVOLUTION OF THE COMPANY’S DISTRIBUTION VEGETATION 4 MANAGEMENT PLAN

5 **Q. PLEASE DESCRIBE THE ORIGIN OF THE KENTUCKY POWER’S**
6 **VEGETATION MANAGEMENT PLAN.**

7 A. Prior to July 2010, Kentucky Power employed a performance-based approach in its
8 distribution vegetation management efforts. With a performance-based approach,
9 vegetation management work was targeted based on a number of factors, including the
10 time elapsed since the last vegetation management activity, individual circuit
11 inspection results, and environmental factors. Initially, resources were targeted to the
12 areas with the greatest and most immediate vegetation management needs.

13 In the Company’s 2009 rate case, Case No. 2009-00459, Kentucky Power
14 proposed increased vegetation management funding to permit the Company to
15 transition over a five-year period to a four-year cycle-based vegetation management
16 plan. The Company’s proposed clearing 25% of its distribution system annually
17 following the conclusion of a five-year transition period. Kentucky Power projected
18 incremental Operation and Maintenance expenditures of \$13.93 million in year one of
19 the transition period and \$16.58 million of Operation and Maintenance expenditures in
20 year five of the transition period. Kentucky Power also projected increasing the
21 annual amount of its test year vegetation management capital expenditures by 132%
22 by year five of the transition period.

1 **Q. DID KENTUCKY POWER IMPLEMENT ITS 2009 DISTRIBUTION**
2 **VEGETATION MANAGEMENT PROPOSAL?**

3 A. No. The parties to the case agreed to, and the Commission approved, a revised
4 distribution vegetation management plan (“2010 Vegetation Management Plan”).
5 Under the 2010 Vegetation Management Plan, the Company’s test year vegetation
6 management O&M expenditures were increased by \$10 million to \$17,237,965 in lieu
7 of the \$13.93 million to \$16.58 million originally proposed. Kentucky Power
8 projected that the transition to a four-year cycle with the additional funding (an
9 additional \$10,000,000 annually) provided for under the 2010 Vegetation
10 Management Plan approved by the Commission would require seven years. The
11 Company also agreed to increased reporting by Kentucky Power on its distribution
12 management efforts. The 2010 Vegetation Management Plan and the corresponding
13 funding were to remain in effect until the Company’s next base rate case.

14 **Q. WHY DID KENTUCKY POWER SEEK TO AMEND ITS 2010 VEGETATION**
15 **MANAGEMENT PLAN IN CASE NO. 2014-00396?**

16 A. At the time the Company filed its 2014 rate case application in December 2014, it had
17 four and one-half years of experience with the 2010 Vegetation Management Plan.
18 Based on that experience, the Company determined that the extent of work required to
19 transition to a four-year cycle was significantly greater than the Company estimated in
20 2010. For example, Kentucky Power initially projected that approximately 763,000
21 trees would have to be removed in transitioning to a four-year cycle over the projected
22 seven years. Yet, during the first four and one-half years of the program the Company
23 was required to remove over 900,000 trees. Above normal precipitation during the

1 first four years of the plan also led to increased work and expense. Finally, Kentucky
2 Power determined it had underestimated the time and expense required to remove
3 vegetation from within and in close proximity to its energized facilities. Based on this
4 experience, Kentucky Power estimated that an additional eighteen months (or until
5 December 31, 2018) would be required to complete the initial re-clearing (Task 1) of
6 its distribution system. The Company also determined that it could not wait until the
7 Task 1 work was completed to begin re-clearing the circuits that were re-cleared at the
8 beginning of the program. Kentucky Power proposed that beginning in July 2015,
9 when the requested additional funding would be available if the Company's request
10 were granted, Kentucky Power would undertake interim re-clearing cycle (Task 2)
11 work that would proceed simultaneously with the remaining Task 1 work.

12 **Q. WHAT CHANGES TO THE 2010 PLAN DID KENTUCKY POWER**
13 **ORIGINALLY PROPOSE IN ITS APPLICATION IN CASE NO. 2014-00396?**

14 A. Kentucky Power proposed continuing Task 1 work at a rate of approximately 986
15 miles per year and at an estimated 2015 cost of \$17,605 per mile (\$17,358,530 per
16 year.) The estimated Task 1 cost per mile was based on 2014 January through
17 September 2014 actual Task 1 costs. The Company also proposed completing 3,112
18 miles of Task 2 work by the end of 2018. Kentucky Power estimated the average
19 2015 per mile cost of Task 2 work at \$10,563 per mile, or 60% of the per mile cost for
20 Task 1 work. The 60% cost relationship between Task 1 work and Task 2 was based
21 upon industry experience for re-clearing on a four-year cycle. Under this schedule,
22 the Task 2 work would be completed at the same time as the Task 1 work was
23 scheduled to be completed. Kentucky Power proposed beginning in 2019 the four-

1 year maintenance cycle (Task 3) at an estimated cost of \$10,004 per mile. This value,
2 which is approximately 57% of cost of Task 1 work, was based on the Company's
3 original estimate that Task 2 work could be accomplished at 60% of the cost of Task 1
4 work, and then was further reduced to reflect anticipated efficiencies following ramp-
5 up of operations.

6 **Q. DID KENTUCKY POWER SUBSEQUENTLY AGREE TO AMEND ITS**
7 **PROPOSAL TO MODIFY THE COMPANY'S 2010 VEGETATION**
8 **MANAGEMENT PLAN?**

9 A. Yes. Following discovery and settlement negotiations, Kentucky Power and two of
10 the parties to the case agreed to an amended vegetation management plan. The most
11 significant amendment was based on the Company's response to KPSC 3-7. That data
12 request asked Kentucky Power to project the work schedule and the O&M expense
13 associated with the adoption of a five-year cycle (in lieu of the originally proposed
14 four-year cycle) beginning in 2019 for maintenance (Task 3) work. That is, the Task 3
15 work would comprise a five-year maintenance cycle instead of the four-year
16 maintenance proposed by the Company in its application.

17 **Q. WHAT WAS THE MODIFIED VEGETATION MANAGEMENT PLAN ("2015**
18 **VEGETATION MANAGEMENT PLAN") AGREED TO BY KENTUCKY**
19 **POWER AND THE TWO SETTling PARTIES?**

20 A. The 2015 Vegetation Management Plan provided for the completion of Task 1 work
21 by December 31, 2018. The Task 2 work was scheduled to be completed by June 30,
22 2019. Task 3 work was projected to begin July 1, 2019, at which time Kentucky
23 Power's entire distribution system would be re-cleared on a five-year cycle.

1 **Q. DID KENTUCKY POWER AND THE SETTLING PARTIES AGREE ON**
2 **FUNDING FOR THE 2015 VEGETATION MANAGEMENT PLAN?**

3 A. Yes. Kentucky Power's 2010 Vegetation Management Plan was funded through base
4 rates at an annual amount of \$17,237,965. The 2015 Plan was to be funded through an
5 increase in the Company's annual revenue requirement to \$27,661,060 until the
6 Company began the five-year maintenance cycle on or about July 1, 2019. The
7 increased funding, and subsequent reduction when Task 3 work was begun discussed
8 below, were premised upon the Company's at-the-time untested estimate that the cost
9 of performing Task 2 work on a five-year cycle would not materially vary from the
10 60% of the Task 1 cost typical of a four-year cycle. Effective cycle one of the July
11 2019 billing cycle, which was the estimated date Kentucky Power anticipated
12 completing Task 1 and Task 2 work, the Company's rates were to be reduced by
13 \$11,780,408 to reflect the projected reduced costs associated with performing only
14 Task 3 work. The agreement also contained certain other rate-related provisions that I
15 discuss later.

16 **Q. DID THE COMMISSION APPROVE THE 2015 VEGETATION**
17 **MANAGEMENT PLAN?**

18 A. Yes. It also required Kentucky Power to obtain Commission approval prior to
19 modifying its annual projected vegetation management spending (filed October 1 of
20 the year preceding the implementation of the work plan) on both an aggregate and a
21 district basis by more than 10%. In practice, as I discuss below, this requirement has
22 limited the Company's ability to manage its vegetation management expenditures in
23 the most cost-effective manner.

1 **2. 2015 DISTRIBUTION VEGETATION MANAGEMENT PLAN RESULTS**

2 **Q. KENTUCKY POWER’S 2015 VEGETATION MANAGEMENT PLAN AS**
 3 **APPROVED BY THE COMMISSION PROJECTS THAT THE COMPANY**
 4 **WILL COMPLETE ITS INITIAL RE-CLEARING OF ITS DISTRIBUTION**
 5 **SYSTEM (TASK 1 WORK) BY DECEMBER 31, 2018. IS KENTUCKY**
 6 **POWER ON PACE TO MEET THAT TARGET?**

7 A. Yes. Exhibit 10 to the Settlement Agreement, which forms the basis for the plan,
 8 projected the Company would complete 987 miles of Task 1 work in 2015 and 986
 9 miles of Task 1 work in 2016, for a total of 1,973 miles. During that two-year period,
 10 Kentucky Power completed 2,530 miles of Task 1 work or 128% of the target. As a
 11 result, Kentucky Power projects it will complete its Task 1 work during the first
 12 quarter of 2018. A more complete accounting of the last two calendar years of the
 13 Company’s Task 1 vegetation management work is provided in Table 5 below.

Table 5 - Summary of Vegetation Management Plan Work Completed

Description	2015		2016		Total	
	Task 1	Task 2 (6 Months)	Task 1	Task 2	Task 1	Task 2
Miles Completed	1,436	434	1,094	711	2,530	1,145
Brush Cut Acres	1,950	1,130	2,059	1,534	4,009	2,664
Brush Spray Acres	2,493	279	3,062	778	5,555	1,057
Trees Removed	212,340	31,834	212,118	87,427	424,458	119,261
Trees Trimmed	62,825	14,265	52,046	45,622	114,871	59,887

14
 15 Further information regarding the 2015 Vegetation Management Plan is provided in
 16 Exhibit EGP-4.

1 **Q. WILL THE COMPANY BE ABLE TO COMPLETE THE TASK 2 WORK NO**
2 **LATER THAN JUNE 30, 2019 AS PROJECTED?**

3 A. Yes. Table 10 of the Settlement Agreement projected that by December 31, 2016
4 Kentucky Power would complete 1,142 miles of Task 2 work. During that period,
5 Kentucky Power completed 1,145 miles of Task 2 work, or an amount slightly above
6 target. In fact, and as I discuss below, Kentucky Power is proposing to complete its
7 Task 2 work by December 31, 2018.

8 **Q. CAN YOU PUT THE COMPANY'S 2015 VEGETATION MANAGEMENT**
9 **PLAN EFFORTS IN PERSPECTIVE?**

10 A. In 2015 and 2016, Kentucky Power completed 2,530 miles of Task 1 work. That is
11 equal to the distance between Ashland, Kentucky and San Francisco, California, with
12 almost 350 miles left over for a trip to Los Angeles, California. The 3,675 miles of
13 total 2015 and 2016 combined Task 1 and Task 2 work would stretch from Ashland,
14 Kentucky to Barrow, Alaska, the northernmost city in the United States, which is
15 located 320 miles above the Arctic Circle on the Arctic Ocean. Much of this work
16 was performed in difficult terrain in some of the heavily-wooded topography in the
17 Commonwealth. See Exhibit EGP-3. Another measure of the Company's efforts is
18 that in 2015 and 2016, Kentucky Power removed more than one-half of a million trees
19 as part of its vegetation management efforts. The 424,000 trees removed as part of the
20 Company's Task 1 work alone during this two-year period equals more than 55% of
21 the total trees the Company projected in 2010 it would be required to remove over the
22 entire seven-year transition period to a cycle-based program. Finally, during the last
23 two years, the Company cut over 10.4 square miles of brush; that is equal to an area

1 the approximate size of the city of Ashland. In the same period, its combined 20.75
2 square miles of brush cut or sprayed is equal to approximately 10% of the area of
3 Boyd County.

4 **Q. EMBEDDED IN KENTUCKY POWER'S BASE RATES BEGINNING JUNE**
5 **30, 2015 IS \$27,661,060 IN ANNUAL VEGETATION MANAGEMENT O&M**
6 **SPENDING. DID THE COMPANY MEET THAT TARGET IN 2015 (WHICH**
7 **INCLUDED SIX MONTHS OF THE INCREASED SPENDING) AND 2016?**

8 A. Yes. As illustrated in Exhibit 9 to the Settlement Agreement, Kentucky Power's
9 combined Task 1 and Task 2 2015 Operation and Maintenance expenditures for the
10 twelve months ended December 31, 2015 were projected to be \$22,327,777. During
11 that year the Company's combined Task 1 and Task 2 Operation and Maintenance
12 expenditures were \$23,067,891 or 103% of the target. For 2016, Kentucky Power's
13 projected combined Task 1 and Task 2 Operation and Maintenance spending was
14 \$27,664,598. The Company's actual Task 1 and Task 2 Operation and Maintenance
15 spending totaled \$27,774,545, or slightly more than the target. Since the
16 establishment of the 2010 Distribution Vegetation Management Plan, Kentucky
17 Power's actual distribution vegetation management Operation and Maintenance
18 expenditures through December 31, 2016 totaled \$129,117,176, or 101% of its target
19 of \$127,563,218.

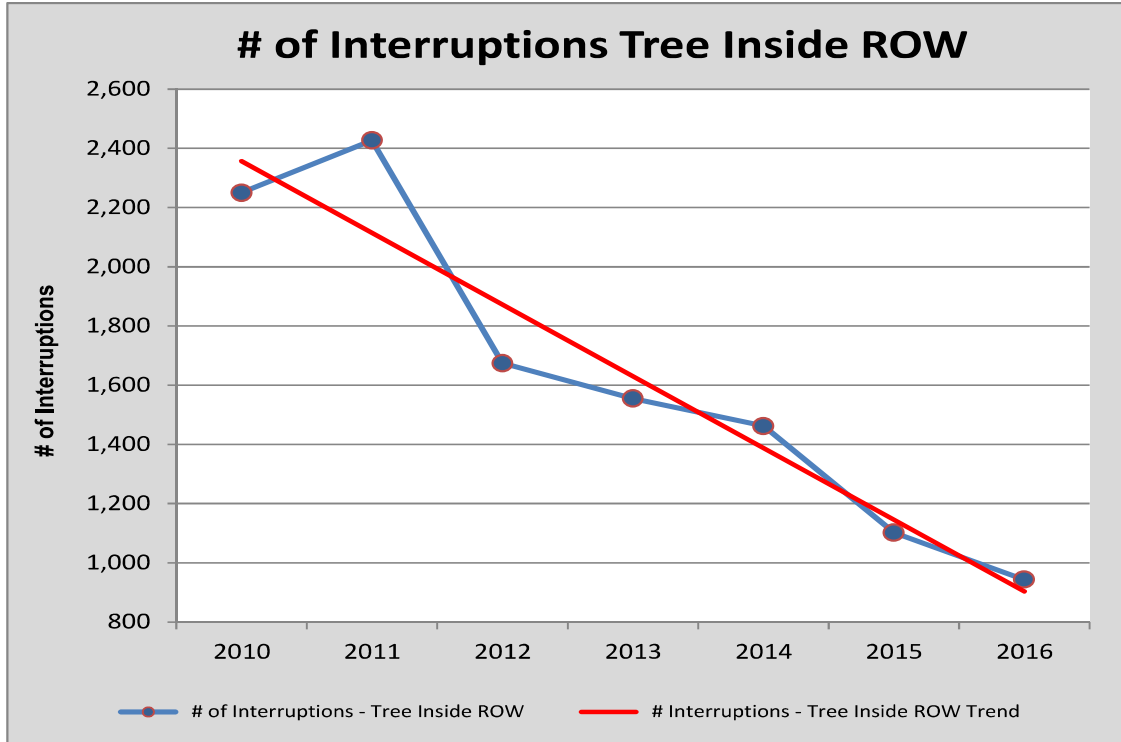
20 **Q. HAVE THE 2010 AND 2015 DISTRIBUTION VEGETATION MANAGEMENT**
21 **PLANS IMPROVED DISTRIBUTION RELIABILITY FOR THE COMPANY'S**
22 **CUSTOMERS?**

1 A. Absolutely. Kentucky Power’s distribution vegetation management Operation and
 2 Maintenance expenditures focus on re-clearing and maintaining the Company’s rights-
 3 of-way. As a result, the best measure of the effect of Kentucky Power’s vegetation
 4 management efforts is the number of customer interruptions, total customers affected,
 5 as well as customer minutes interrupted, by trees and vines within the Company’s
 6 rights-of-way. As shown on Table 6 below, the number of incidents of customer
 7 interruptions as a result of vines and trees in the Company’s rights-of-way declined
 8 61% from a high of 2,426 in the year ended December 2011 to a low of 943 in the
 9 year ended December 2016.

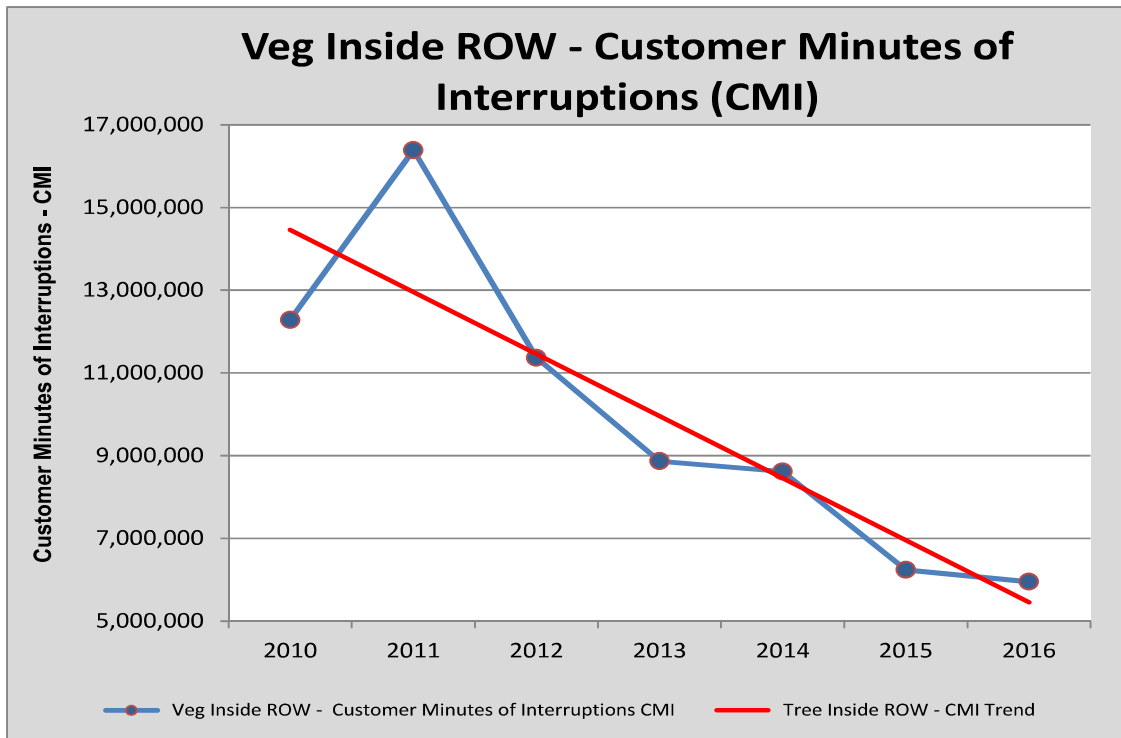
Table 6 – Summary Of Inside Rights-Of-Way-Related Outages

Minor Cause Code	Year - 12 Month Ending Dec	Number of Interruptions	Total Customer Affected	Total Customer Minutes Interrupted
TIR + VIN	2010	2,250	64,360	12,280,664
TIR + VIN	2011	2,427	72,076	16,388,594
TIR + VIN	2012	1,674	43,934	11,369,680
TIR + VIN	2013	1,555	48,099	8,866,856
TIR + VIN	2014	1,462	36,471	8,617,318
TIR + VIN	2015	1,102	30,040	6,236,943
TIR + VIN	2016	943	28,713	5,949,862

11 Consistent with this trend, the number of customers affected by trees and vines within
 12 the rights-of-way declined 60% from 72,076 in 2011 to 28,713 last year. Finally,
 13 customer minutes interrupted as a result of trees and vines in the rights-of-way, which
 14 measure the total impact of the interruptions, declined from 16,388,594 minutes in
 15 2011 to 5,949,862 minutes in the year ended December 31, 2016. That represents a
 16 64% decrease between 2011 and 2016. These improvements are shown graphically in
 17 the two charts below:



1



2

3

4

One point I wish to emphasize is that comparisons between only two years, particularly two consecutive years, which can be affected by temporary conditions

1 such as abnormal weather, can be misleading. The trend over a six-year period, such
2 as shown in Table 6 and the two charts above, however, is strongly indicative of the
3 success the Company and its customers are enjoying from the investment in
4 distribution vegetation management.

5 **Q. DO THE CUSTOMERS INTERRUPTED AND TOTAL CUSTOMER**
6 **MINUTES INTERRUPTED VALUES IN TABLE 6 REFLECT OUTAGES**
7 **CAUSED BY MAJOR STORM EVENTS?**

8 A. No. But I am comfortable the severity of outages related to major event storms has
9 been lessened by the success of the Kentucky Power's Distribution Vegetation Plan.
10 For example, a major storm occurred on March 1, 2017 that brought wind speeds of
11 more than 60 miles per hour to the Company's service territory. While there were
12 several outages due to trees and other items from outside the rights-of-way, there were
13 20 percent less outages due to trees inside the rights-of-way as compared to a similar
14 storm with similar wind speeds on May 8, 2009. The May 2009 storm occurred prior
15 to the initiation of the 2010 Vegetation Management Plan.

16 **Q. ARE TREES AND VEGETATION INSIDE THE RIGHTS-OF-WAY THE**
17 **ONLY VEGETATION-RELATED CAUSES OF DISTRIBUTION OUTAGES?**

18 A. No. Trees outside the rights-of-way can fall or slide into the rights-of-way. This is
19 particularly true of the substantial portions of the Company's service territory where
20 the Company's distribution facilities are located in areas flanked by steep hillsides.
21 Rights-of-way expansions, and the removal of trees outside the Company's rights-of-
22 way, are accounted for as capital expenditures and thus are in addition to the

1 Company's vegetation management Operation and Maintenance expenditures I
2 discuss above.

3 **Q. HAS KENTUCKY POWER BEEN MAKING CAPITAL EXPENDITURES IN**
4 **SUPPORT OF ITS DISTRIBUTION VEGETATION MANAGEMENT**
5 **PROGRAM?**

6 A. Yes. Before I provide the specifics I should note that in addition to expansion of
7 rights-of-way and the removal of trees outside the Company's rights-of-way, the
8 removal of trees within the rights-of-way larger than 18 inches in diameter also is
9 accounted for as a capital expenditure. With this caveat, Kentucky Power's forestry
10 capital (capital expenditures related to vegetation management) for the past seven
11 years averaged \$3.16 million per year and totaled \$22.1 million over the same period
12 as shown in Table 7 below.

13 **Table 7 – Kentucky Power Forestry Capital Expenditures (Millions)**

Expenditure Year							
2010	2011	2012	2013	2014	2015	2016	Total
\$1.3	\$1.5	\$2.6	\$3.4	\$3.9	\$5.7	\$3.7	\$22.1

14

15 **Q. PLEASE SUMMARIZE THE COMPANY'S VEGETATION MANAGEMENT**
16 **EFFORTS TO DATE.**

17 A. The Company is on target to exceed the goals of its 2015 Vegetation Management
18 Plan. It anticipates completing its Task 1 re-clearing work within the first quarter of
19 2018 and thus nine months early. Kentucky Power also projects that it will complete
20 its interim re-clearing (Task 2) work six months early on December 31, 2018. Most
21 importantly, as demonstrated by the reliability metric most closely related to the work
22 undertaken as part of Kentucky Power's distribution vegetation management plan, the

1 Company's customers have seen a 60% decrease in interruptions related to inside the
2 rights-of-way trees and vegetation.

3 **Q. THE 2015 DISTRIBUTION VEGETATION MANAGEMENT PLAN**
4 **PROJECTS THAT ONCE TASK 1 AND TASK 2 WORK IS COMPLETE,**
5 **TASK 3 (MAINTENANCE RE-CLEARING) WORK CAN BE**
6 **ACCOMPLISHED AT AN AVERAGE ANNUAL O&M EXPENDITURE OF**
7 **\$15,880,652. IS THAT PROJECTION STILL VALID?**

8 A. No. When Kentucky Power estimated the cost of Task 3 work it assumed that Task 2
9 work, which served as the starting point of the Company's calculation of the cost of
10 Task 3 work, could be completed at approximately 60% of the cost of Task 1 work.
11 The Company's estimate also was premised upon the expectation that the cost of Task
12 3 work on a five-year cycle would not materially differ from performing Task 3 work
13 on a four-year cycle. The Company used the 60% value for Task 2 work, which is
14 based on the cost of re-clearing on a four-year cycle, because it was the best evidence
15 available to Kentucky Power at the time. Based on 20 months of experience of
16 performing Task 2 work, Kentucky Power's best current estimate is that Task 3 work,
17 including any cost increases, can be accomplished at an average cost of \$13,365 per
18 mile.

19 **Q. WHY IS THE TASK 3 WORK MORE EXPENSIVE THAN INITIALLY**
20 **PROJECTED?**

21 A. There are multiple reasons. The projected Task 3 costs used in the 2015 Vegetation
22 Management Plan were estimates based on the Company's experience in performing
23 Task 1 work. While made in good faith, the estimates were just that. With the

1 experience gained over the 20 months of Task 2 work Kentucky Power is better able
2 to estimate the re-growth rates after the rights-of-way have been cleared. That
3 experience indicates that the additional year's growth inherent in a five-year cycle, as
4 opposed to the four-year cycle upon which the estimate was made, increases the cost
5 of the re-clearing work. Kentucky Power now possesses better evidence upon which
6 to estimate the re-growth rates after the rights-of-way have been cleared, and the
7 additional costs associated with the additional growth. In addition, the Company has
8 completed its ramp-up period and has achieved most of the efficiencies to be gained
9 through experience.

10 **Q. ARE THERE ANY OTHER CAUSES?**

11 A. Yes. Annual rainfall for eastern Kentucky has been above average every year since
12 beginning the Plan in 2010. This above average rainfall has led to both a greater
13 amount of vegetation and faster than anticipated regrowth. Further, when trees are
14 trimmed, the tree roots that developed to support the original size of the tree before
15 trimming are left in place. The soil in eastern Kentucky is fertile. When the soil
16 temperatures and moisture content approach ideal, the tree roots are quite capable of
17 supporting fast re-growth of the tree branches. As an example, silver maple tree
18 sprouts may grow up to 15 feet in a single year. A related factor is the amount of
19 vegetation in Kentucky Power's rights-of-way is significantly greater than originally
20 anticipated. For example in 2009, Kentucky Power projected in conjunction with its
21 2010 Vegetation Management Plan that Task 1 work would involve the removal of
22 763,000 trees over seven years. Through December 31, 2016, Kentucky Power

1 removed 1,344,104 trees – 76% more than originally projected – as part of its Task 1
2 work and Task 1 work continues.

3 **Q. WILL THE COMPLETION OF TASK 1 WORK ELIMINATE THE**
4 **ADDITIONAL COSTS ASSOCIATED WITH THE FERTILITY OF THE**
5 **COMPANY’S RIGHTS-OF-WAY?**

6 A. Only in part. Although the Task 1 work clears the Company’s rights-of-way, the
7 vegetation is expected to grow back more quickly and in greater abundance than
8 originally projected. This regrowth in part can be controlled through Kentucky
9 Power’s post-Task 1 herbicide program, but the fact remains that the Company’s
10 rights-of-way are capable of supporting larger and denser amounts of vegetation than
11 otherwise would be anticipated.

12 **Q. DO ANY OTHER FACTORS CONTRIBUTE TO THE HIGHER THAN**
13 **PROJECTED TASK 3 COSTS?**

14 A. Another challenge faced by the Company is the growing customer demand to remove
15 tree debris. As the Company is re-establishing its right-of-ways, many customers
16 want the tree debris cleaned up and removed even though the Company guidelines
17 suggest the debris can remain on the ground in unmaintained areas. The Company is
18 in the process of working with customers on an as needed basis to address these
19 customer demands. Although this additional work arises most often in the case of
20 Task 1 work, it also is increasing the cost of Task 2 and Task 3 work.

21 **Q. PLEASE SUMMARIZE THE COMPANY’S PAST SEVEN YEARS OF**
22 **EXPERIENCE WITH ITS 2010 AND 2015 VEGETATION MANAGEMENT**
23 **PLANS.**

1 A. It is worth emphasizing the Plan has evolved since it originally was designed in 2009
2 as Kentucky Power built on lessons learned. Based on knowledge and experience
3 gained each year as the plan has unfolded Kentucky Power has improved its processes
4 and is better able to estimate costs. Kentucky Power is extremely pleased with the
5 results achieved for our customers to date, and for the expected improvements in the
6 years to come. These results in part have come about because of Commission-
7 approved modifications such as the Company proposes below.

8 **3. 2017 DISTRIBUTION VEGETATION MANAGEMENT PLAN**

9 **Q. WHAT CHANGES IS KENTUCKY POWER PROPOSING TO ITS 2015**
10 **VEGETATION MANAGEMENT PLAN?**

11 A. The Company is proposing three modifications:

- 12 ➤ Kentucky Power estimates that its Task 1 work will be completed no later than
13 March 31, 2018, or nine months earlier than originally projected. It also
14 estimates that Task 2 work will be completed by December 31, 2018. This is
15 six months earlier than projected in connection with the 2015 distribution
16 Vegetation Management Plan.
17
18 ➤ Kentucky Power proposes reducing, effective Cycle 1 of the Company January
19 2018 billing cycle, the distribution Vegetation Management Plan O&M
20 expense in current base rates from \$27,661,060 to \$21,465,163.
21
22 ➤ Kentucky Power also proposes two amendments to its vegetation management
23 and planning reporting requirements. Neither modification will change the
24 Company's overall vegetation management obligation, but will provide the
25 Company with the flexibility necessary to manage its program in the most cost
26 effective manner without limiting the Commission's ability to hold the
27 Company to its obligations under the program.
28

29 **Q. EXPLAIN THE BASIS FOR THE COMPANY'S CURRENT ESTIMATE**
30 **THAT IT CAN COMPLETE ITS TASK 1 AND TASK 2 WORK BY MARCH**
31 **31, 2018 AND DECEMBER 31, 2018 RESPECTIVELY?**

1 A. Both estimates are based on the work rates attained by the Company over the past two
2 calendar years. In addition, during 2017 Kentucky Power anticipates focusing its
3 vegetation management resources on performing the more expensive Task 1 work. By
4 doing so, Kentucky Power projects that it will complete 1,334 miles of Task 1 work in
5 2017 (an increase from the 1,094 miles completed in 2016) at a cost of \$23,656,060.
6 That would leave approximately 144 miles of Task 1 work to be completed in the first
7 quarter of 2018 at an estimated cost of \$2,419,648.

8 Coincident with the acceleration of Task 1 work, Kentucky Power projects that
9 it will complete 313 miles of Task 2 work (compared to 711 miles completed in 2016)
10 at a cost of \$4,005,000. That leaves 1,479 miles of Task 2 work to be completed in
11 2018 at a cost of \$19,219,118. By shifting Task 1 resources to Task 2 work as Task 1
12 work nears completion, Kentucky Power estimates it can increase its Task 2 work rate
13 and complete the remaining Task 2 work by December 31, 2018.

14 Based on this schedule, distribution Vegetation Management Plan O&M
15 expenditures will total \$27,661,060 in 2017 as shown on Table 9 below compared to
16 the total O&M expenditures in base rates of \$27,661,060 as approved in Case No.
17 2014-00396. Under Kentucky Power's 2017 distribution Vegetation Management
18 Plan, total distribution Vegetation Management Plan O&M expenditures in 2018 will
19 total \$21,638,766 as shown in Table 9 below.

20 Q. **HOW DOES KENTUCKY POWER PROPOSE TO IMPLEMENT ITS 2017**
21 **VEGETATION MANAGEMENT PLAN IF IT IS APPROVED?**

22 A. After completing Task 2 work no later than December 31, 2018, Kentucky Power will
23 begin Task 3 (Five-Year Maintenance Cycle) work effective January 1, 2019. The

1 Management Plan costs. The projected average annual savings of \$1,616,801 with a
2 completed six-year cycle, when compared to the projected annual costs for a
3 completed five-year cycle, are only 7.5 per cent of the completed five-year cycle
4 average annual costs. The price to be paid for these savings is the risk that the
5 increased growth between cycles (the average years of growth between maintenance
6 cycles will increase from 4.94 years of growth to 5.65 years of growth) will produce
7 increased outages inside the rights-of-way. If so, Kentucky Power and its customers
8 will be giving back some of the hard-earned reliability improvements purchased over
9 the past seven years. The aggregate total cost of a complete six-year Task 3 cycle is
10 \$120,413,133. The aggregate total cost of a complete five-year Task 3 cycle is
11 \$108,428,279. Thus, although the annual cost of the six-year cycle is less than the
12 annual cost of a five-cycle, the extra year of work required for the six-year cycle
13 means the total aggregate cost of a complete six-year cycle is \$11,984,854
14 (approximately 11 per cent) more than the total aggregate cost of a complete five-year
15 cycle.

16 **Q. YOU ALSO INDICATE THE COMPANY PROPOSES TWO CHANGES TO**
17 **ITS VEGETATION MANAGEMENT REPORTING REQUIREMENTS.**
18 **WHAT ARE THEY?**

19 A. Kentucky Power currently is required to seek Commission approval prior to deviating
20 more than ten percent from its projected annual vegetation management Operation and
21 Maintenance expenditures in any of the Company's three districts, or on a company-
22 wide basis. The Company proposes to modify the pre-approval requirement for
23 deviations so that pre-approval is required only when the Company's overall annual

1 expenditures are anticipated to deviate from its forecasted projections by more than
2 ten percent. Second, the Company currently is required to plan and manage its
3 vegetation management work and expenditures on two different yearly bases: the
4 vegetation management year, which runs from July 1 through June 30, and a calendar
5 year. The Company proposes to manage its vegetation work and expenditures only on
6 a calendar year basis.

7 **Q. PLEASE EXPLAIN WHY KENTUCKY POWER IS SEEKING APPROVAL**
8 **TO ELIMINATE THE REQUIREMENT THAT THE COMPANY SEEK**
9 **PRIOR COMMISSION APPROVAL FOR DEVIATIONS OF MORE THAN**
10 **TEN PERCENT IN ANY DISTRICT'S ANNUAL PLANNED VEGETATION**
11 **MANAGEMENT EXPENDITURES.**

12 A. Kentucky Power's vegetation management contractors maintain local crews in each of
13 its three districts. To the greatest extent possible, the local contractor crews are
14 assigned to work only in their home district. Doing so limits the extra expense
15 required to transport crews longer distances to work locations in other districts, to
16 house and feed the crews where required for out-of-district work, as well as the
17 productivity lost to longer travel times. Balanced against this is the need to provide
18 regular work to its contractors' crews so that the Company's contractors can retain
19 their trained and experienced crews. In addition, Kentucky Power sometimes is
20 required to shift contractor crews to other districts to address unexpected conditions in
21 a district in which the contractor's crew is not based. Finally, Kentucky Power
22 sometimes is required to bring in additional resources in the form of roving crews

1 (crews not assigned to a particular district) to address unanticipated conditions or
2 otherwise to meet its mileage goals.

3 The additional expenses associated with the use of roving crews, the assignment of
4 locally-based crews to other districts, as well as other measures required to meet the
5 mileage targets for each district can result in a more than ten per cent deviation in
6 planned district expenditures.

7 **Q. HAS KENTUCKY POWER FACED THIS PROBLEM SINCE THE 10%
8 DISTRICT “TRIGGER” WAS AGREED TO BY THE COMPANY?**

9 A. Yes, the Company was required to seek a deviation for 2016. In the first quarter of
10 2016, Kentucky Power recognized that because of differences in vegetation density
11 among the districts, differences in primary distribution line miles in each of the
12 districts, and differences in the number of crews required to be added and trained in
13 each of the districts, its September 2015 work plan for 2016 would result in Kentucky
14 Power completing the Task 1 work in the Company’s Hazard District well in advance
15 of the projected completion dates for Task 1 work in its remaining two districts. This
16 in turn would require, unless the district expenditure targets were modified, the
17 Company’s contractors to lay-off a portion of their experienced and trained local work
18 force. Instead of losing these experienced workers, and the hard-earned efficiencies
19 resulting from that experience, Kentucky Power determined that shifting a portion of
20 the local workforce from the Hazard District (which had completed 81% of its Task 1
21 work) to the adjoining Pikeville District (which had completed 64% of its Task 1
22 work) would allow the Company’s contractors to retain much of their local work force
23 while enabling the Company’s three districts to complete Task 1 work at

1 approximately the same time. But doing so would result in deviations of more than
2 10% from Kentucky Power's projected vegetation management expenditures for both
3 the Pikeville and Hazard Districts. Accordingly, in April 2016 the Company sought
4 (and was granted) authority to increase its projected 2016 Pikeville District vegetation
5 management Operation and Maintenance expenditures by 11% and to reduce its plan
6 Hazard District expenditures by 23%.

7 **Q. ARE YOU SUGGESTING THAT THE COMMISSION DID NOT ACT**
8 **EXPEDITIOUSLY ON THE COMPANY'S APPLICATIONS?**

9 A. No. To the contrary, the Commission acted quickly on the Company's April 2016
10 request. Nevertheless, while an application is being prepared and pending the
11 Company may be required to scale back efforts in one district, or postpone ramping up
12 efforts in the other districts. Equally important, even with its best efforts and closest
13 scrutiny, the Company may deviate from its district projections by more than 10%.

14 **Q. IS THE COMPANY PROPOSING THAT IT BE PERMITTED TO DEVIATE**
15 **FROM ITS ANNUAL WORK PLAN EXPENDITURE TARGET WITHOUT**
16 **LIMITATION?**

17 A. No. Kentucky Power recognizes the Commission's concern that the Company meet
18 its overall vegetation management plan spending obligation, particularly where base
19 rates are specifically designed to provide funding for the work. The Company also
20 recognizes the Commission should be reasonably informed of any significant
21 deviations in Kentucky Power's annual October 1 of the preceding year work plan.
22 But requiring Kentucky Power to manage annual expenditures on a per-district basis
23 so as not to deviate more than ten per cent does not appear to be the most efficient

1 means of doing so for either the Commission or the Company. Kentucky Power
2 requires the flexibility to shift funds between districts to meet unanticipated
3 developments and to ensure it is able to retain an experienced contractor work force.
4 Kentucky Power requests that the requirement to seek leave to deviate be limited to
5 those instances where it anticipates deviating on a Company-wide basis by plus or
6 minus ten per cent (\$2,147,000) from the \$21,465,163 to be embedded in base rates.
7 Because the Company will continue to file its work plans and annual reports as
8 required by the Commission's June 22, 2015 Order in Case No. 2014-00396, the
9 Commission can monitor and address any significant disparities on a district basis.

10 **Q. WHY IS THE COMPANY REQUESTING AUTHORITY TO MANAGE ITS**
11 **VEGETATION MANAGEMENT PROGRAM ON A CALENDAR YEAR?**

12 A. The Company requirement was imposed at the request of Kentucky Power. The
13 provision's purpose was to allow the Company to align its work and funding with the
14 mid-year increased funding. Because the requested increased funding for the 2017
15 plan, if approved, will become effective at the beginning of a calendar year (Cycle 1
16 of the January 2018 billing cycle), a separate vegetation management year is no longer
17 required. In addition, Kentucky Power develops work plans and forecasts on a
18 calendar year basis. This also aligns with other external reporting requirements such
19 as the FERC Form 1, which are based the calendar year.

1 4. **THE ONE-WAY BALANCING ACCOUNT AND THE COMPANY'S**
2 **PROPOSED ADJUSTMENT TO ITS TEST YEAR VEGETATION**
3 **MANAGEMENT O&M EXPENSES**

4 **Q. YOU MENTIONED EARLIER THAT THE SETTLEMENT AGREEMENT**
5 **THAT ESTABLISHED THE 2015 VEGETATION MANAGEMENT PLAN**
6 **INCLUDED CERTAIN RATE-RELATED PROVISIONS. WHAT ARE THEY?**

7 A. The 2015 plan also includes a one-way balancing account. Under the 2015 plan, the
8 total annual vegetation management Operation and Maintenance expenses included in
9 base rates is \$27,661,060 per year. For purposes of the one-way balancing account,
10 the vegetation management year ends June 30 of each year. Any annual shortfall or
11 excess in vegetation management Operation and Maintenance expenditures is added
12 or subtracted, respectively, from scheduled future expenditures. The Company is
13 required to defer on its books as a regulatory liability any annual shortfall. Any over-
14 expenditure is credited to following years' obligations, but otherwise is not
15 recoverable by the Company.

16 **Q. DID THE SETTLEMENT AGREEMENT AS APPROVED BY THE**
17 **COMMISSION MAKE FURTHER PROVISION FOR THE ONE-WAY**
18 **BALANCING ACCOUNT?**

19 A. Yes. If Kentucky Power's cumulative vegetation management Operation and
20 Maintenance expenditures for the four vegetation management years ended June 30,
21 2019 totaled less than \$110,640,240 (\$27,661,060 multiplied by four vegetation
22 management years), the shortfall is required to be refunded to the Company's
23 customers or used to reduce the Company's revenue requirement in the next base rate
24 case filed after that date.

1 **Q. WHAT IS THE BALANCE OF THE ONE-WAY VEGETATION**
2 **MANAGEMENT OPERATION AND MAINTENANCE BALANCING**
3 **ACCOUNT?**

4 A. There has only been one complete vegetation management year since the one-way
5 balancing account was established effective July 1, 2015. For the 12 months ended
6 June 30, 2016, Kentucky Power Power's Operation and Maintenance expenses of
7 \$27,747,265 were \$86,205 above target. For the 20 months ended February 28, 2017,
8 Kentucky Power's distribution vegetation management Operation and Maintenance
9 expenditures totaled \$45,969,144 or 99.71% of the amount required under the 2015
10 vegetation management plan. This \$132,623 difference for the first 20 months of the
11 2015 Vegetation Management Program represents slightly less than one day of
12 vegetation management program O&M spending. Kentucky Power anticipates it will
13 continue to meet its projected spending targets.

14 **Q. DID THE 2015 SETTLEMENT AGREEMENT INCLUDE ANY ADDITIONAL**
15 **RATE-RELATED FEATURES?**

16 A. Yes. The agreement also provided that upon the completion of Task 1 and Task 2
17 work, and the initiation of Task 3 work (which the Company estimated would be
18 approximately the first billing cycle of the July 2019 billing), certain of the
19 Company's base retail rates would be reduced by an annual amount of \$11,780,408.
20 Specifically, the agreement provided:

21 Beginning cycle 1 of the July 2019 billing cycle, which is the approximate
22 date the Company anticipates commencing the five-year maintenance
23 cycle, and until the Company's base rates are established in the first base
24 rate case after June 30, 2019, the Company shall reduce the base retail
25 rates for those tariff classes with primary and secondary service offerings
26 by \$11,780,408. The reduction shall be allocated solely to tariff classes

1 with primary and secondary service offerings, and in the same fashion as
2 the \$11,655,900 increase in revenue requirements to fund the Distribution
3 Vegetation Management Program described in this paragraph 8 was
4 allocated, as shown on **EXHIBIT 9**.

5 The purpose of the provision was to allow the customers to capture without the
6 necessity of a new rate proceeding the O&M savings following the transition in July
7 2019 to Task 3 only work. That is no longer required as a result of this filing.
8 Kentucky Power proposes to reduce its rates effective Cycle 1 of the January 2018
9 billin cycle. As a result, O&M expenses are being reduced 24 months early, although
10 the reduction is less than was forecast in 2015.

VI. SMART GRID

11 **Q. PLEASE DESCRIBE “SMART GRID” INVESTMENTS.**

12 A. Smart grid technology uses advanced information tools to improve the efficiency,
13 reliability, and safety of electric distribution system. In its April 13, 2016 order in
14 Case No. 2012-00428, the Commission directed each utility in the Commonwealth
15 subject to its jurisdiction to identify its Smart Grid investments in each rate case. The
16 information provided in this section fulfills the Commission’s directive.

17 **Q. WHAT SMART GRID INVESTMENTS HAVE BEEN PLACED IN SERVICE**
18 **SINCE THE LAST BASE CASE?**

19 A. Kentucky Power installed Volt/Var Optimization technology on 24 circuits. The
20 Volt/VAR technology is in test operation and energy reductions are being evaluated.
21 Kentucky Power also installed Distribution Automation Circuit Reconfiguration
22 technology on nine circuits and is in the process of completing the installation on 19
23 additional circuits. Kentucky Power utilizes a Distribution Management System that

From The Direct Testimony of Everett G. Phillips
On Behalf of Kentucky Power
Case No. 2020-00174

1 **Q. PLEASE DESCRIBE KENTUCKY POWER’S MAJOR DISTRIBUTION**
2 **RELIABILITY AND CAPACITY ADDITION PROGRAM.**

3 A. Kentucky Power identifies areas where the increasing or shifting demand for electricity
4 is approaching the limit of the distribution system’s existing load capacity. These
5 specific projects re-conductor portions of the existing distribution circuits or re-
6 configure portions of a circuit. The expansion of the distribution system to serve new
7 customers may also result in the upgrade or replacement of distribution facilities to
8 maintain and enhance reliable service to Kentucky Power’s customers.

9 **Q. BRIEFLY PROVIDE AN OVERVIEW OF KENTUCKY POWER’S CURRENT**
10 **DISTRIBUTION VEGETATION MANAGEMENT PROGRAM.**

11 A. Kentucky Power’s vegetation management practices are conducted in accordance
12 with standards established by the American National Standards Institute (“ANSI”),
13 the Occupational Safety and Health Administration (“OSHA”), and the National
14 Electrical Safety Code (“NESC”). These standards govern pruning and removing
15 trees; safety and worker protection; work clearance and training requirements; and
16 safety clearance guidelines.

17 The Company is currently in the second year of its Commission-approved
18 five-year cycle-based Distribution Vegetation Management Program. The Kentucky
19 Power service territory is located in an area with rugged terrain and dense forests. Of
20 all areas within the Commonwealth, Kentucky Power has some of the most difficult
21 and challenging terrain, which requires more frequent maintenance to ensure
22 consistent reliability throughout the Company’s service territory. The five-year
23 cycle-based Program has seen improved inside the rights-of-way tree-related

1 distribution circuit reliability through more frequent re-clearing of rights-of-way.
2 Later, I provide more detail concerning the Company's Distribution Vegetation
3 Management Program.

4 **Q. PLEASE DESCRIBE THE TYPES OF CAPITAL INVESTMENTS**
5 **KENTUCKY POWER IS MAKING TO IMPROVE AND MAINTAIN**
6 **RELIABILITY.**

7 A. Each year Kentucky Power completes capital projects that can be classified under
8 several general categories:

- 9 1. Asset Improvement: Asset Improvement projects include replacement of
10 obsolete equipment and other aging infrastructure, as well as the addition
11 of new assets that support projects associated with grid modernization.
12 This project category also has a significant impact on reducing the
13 duration of customer outages and improving customer reliability.
- 14 2. Customer Service: These projects support new customer facilities, and
15 include upgrading existing customer facilities, meter installations, and
16 other customer requirements.
- 17 3. Forestry: Forestry capital projects generally involve widening of rights-
18 of-way, the removal of trees greater than 18 inches in diameter within or
19 outside the rights-of-way, as well as the removal of "cycle buster trees."
20 "Cycle Buster Trees" are trees greater than 18 inches in diameter that must
21 be trimmed or removed before the circuit is due for its next cycle.
- 22 4. Planning Capacity: These projects facilitate the increase of load in areas
23 of growth in the service territory. These projects include increasing the

1 size of transformers in existing distribution stations and constructing new
2 stations to serve customers.

3 5. Reliability: Reliability capital projects are specific projects that target
4 known reliability issues affecting both groups of customers and entire
5 circuits. These projects may also be used to add capacity to the system,
6 and include new circuits or stations, additions to existing facilities, and
7 replacing existing assets with higher capacity assets such as re-
8 conducting an existing line with an increased conductor size.

9 6. System Restoration: These projects replace assets that have failed. Capital
10 projects completed during service restoration are typical system
11 restoration projects, and include replacing poles and associated
12 equipment, re-conducting full length spans, and replacing transformers
13 damaged during a storm or weather-related event.

14 7. Other: These include miscellaneous projects, as well as distribution
15 projects that support other business units. These include distribution
16 upgrades made in response to a transmission system change.

17 **Q. PLEASE DESCRIBE THE MAJOR CATEGORIES OF THE COMPANY'S**
18 **DISTRIBUTION OPERATION AND MAINTENANCE ("O&M") EXPENSE.**

19 A. Kentucky Power's annual distribution O&M expense includes forestry, system
20 restoration, customer service, asset improvement, reliability, and other activities.

1 **Q. WHAT WAS KENTUCKY POWER’S DISTRIBUTION O&M EXPENSE FOR**
 2 **THE TEST YEAR?**

3 A. Kentucky Power’s unadjusted, actual Distribution Operation and Maintenance
 4 Expense for the Test Year ending March 31, 2020 was \$42,690,617 as shown in Table
 5 3 below.

6 **Q. HOW DOES THE TEST YEAR LEVEL OF DISTRIBUTION O&M EXPENSE**
 7 **COMPARE WITH HISTORICAL LEVELS FOR KENTUCKY POWER?**

8 A. Table 3 provides the Distribution O&M expense levels for 2017 through 2019 and
 9 the test year. Total O&M expenses have decreased by 12.9%. A majority of this has
 10 been due to the implementation of the five-year cycle in forestry. The O&M expenses
 11 remained relatively stable or increased slightly, except for forestry where the benefits
 12 of the full implementation of the five-year cycle based Program are being realized.

**Table 3 - Kentucky Power Distribution
 Operation and Maintenance Expenses by Year**

Project Category	2017	2018	2019	Test Year
Asset Improvement	\$2,523,921	\$2,708,206	\$2,973,793	\$3,183,606
Customer Service	\$800,656	\$871,611	\$1,066,761	\$974,706
Forestry	\$27,846,398	\$21,791,012	\$21,466,588	\$21,880,891
Other	\$6,495,890	\$7,363,309	\$7,896,822	\$7,381,792
Reliability	\$391,318	\$427,936	\$712,595	\$706,508
System Restoration	\$8,505,427	\$8,443,170	\$7,359,676	\$6,496,558
Amortization of Major Storm Deferral	\$2,429,196	\$2,084,103	\$2,066,556	\$2,066,556
Grand Total	\$48,992,806	\$43,689,347	\$43,542,791	\$42,690,617

13 **Q. PLEASE FURTHER DESCRIBE THE MAJOR COMPONENTS OF THE**
 14 **DISTRIBUTION O&M EXPENSE INCLUDED IN THE TEST YEAR.**

15 A. The largest Test Year O&M expense is Forestry expense in connection with the
 16 implementation of the Company’s Distribution Vegetation Management Program

1 approved by the Commission in Case No. 2017-00179. This level of Forestry expense
2 is expected to increase slightly over current levels, but remain significantly below
3 historical levels, until the first five-year cycle is completed at the end of 2023.

4 The second largest expense over the period, System Restoration expense, can
5 vary from year-to-year, and is largely dependent on weather events during a particular
6 year. Customer Service Operation and Maintenance expenditures support customer
7 programs and address customer issues. The Asset Improvement expense represents
8 the Operation and Maintenance expense associated with capital additions such as the
9 replacement of poles, towers, fixtures, conductors, line transformers and station
10 equipment. Finally, "other" contains miscellaneous projects and overheads.

IV. VEGETATION MANAGEMENT

1. DEPLOYMENT OF THE COMPANY'S DISTRIBUTION VEGETATION MANAGEMENT PROGRAM

11 **Q. DID THE COMPANY COMPLETE ITS TRANSITION FROM A**
12 **PERFORMANCE-BASED TO A CYCLE-BASED VEGETATION**
13 **MANAGEMENT PROGRAM?**

14 A. Yes. By the end of 2018, the Company completed the initial and interim tasks
15 necessary to transition from a performance-based to a cycle-based vegetation
16 management program. The initial task work was completed by March 31, 2018, with
17 the exception of two spans where the Company coordinated the work with a required
18 scheduled outage to perform maintenance work at a nearby gas compressor station.
19 The interim task work was completed by December 31, 2018. The final 2017 and 2018
20 transition costs will be discussed later in my testimony.

1 **Q. PLEASE DESCRIBE KENTUCKY POWER'S VEGETATION**
2 **MANAGEMENT PROGRAM.**

3 A. The Company's Vegetation Management Program is a comprehensive program that
4 includes multiple components to ensure the reliability of the Company's distribution
5 system by minimizing outages due to contact with vegetation. The first component of
6 the program is a cycle-based maintenance component that plans for the clearing of all
7 distribution circuit rights-of-way once every five years. This activity addresses
8 approximately twenty percent of the total number of line miles each year, so that over
9 the course of five years, every primary line mile or circuit rights-of-way will be cleared
10 from end to end. A second component of the program consists of spraying the circuit
11 rights-of-way with a growth inhibitor to retard the growth of vegetation. Some types
12 of vegetation can quickly regrow to pre-cut levels within the five-year cycle, so the
13 growth inhibitor supplements the rights-of-way clearing. This activity also helps to
14 prevent vegetation from growing into the distribution circuits within the five-year
15 cycle. The third component is the removal of danger trees from outside the rights-of-
16 way. As mentioned earlier, danger trees are trees outside the rights-of-way that have
17 the potential of falling into the distribution circuit because they have been weakened
18 due to physical damage, disease, soil erosion, or have died.

19 **Q. PLEASE DESCRIBE THE ACTIVITIES THAT COMPRISE THE**
20 **DISTRIBUTION VEGETATION MANAGEMENT PROGRAM AND THEIR**
21 **RELATIVE COST.**

22 A. Cycle maintenance activity constitutes approximately 85% of cost of the Vegetation
23 Management Program. Work tasks include door-to-door planning with property

1 owners, brush removal, trimming of trees, tree removals, and auditing work performed.
2 Nearly all of this work is contracted through a third party working on behalf of
3 Kentucky Power.

4 Ground and aerial spray activity constitutes approximately 11% of the
5 Company's Vegetation Management Program cost. Beginning in 2019, Kentucky
6 Power began transitioning from foliar spraying to cut stubble application of herbicide.
7 It was able to do so because prior foliar spraying reduced the amount of vegetation in
8 the rights-of-way. Because cut stubble spray application can be performed at the time
9 the clearing is performed, the Company anticipates it will be able to eliminate the costs
10 attendant to a second trip to the site to spray the foliage when it returns. It also allows
11 Kentucky Power to control brush more effectively and to better address the rapid
12 regrowth of brush.

13 The last two activities, internal and unscheduled maintenance, are
14 approximately 4% of the Company's financial cost of the Vegetation Management
15 Program. Of the 4%, internal expenses are approximately 2.5%. Work tasks associated
16 with internal expenses include project management, oversight, and field audits for
17 safety and work being cleared to contract specifications. Unscheduled maintenance
18 expenses are approximately 1.5% of the 4% and work associated with this activity
19 include off cycle maintenance of vines and customer yard trees where trimming was
20 not able to provide five years of clearance.

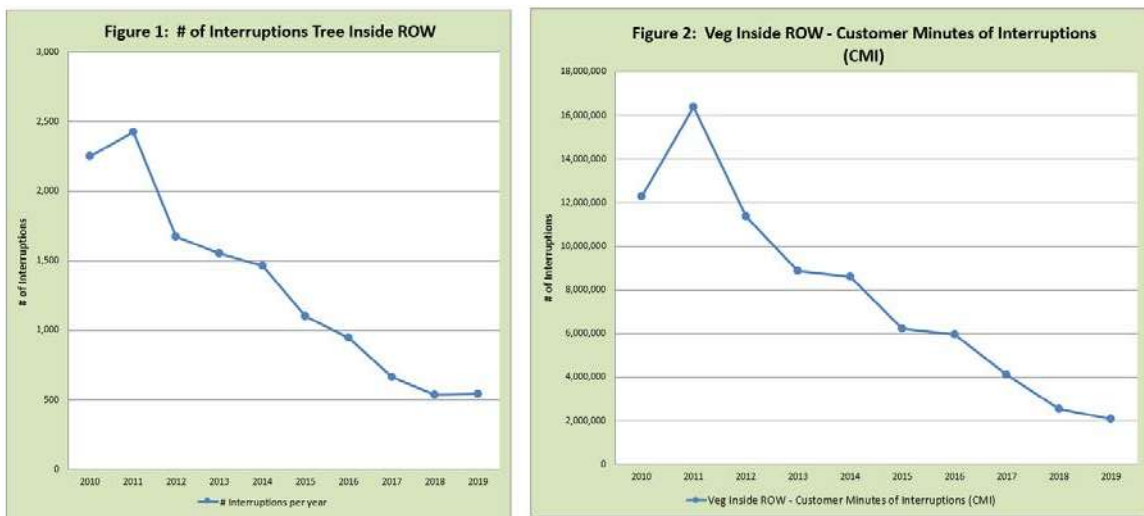
1 **Q. DOES THE VEGETATION MANAGEMENT PROGRAM PROVIDE**
 2 **IMPROVED AND SUSTAINABLE RELIABILITY FOR THE COMPANY’S**
 3 **CUSTOMERS?**

4 A. Yes. Kentucky Power’s Vegetation Management Program O&M expenses focus on
 5 re-clearing and maintaining the Company’s rights-of-way. As a result, the best
 6 measure of the effect of Kentucky Power’s vegetation management efforts is the
 7 number of customer interruptions, total customers affected, as well as customer minutes
 8 interrupted, by trees and vines within the Company’s rights-of-way. As shown on
 9 Table 4 below, the number of incidents of customer interruptions as a result of vines
 10 and trees in the Company’s rights-of-way declined 78% from a high of 2,426 in the
 11 year ended December 2011 to a low of 538 in the year ended December 2018.

Table 4 – Summary Of Inside Rights-Of-Way-Related Outages

Year	Number of Interruptions	Total Customers Affected	Veg Inside ROW - Customer Minutes of Interruptions (CMI)
2010	2,250	64,360	12,280,664
2011	2,426	72,074	16,387,958
2012	1,674	43,934	11,369,680
2013	1,555	48,099	8,866,856
2014	1,462	36,471	8,617,318
2015	1,102	30,040	6,236,943
2016	943	28,713	5,949,862
2017	660	18,911	4,098,559
2018	538	12,391	2,539,186
2019	544	13,218	2,072,958

1 Consistent with this trend, the number of customers affected by trees and vines within
 2 the rights-of-way improved 82% with a reduction from 72,074 in 2011 to 13,218 last
 3 year. Finally, customer minutes interrupted as a result of trees and vines in the rights-
 4 of-way, which measure the total impact of the interruptions, declined from 16,387,958
 5 minutes in 2011 to 2,072,958 minutes in the year ended December 31, 2019. That
 6 represents an 87% improvement between 2011 and 2019. These improvements are
 7 shown graphically in the two figures below:



8
 9 The trend over a ten-year period, such as shown in Table 4, clearly shows the success
 10 the Company and its customers are enjoying from the investment in distribution
 11 vegetation management.

12 **Q. PLEASE EXPLAIN THE FLATTENING IN RECENT YEARS OF THE**
 13 **DECLINE IN THE NUMBER OF INTERRUPTIONS AND CUSTOMER**
 14 **MINUTES OF INTERRUPTIONS SHOWN IN THE TWO FIGURES ABOVE.**

15 A. Several factors have led to the flattening of the improvements. First, the Company has
 16 completed end-to-end clearing of the entire primary distribution system and gained
 17 control of its rights-of-way so that the reliability benefits of doing so are already

1 reflected. Second, with the primary distribution grid cleared and now being
2 maintained, outages on secondary distribution lines constitute a greater portion of total
3 outages. The Company's distribution vegetation management work has less effect on
4 secondary distribution lines because secondary lines, including service to the house
5 attachments, are positioned lower on the poles and are more likely to be affected by
6 customer-planted trees. Finally, there is an "irreducible minimum" of outages related
7 to customers who will not permit the Company to remove trees from their property.

8 **Q. DO THE VALUES IN TABLE 4 REFLECT OUTAGES CAUSED BY MAJOR**
9 **STORM EVENTS?**

10 A. They do not. However, I am comfortable the severity of outages related to major event
11 storms has been lessened by the success of Kentucky Power's Distribution Vegetation
12 Program. For example, a major storm occurred on April 12, 2020 that brought wind
13 speeds of 79 miles per hour to the Company's service territory. While there were
14 several outages due to trees and other items from outside the rights-of-way, there was
15 an 18% reduction in customer minutes interrupted, and a 12% reduction for customers
16 interrupted due to trees inside the rights-of-way as compared to a storm with 60 miles
17 per hour wind speeds on May 8, 2009. The May 2009 storm occurred prior to the
18 initiation of the 2010 Vegetation Management Plan.

19 **Q. PLEASE SUMMARIZE THE COMPANY'S VEGETATION MANAGEMENT**
20 **EFFORTS TO DATE.**

21 A. The Company has successfully addressed outages caused by trees inside the rights-of-
22 way which has greatly improved service for our customers. The appropriate planning
23 and scheduling of individual circuits during the initial re-clear was carefully defined to

1 try and maximize the improvements for all customers across the Company. The
2 Company made necessary adjustments or modifications to its vegetation management
3 plan, after appropriate approvals, when confronted with unforeseen challenges in
4 connection with the initial re-clear. The Company has gained valuable knowledge
5 allowing it to improve efficiencies, clear necessary right-of-way widths, and perform
6 herbicide treatments. The completion of the initial re-clear work helped stabilize
7 vegetation management expenditures.

8 **Q. HAS KENTUCKY POWER BEEN MAKING CAPITAL EXPENDITURES IN**
9 **SUPPORT OF ITS DISTRIBUTION VEGETATION MANAGEMENT**
10 **PROGRAM?**

11 A. Yes. Before I provide the specifics, I should note that in addition to expansion of rights-
12 of-way and the removal of trees outside the Company's rights-of-way, the removal of
13 trees within the rights-of-way larger than 18 inches in diameter is accounted for as a
14 capital expenditure. With this caveat, Kentucky Power's forestry capital (capital work
15 in progress expenditures related to vegetation management) since the last rate case
16 totaled \$28.2 million.

17 **Q. PLEASE DESCRIBE THE INCREASE IN CAPITAL EXPENDITURES.**

18 A. The Capital expenditures beginning March 2017 through March 2019 are split into two
19 components. Capital expenditures for "Associated Capital Re-Clear," which includes
20 capital expenditures that occur in connection with operational maintenance re-clearing,
21 such as removal of cycle-buster trees over eighteen inches in diameter at breast height,
22 have remained relatively level. The increase in capital widening in recent years reflects
23 the Company's increased focus on right-of-way widening efforts to address the

growing outages resulting from trees outside the rights-of-way. For example, SAIDI increased for trees outside the rights-of-way from 185.2 in June 2018 to 272.1 in June 2019 (excluding JMEDs).

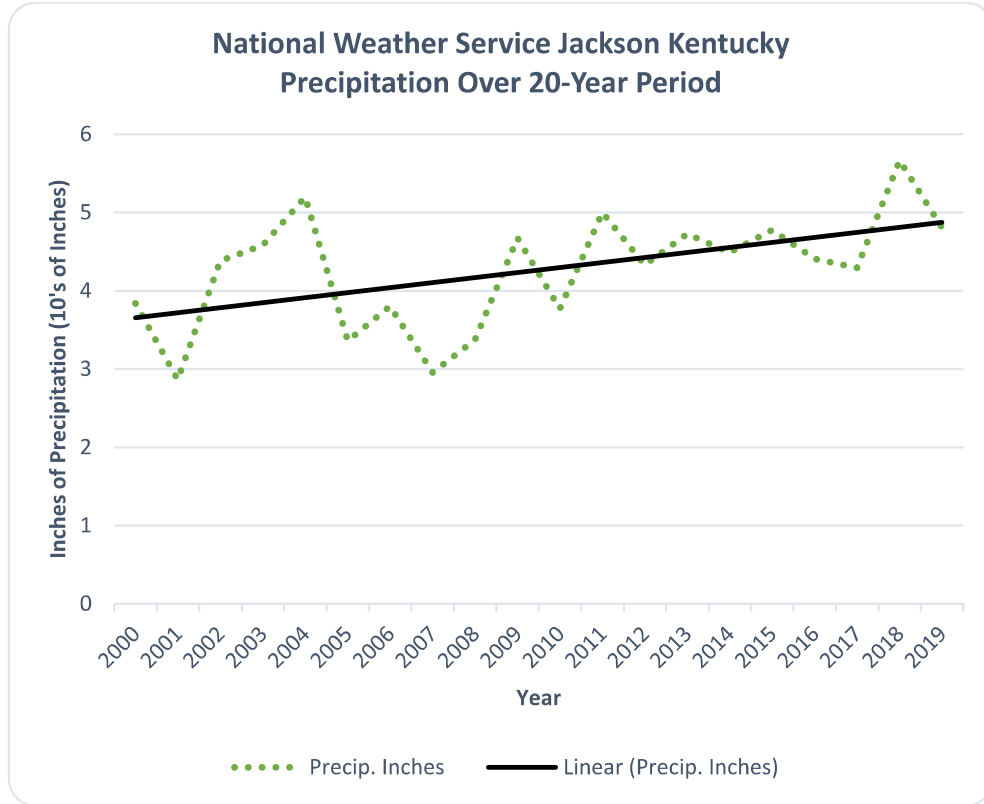
Q. WHY HAS THERE BEEN AN INCREASE IN OUTAGES CAUSED BY TREES OUTSIDE THE RIGHTS-OF-WAY?

A. Over the last few years, there has been an above-average amount of rainfall that has contributed to the increase in the number of outages caused by trees outside the rights-of-way. Precipitation data from the National Weather Service for Jackson, Kentucky for the years of 1981 to 2010 shows a monthly average rainfall of 4.03 inches per month, or an annual normal of 48.34 inches of rainfall. By contrast, the average annual precipitation for the most recent five-year period (2015-2019) was 57.49 inches, while the average annual precipitation for the most recent three-year period (2017-2019) was 59.07 inches.

Figure 3: Jackson, Kentucky National Weather Service Historical Data

30 Yr Normal Precip (1981 - 2010) Jackson Area, KY		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Norm	Monthly Avg. 30 Yr Norm	
		3.61	3.75	4.12	3.83	5.20	4.70	4.65	3.69	3.46	3.19	3.96	4.18	48.34	4.03	
Monthly Total Inches Precipitation for Jackson Area, KY	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Year	Mntly Avg.
	2000	2.63	3.53	1.94	4.97	4.33	6.80	5.69	4.38	4.92	1.07	1.47	4.35	46.08	2000	3.84
	2001	2.50	3.72	2.17	1.69	4.39	4.19	6.43	2.41	1.09	1.41	1.82	2.55	34.37	2001	2.86
	2002	4.09	1.24	7.96	4.11	5.23	4.98	5.50	1.72	3.48	6.39	3.61	4.28	52.59	2002	4.38
	2003	2.10	7.88	1.47	5.14	5.98	7.54	3.95	5.12	4.33	2.20	5.49	3.78	54.98	2003	4.58
	2004	4.23	3.77	3.87	4.01	10.78	6.18	7.02	2.39	7.55	4.96	4.37	3.27	62.40	2004	5.20
	2005	5.12	3.03	3.52	7.47	2.50	2.78	4.08	3.92	0.51	1.57	2.66	3.18	40.34	2005	3.36
	2006	5.57	1.85	2.89	4.57	3.61	3.24	3.87	3.69	6.39	5.49	2.43	2.03	45.63	2006	3.80
	2007	2.83	1.20	2.71	3.22	1.82	2.15	4.05	2.64	2.49	3.80	3.37	5.18	35.46	2007	2.96
	2008	2.46	3.41	4.14	4.00	3.24	3.94	6.13	1.16	0.67	1.46	3.03	6.86	40.50	2008	3.38
	2009	5.80	1.73	3.52	3.64	9.22	7.03	6.40	3.55	4.88	3.54	0.80	5.96	56.07	2009	4.67
	2010	4.27	3.11	2.43	2.61	7.92	5.60	3.34	3.51	2.05	1.68	5.77	2.97	45.26	2010	3.77
	2011	2.72	3.97	4.74	10.20	6.69	5.49	6.02	3.07	3.20	4.25	5.48	4.18	60.01	2011	5.00
	2012	4.86	3.90	4.07	2.67	4.20	1.91	7.39	4.75	6.77	4.24	0.84	6.39	51.99	2012	4.33
	2013	5.73	1.91	4.63	3.70	4.23	6.36	6.62	10.04	1.27	2.13	3.01	7.09	56.72	2013	4.73
	2014	3.15	4.47	5.51	5.43	2.30	3.12	5.77	8.55	2.35	7.77	2.97	2.49	53.88	2014	4.49
	2015	2.12	4.06	6.26	10.29	1.74	7.42	8.87	5.02	2.09	2.40	2.41	4.64	57.32	2015	4.78
	2016	3.29	6.27	2.38	3.82	7.04	5.01	6.35	6.83	1.32	1.51	2.91	6.16	52.89	2016	4.41
	2017	4.71	2.86	4.42	4.02	7.41	6.21	4.13	4.56	3.33	5.29	1.30	3.28	51.52	2017	4.29
	2018	1.92	8.00	6.97	4.12	6.18	4.63	5.06	4.43	9.17	5.12	4.91	7.47	67.98	2018	5.67
	2019	4.26	8.87	2.40	2.80	4.90	8.01	6.97	1.25	0.15	6.01	5.80	6.30	57.72	2019	4.81
20 Yr Average	3.72	3.94	3.90	4.62	5.19	5.13	5.68	4.15	3.40	3.61	3.22	4.62	50.84			
3 Yr Mean ('17 - '19)	3.63	6.58	4.60	3.65	6.16	6.28	5.39	3.41	4.22	5.47	4.00	5.68	59.07			
5 Yr Mean ('15 - '19)	3.26	6.01	4.49	5.01	5.45	6.26	6.28	4.42	3.21	4.07	3.47	5.57	57.49			

Figure 4: National Weather Service – Precipitation of Jackson, Kentucky



1 Above average rainfalls in recent years have led to an increase in insects, pathogens,
2 and root disease affecting trees, and a consequent increase in the weakening and death
3 of trees outside the Company’s rights-of-way. Root disease is exacerbated by soil
4 moisture and temperature. Symptoms are discrete and are difficult to identify and track
5 externally. Root diseases have affected multiple species, all size classes, and are highly
6 prevalent. Non-root diseases, such as Oak Wilt, Hemlock Woolly Adelgid, and White
7 Pine blister rust also increasingly are killing and weakening trees. As of 2016 in
8 Kentucky over 6% of Oak trees are standing dead, 2.8% of hemlocks are standing dead,
9 and over 10% of white pines are standing dead. A standing dead tree is more likely to
10 fall during high wind or other weather events and cause outages. Another contributor
11 to the poor health of the trees outside of the rights-of-way is the Emerald Ash Borer

1 (“EAB”) beetle. Kentucky is home to more than 220 million ash trees.² The
2 destructive EAB infestation began in Kentucky in 2009, and spread throughout
3 Kentucky and has now been discovered in most of Kentucky’s counties.³ Several
4 counties have lost a significant amount of their ash trees to EAB since its arrival. When
5 a tree becomes infested with EAB, it dies within a few years, which makes it much
6 more vulnerable to falling or being blown over into the Company’s facilities and
7 causing customer outages.

8 For these reasons, the Company increased additional widening efforts starting
9 with the Hazard District, which includes some of the Company’s most difficult terrain.

2. **DISTRIBUTION VEGETATION MANAGEMENT PROGRAM: FIVE-YEAR CYCLE**

10 **Q. WHAT IS KENTUCKY POWER PROPOSING FOR ITS CYCLE-BASED**
11 **VEGETATION MANAGEMENT PROGRAM?**

12 A. The Company is proposing two modifications:

- 13 ➤ Kentucky Power proposes adjusting, effective Cycle 1 of the Company’s
14 January 2021 billing cycle, the amount of distribution Vegetation Management
15 Program O&M expense in base rates to reflect the three-year average of the
16 Company’s distribution O&M expenses for the first three-year period (2021-
17 2023) the rates established in this case will be in effect. This is the same
18 methodology used to establish the Company’s current base rates in Case No.
19 2017-00179. Although a slight increase (0.05%) from \$21,465,163 to
20 \$21,586,046 over the amount currently in base rates, the three-year average

² <https://entomology.ca.uky.edu/entfact/kentucky-emerald-ash-borer-eab-resources-updates>

³ Ibid.

1 represents a slightly greater than one percent *reduction* in the three-year
 2 average the Company projected for the same period in Case No. 2017-00179.
 3 With the initiation of the five-year cycle, Kentucky Power has been able to
 4 reduce the projected three-year cost despite substantial increases in contract
 5 labor, much-higher than average rainfall, and the costs associated with customer
 6 demands that trees, tree trimmings, and brush be removed from the customer's
 7 property. The calculations are presented below in Table 5:

Table 5 - Analysis of Five-Year Cycle Proposals and Three-Year Averages

Year	Exhibit EGP - 5 5 Year Cycle (Case No. 2017-00179)	Recommended Proposal (Case No. 2020-00174)
2019	\$21,283,946	\$21,312,894
2020	\$21,472,777	\$21,472,777
2021	\$21,688,685	\$21,733,094
2022	\$21,881,312	\$21,577,961
2023	\$22,101,559	\$21,447,083
TOTAL	\$108,428,279	\$107,543,809
3-Year Average (2021, 2022, 2023)	\$21,890,519	\$21,586,046

8 ➤ Kentucky Power also proposes to amend vegetation management and planning
 9 reporting requirements.

1 **Q. PLEASE PROVIDE AN UPDATE TO THE FIRST YEAR OF THE FIVE-YEAR**
 2 **CYCLE AND DESCRIBE THE VEGETATION MANAGEMENT WORK**
 3 **PLAN SCHEDULE AND PROJECTED EXPENDITURES.**

4 A. Kentucky Power began its five-year maintenance cycle work effective January 1, 2019.
 5 The number of circuit miles completed for the first year and the work projected
 6 Vegetation Management Plan are shown in the tables below:

Table 6 – First Five-Year Cycle Vegetation Management Program Work Schedule

Vegetation Management 5 Year Cycle Work Schedule						
Cycle Mile Timing	2019		2020	2021	2022	2023
	Target	Actual	Target	Target	Target	Target
Year 1 Miles	1623	1543				
Year 2 Miles			1642			
Year 3 Miles				1643		
Year 4 Miles					1642	
Year 5 Miles						1643
Cycle Miles	1623	1543	3245	4868	6490	8113
Cumulative Miles	1623	1543	3185	4828	6470	8113

7 Kentucky Power targeted 1,623 miles for annual cycle maintenance and
 8 completed 1,543 miles (95.1%) of the 2019 Vegetation Management cycle work
 9 scheduled. The Company expects to complete the five-year cycle on time by
 10 distributing the 2019 shortfall of 80 miles over the remaining four years of the first
 11 five-year cycle.

12 Kentucky Power sprayed 5,037 acres in 2019. This represented an increase of
 13 50.9% above the 3,338 acres projected in the work plan. The additional acres sprayed
 14 were part of the Company’s transition from foliar spraying to cut stubble application.
 15 The 2019 total acres sprayed included both foliar application to previously cleared

1 right-of-way plus cut stubble application for right-of-way cleared in 2019. By
 2 transitioning to cut stubble application, Kentucky Power expects to limit expenses by
 3 avoiding the costs associated with making a second trip for herbicide application
 4 required for foliar application.

Table 7 – First Five-Year Cycle Vegetation Management Program Projected Expenditures

Vegetation Management 5 Year Cycle Projected Costs						
Cycle Time	2019		2020	2021	2022	2023
	Target	Actual	Target	Target	Target	Target
Year 1 Miles	\$21,283,946	\$21,312,894				
Year 2 Miles			\$21,472,777			
Year 3 Miles				\$21,733,094		
Year 4 Miles					\$21,577,961	
Year 5 Miles						\$21,447,083
Annual Cost	\$21,283,946	\$21,312,894	\$21,472,777	\$21,733,094	\$21,577,961	\$21,447,083
Cumulative Cost	\$21,283,946	\$21,312,894	\$42,785,671	\$64,518,765	\$86,096,726	\$107,543,809

5 The Company’s projected expenditures for the first year were \$21,283,946. Actual
 6 expenditures were \$21,312,894 or \$28,948 (0.14%) above target as shown in Table 7
 7 above.

8 **Q. YOU INDICATED EARLIER THE COMPANY IS PROPOSING AN**
 9 **AMENDMENT TO ITS VEGETATION MANAGEMENT PROGRAM**
 10 **REPORTING REQUIREMENTS. WHAT IS KENTUCKY POWER**
 11 **PROPOSING?**

12 **A.** Kentucky Power currently files two reports. First, the Company files its vegetation
 13 management plan for the upcoming year by October 1 of the preceding year. It also
 14 files a second report, providing information on the work performed and expenditures
 15 made in the preceding year by the following April 1. Kentucky Power proposes in this

1 case to combine the two reports into a single report to be filed by April 1 of each year.
2 The combined report would provide the same information currently provided
3 concerning the prior year's activities. It also provides the vegetation management plan
4 for the current year. Thus, if the Commission grants this request, the filing made on or
5 before April 1, 2022 would report on calendar year 2021's vegetation management
6 activities and provide the plan for calendar year 2022.

7 **Q. WHY IS KENTUCKY POWER PROPOSING TO COMBINE THE TWO**
8 **REPORTS?**

9 A. The two report format was appropriate as Kentucky Power undertook for the first time
10 to establish a cycle-based program to clear and maintain 8,112 miles of distribution
11 lines. The effort required the removal of over two million trees, spraying over 27,000
12 acres, and trimming hundreds of thousands of trees. Because it was the Company's
13 initial effort, and because the amount of vegetation far exceeded anything that could
14 have been reasonably anticipated, Kentucky Power was forced to modify its program
15 on multiple occasions to transition to a cycle-based program. Now that the Company
16 has made its first pass through, and has established a cycle-based program, it anticipates
17 the work will become much more routine and not require substantial modifications in
18 scope on a year-to-year basis. Combining the report will provide the Company
19 significant efficiencies, while providing the Commission and Kentucky Power's
20 customers with the same information, and with the exception of a modest delay in filing
21 the work plan, on the same schedule. The combined report would look similar to the
22 recent 2019 Distribution Vegetation Management Report shown as Exhibit EGP-1
23 which shows the work completed in 2019 and lists the plan for 2020. Notwithstanding

1 this reporting change, the Company would continue to file for a deviation if the
2 expenditures vary from its annual obligation by more than 10%.

3 **3. THE ONE-WAY BALANCING ACCOUNT AND THE COMPANY'S**
4 **PROPOSED ADJUSTMENT TO ITS TEST YEAR VEGETATION**
5 **MANAGEMENT O&M EXPENSES**

3 **Q. PLEASE FURTHER DESCRIBE THE ONE-WAY BALANCING**
4 **MECHANISM ASSOCIATED WITH THE COMPANY'S VEGETATION**
5 **MANAGEMENT PROGRAM.**

6 A. The Commission established the one-way balancing mechanism in its June 22, 2015
7 Order approving the Settlement Agreement in Case No. 2014-00396. In Case No.
8 2017-00179, the Commission found that the one-way balancing adjustments should be
9 continued, with an adjustment based upon the change in the vegetation management
10 program's annual revenue requirement approved in that case. All expenses are to be
11 recorded against each year's annual budget. Any annual shortfall or excess is to be
12 applied to the balancing account. The Company proposes to continue the balancing
13 account until further order of the Commission.

V. SMART GRID

14 **Q. PLEASE DESCRIBE "SMART GRID" INVESTMENTS.**

15 A. Smart grid technology uses advanced information tools to improve the efficiency,
16 reliability, and safety of the electric distribution system. In its April 13, 2016 order in
17 Case No. 2012-00428, the Commission directed each utility in the Commonwealth
18 subject to its jurisdiction to identify its Smart Grid investments in each rate case. The
19 information provided in this section fulfills the Commission's directive.

From The Direct Testimony of Everett G. Phillips
On Behalf of Kentucky Power
Case No. 2023-00159

1 distribution feeder ties to the complex additions of new substations with new
2 distribution feeders to better serve our customers.

3 The Company's proactive planning efforts identify areas where the expected
4 demand for electricity is approaching the limit of the distribution system's current
5 capacity. The reliability improvement projects are necessary to serve load growth and
6 upgrade, improve, or effectively maintain the Company's distribution system. These
7 projects either re-conductor the existing feeders or allow portions of the existing
8 distribution system to be reconfigured. The expansion of the distribution system to
9 serve new customers can also result in the upgrade or replacement of distribution
10 facilities to maintain and enhance reliable service to the Company's customers.

3) Kentucky Power's Distribution Vegetation Management Program

11 **Q. PLEASE PROVIDE A SUMMARY OF KENTUCKY POWER'S VEGETATION**
12 **MANAGEMENT PROGRAM.**

13 A. Systematic, whole system vegetation management programs are widely utilized by the
14 utility industry as an effective way to reduce the frequency and duration of vegetation
15 related outages. Kentucky Power's Vegetation Management Program includes two
16 major components for: (1) trees inside the ROW ("TIR"), a five-year cycle-based
17 program, and (2) trees outside the ROW, identifying and removing danger trees and
18 enhancing the ROW.

1. Distribution Vegetation Management Program-TIR

19 The TIR program is a cycle-based maintenance program that completes vegetation
20 clearing and inspection of all distribution circuit ROW once every five years. The
21 Company began the current five-year cycle-based Vegetation Management Program
22 January 1, 2019. Activities associated with the program include inspections, customer

1 communications, brush removal, trimming of trees, tree removals, certain herbicide
2 applications, and post-clearing audits and inspections. The Company's Forestry Staff
3 facilitate coordination and review of these tasks. All other functions are executed by
4 contracted third parties working on behalf of Kentucky Power.

5 The Company is in the fifth year of the current five-year cycle and is
6 approximately 60 miles ahead of target. Specifically, Kentucky Power targeted 1,623
7 miles for annual cycle maintenance and completed on average for the past four years,
8 1,638 miles per year. As shown later in this section, since the Company started
9 focusing on TIR in June of 2010 and began implementing the five-year cycle
10 maintenance, Customer Interruptions and CMI have decreased substantially over that
11 period.

2. **Distribution Vegetation Management Program-TOR**

12 Vegetation, particularly trees outside ROW, remains the principal cause of outages in
13 Kentucky Power's service territory. Kentucky Power's service territory is heavily
14 forested and largely rural with difficult-to-access distribution equipment.

15 These terrain characteristics present unique accessibility and operational
16 challenges that must be taken into consideration when planning distribution system
17 maintenance. In the Company's 2018 Vegetation Management Plan, Kentucky Power
18 established a program to widen the Company's existing ROW to address outside of the
19 ROW causes of outages, including the removal of danger trees from outside the ROW.
20 The Company began the program on a provisional pilot basis in the Company's Hazard
21 District.

22 Based on the success in the Hazard and Pikeville Districts (the results of which
23 are discussed later in this testimony), Kentucky Power is asking for an enhancement of

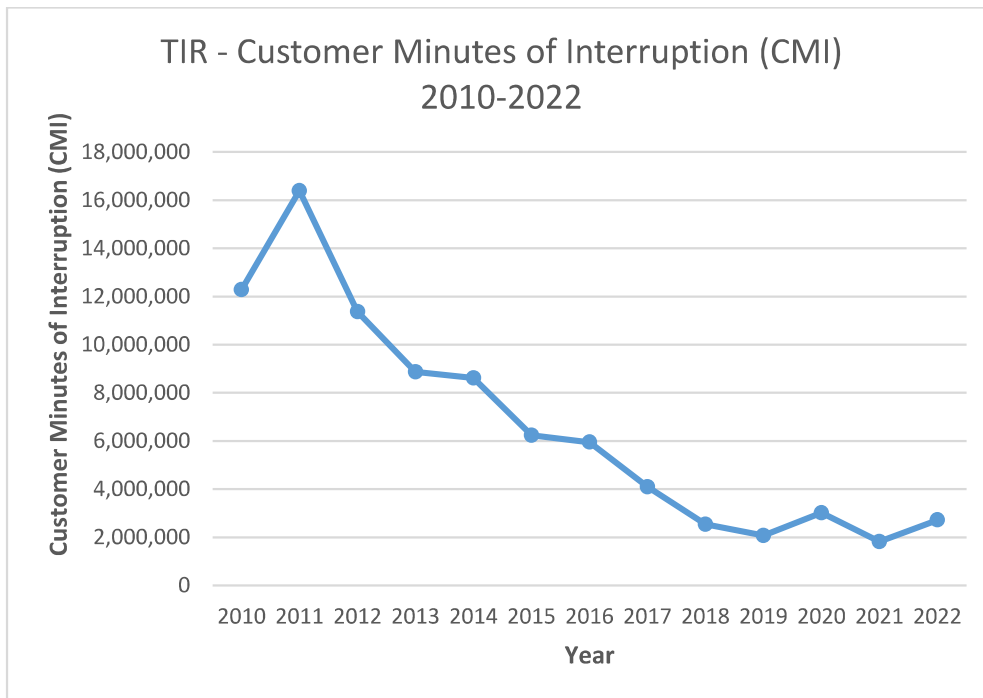
1 the program. The Company is planning to extend it to additional circuits, as well as to
2 go further into the circuits where widening has occurred as part of the proposed DRR.

3 **Q. DOES THE TIR VEGETATION MANAGEMENT PROGRAM PROVIDE**
4 **IMPROVED RELIABILITY FOR THE COMPANY’S CUSTOMERS?**

5 A. Yes. The TIR program focuses on re-clearing and maintaining the Company’s ROWs.
6 As a result, one of the best measures of its effectiveness is CMI associated with trees
7 and vines within the Company’s ROWs.

8 As shown in Figure EGP-8, customer minutes interrupted as a result of trees
9 and vines in the ROW, which measure the total impact of the interruptions, declined
10 from 16,388,594 minutes in 2011 to 2,719,179 minutes in the year ended December
11 31, 2022. That represents an approximately 83% improvement between 2011 and
12 2022.

Figure EGP-8 – TIR CMI Reduction Trend



1 TIR interruptions are expected to remain mostly unchanged for the following reasons:

- 2 • The Company has completed end-to-end maintenance clearing for the entire
3 primary distribution system and maintains control of its ROW.
- 4 • Refusals of customers to allow the Company to clear ROW to the Company's
5 vegetation specifications are not expected to decline; and
- 6 • Outages on secondary distribution lines constitute a greater portion of the remaining
7 total outages, limiting a reduction in the total number of outages beyond the current
8 numbers. The Company's distribution vegetation management work has less effect
9 on secondary distribution lines because secondary lines, including service to home
10 attachments, are positioned lower on the poles and are subject to interference from
11 customer planted trees and tall shrubs that become overgrown.

12 The trend over a ten-year period, as shown in Figure EGP-8 clearly shows the
13 success the Company and its customers are experiencing from the investment in
14 distribution vegetation management. In order to maintain this success, the Company
15 must continue to invest in this cycle-based vegetation management approach. Due to
16 the significant reliability improvements made by lowering CMI related to TIR outages,
17 it is important and prudent to continue current funding levels and implementation to
18 ensure the continued success of the program. Any reduction in the program levels can
19 possibly cause an uptick in the results and require more dollars to bring the issues back
20 under control.

1 **Q. IS THE COMPANY PROPOSING ANY CHANGES TO THE ONE-WAY**
2 **BALANCING MECHANISM ASSOCIATED WITH THE COMPANY'S**
3 **VEGETATION MANAGEMENT – TIR PROGRAM?**

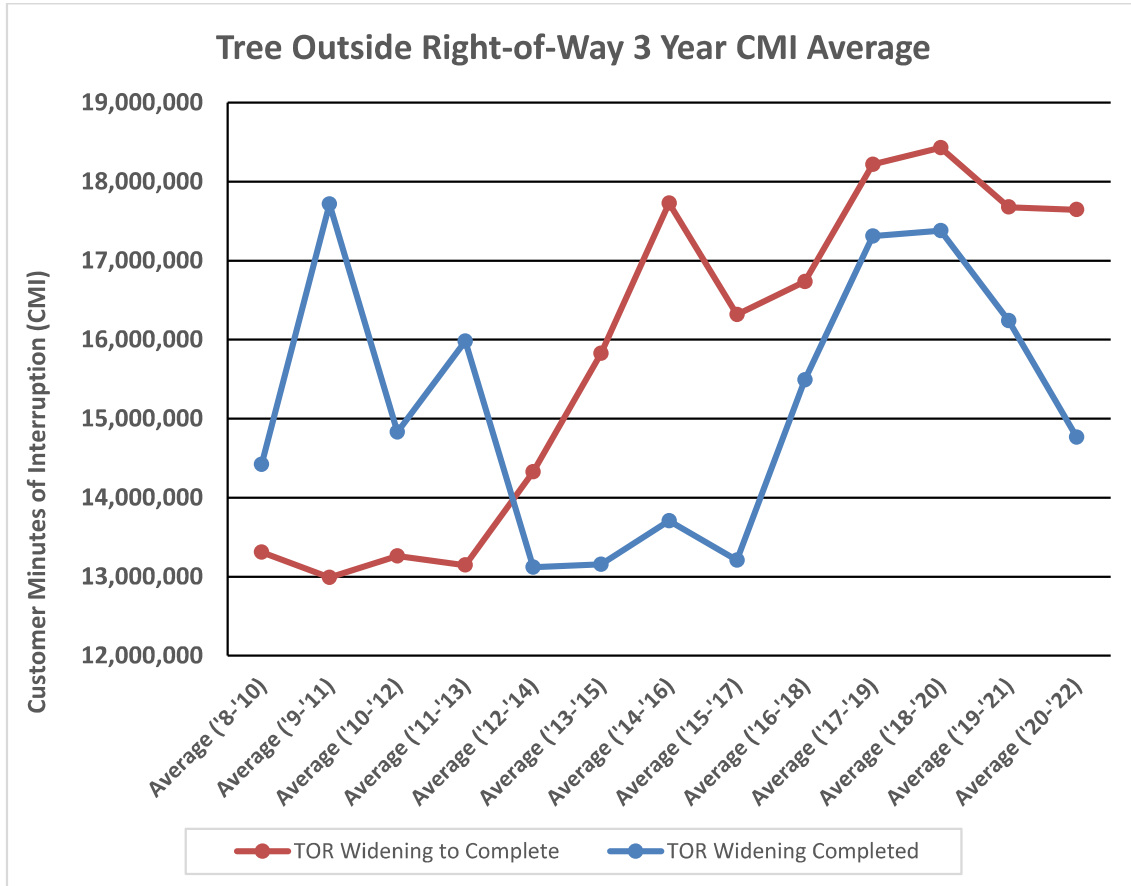
4 A. No. The Commission established the one-way balancing mechanism in its June 22,
5 2015 Order approving the Settlement Agreement in Case No. 2014-00396. In Case
6 Nos. 2017-00179 and 2020-00174, the Commission found that the one-way balancing
7 adjustments should be continued, with an adjustment based upon the change in the
8 vegetation management program's annual revenue requirement approved in those
9 cases. All expenses are recorded against each year's annual budget. Any annual
10 shortfall or excess is applied to the balancing account. The Company proposes to
11 continue the balancing account until further order of the Commission. The Company
12 is proposing that actual test year Vegetation Management Program O&M expense of
13 \$22.4 million, as shown on Application Section V, Exhibit 2 W43, be established as
14 the annual budget for the one-way balancing mechanism resulting from this
15 proceeding.

16 **Q. DOES THE TOR VEGETATION MANAGEMENT PROGRAM PROVIDE**
17 **IMPROVED RELIABILITY FOR THE COMPANY'S CUSTOMERS?**

18 A. Yes. In 2018, Kentucky Power initiated a pilot program to address the threat presented
19 by trees outside its rights-of-way. At the end of 2022, the Company had completed
20 portions of targeted widening on 65 of the 233 distribution circuits, or 28% of the
21 Company's distribution circuits. This targeted approach represents approximately
22 6.6% of the Company's overhead primary distribution miles. To normalize outlier
23 weather event years, the Company reviews a rolling three-year average of data for

1 TOR. Figure EGP-9 demonstrates there was a 15% reduction in SAIDI for average
 2 CMI 2018 through 2020 versus the average 2020 through 2022 for those circuits where
 3 some widening has occurred versus those circuits remaining to be completed has
 4 remained relatively flat.

Figure EGP-9 Three Year Average of TOR vs. CMI (2008-2022)



5 As shown in Figure EGP-9, circuits where the Company performed ROW
 6 widening to address TOR experienced a decrease in CMI as compared to those circuits
 7 that were not widened. In order to maintain and expand this success to all customers,
 8 the Company proposes to continue and expand in its TOR enhanced ROW widening
 9 program through the DRR.

From The Direct Testimony of Michele Ross
On Behalf of Kentucky Power
Case No. 2025-00257

1 projects either re-conductor the existing feeders or allow portions of the existing
2 distribution system to be reconfigured. The expansion of the distribution system to serve
3 new customers can also result in the upgrade or replacement of distribution facilities to
4 maintain and enhance reliable service to the Company's existing customers.

Kentucky Power's Distribution Vegetation Management Program

5 **Q. WHAT PROGRAMS DOES KENTUCKY POWER UTILIZE AS A PART OF ITS**
6 **VEGETATION MANAGEMENT?**

7 A. Kentucky Power's Vegetation Management Program includes two major components.
8 These components are: (1) the TIR Program, a five-year cycle-based program that targets
9 trees and vines in the Company rights-of-way, and (2) the TOR Program, widening the
10 existing rights-of-way, and identifying and removing danger trees. Systematic and
11 complete vegetation management programs are widely utilized by the utility industry as an
12 effective way to reduce the frequency and duration of vegetation related outages.

13 **Q. PLEASE DETAIL KENTUCKY POWER'S INVESTMENTS IN THE TIR**
14 **PROGRAM AND TOR PROGRAM.**

15 A. Since 2017, Kentucky Power has invested over \$229 million in these two vegetation
16 management programs. See Figure MR-5 for vegetation spend year-over-year by project
17 for each program.

Figure MR-5 – Vegetation Management Investments

Year	TIR	TOR
2017	\$27,840,992	\$0
2018	\$21,779,501	\$5,800,828
2019	\$21,303,373	\$11,291,140
2020	\$21,347,446	\$8,477,187
2021	\$21,847,587	\$6,843,116
2022	\$21,599,427	\$6,694,133
2023	\$21,491,040	\$6,731,375
2024	\$22,217,123	\$4,631,694

TIR Program

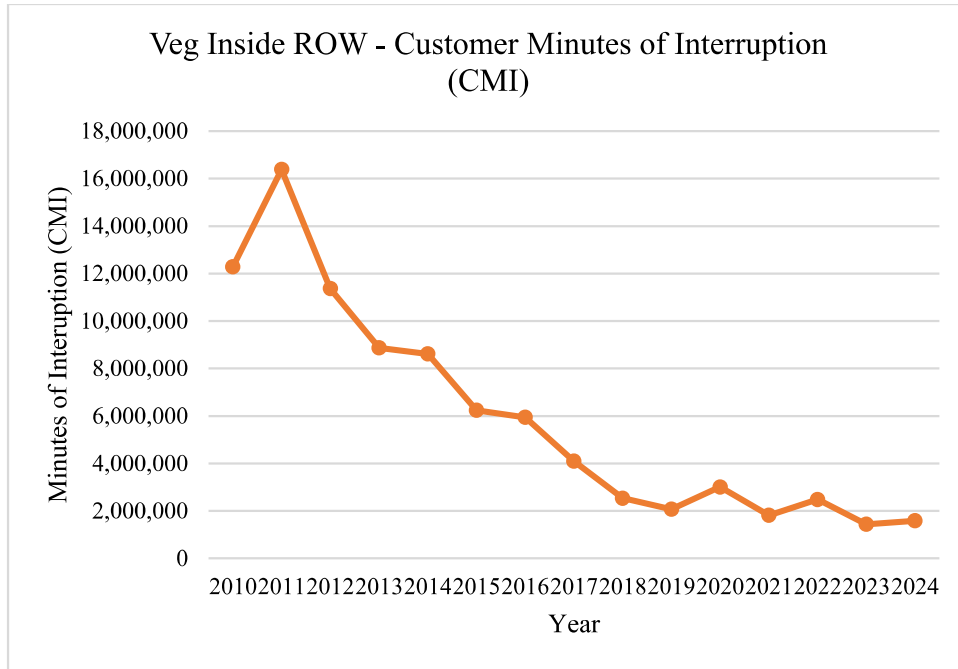
1 **Q. PLEASE PROVIDE A SUMMARY OF THE TIR PROGRAM.**

2 A. The TIR Program is a cycle-based maintenance program that completes vegetation clearing
3 and inspection of all distribution circuit rights-of-way once every five years. These
4 inspections and clearing activities target both trees inside the Company rights-of-way as
5 well as vines that become entangled in distribution facilities in the right-of-way. The
6 Company began the current five-year cycle-based Vegetation Management Program (TIR
7 Program) on January 1, 2023. Activities associated with the program include inspections,
8 customer communications, brush removal, tree trimming and removals, certain herbicide
9 applications, and post-clearing audits and inspections. The Company's Forestry Staff
10 facilitate coordination and review of these tasks. All other functions are executed by
11 contracted third parties working on behalf of Kentucky Power.

12 Figure MR-6 illustrates a significant reduction in CMI due to addressing trees and
13 vines inside the rights-of-way, decreasing from 16,388,594 minutes in 2011 to 1,585,590

1 minutes by December 31, 2024. This represents an approximate 90% improvement in TIR-
2 related CMI between 2011 and 2024.

Figure MR-6 – TIR CMI Reduction Trend



3 **Q. DOES THE COMPANY EXPECT THE TIR PROGRAM TO CONTINUE**
4 **CONTRIBUTING TO ENHANCED RELIABILITY FOR CUSTOMERS?**

5 A. Yes. Interruptions and CMI statistics attributable to the TIR program are expected to
6 continue enhanced reliability performance due to the completion of the end-to-
7 end maintenance clearing for the entire primary distribution system on the five-year cycle,
8 delivering the ongoing control of the distribution system rights-of-way.

9 The trend since 2011, as shown in Figure MR-6 underlines the success the
10 Company and its customers are experiencing from the investment in distribution vegetation
11 management. Due to the significant reliability improvements made by lowering CMI
12 related to TIR outages, it is important and prudent to continue investing the appropriate
13 funding levels to ensure the continued success of the program. Any deviation from the

1 current program can possibly cause an uptick in customer CMI and require even more
2 investment to bring the issues back under control.

3 **Q. WHAT DOES THE COMPANY PROPOSE WITH RESPECT TO THE ONE-WAY**
4 **BALANCING MECHANISM ASSOCIATED WITH THE COMPANY'S**
5 **VEGETATION MANAGEMENT – TIR PROGRAM?**

6 A. The Company intends to continue the one-way balancing account until further order of the
7 Public Service Commission of Kentucky (“Commission”). The Company is proposing to
8 change the budget for the one-way balancing account going forward from \$22,421,864 to
9 \$22,825,396.

10 **Q. PLEASE DESCRIBE THE NEED TO ADJUST THE ANNUAL BUDGET FOR**
11 **THE ONE-WAY BALANCING ACCOUNT.**

12 A. The increase in the current annual level of vegetation management O&M from \$22.4
13 million to \$22.8 million is reasonable and necessary due to the increased costs of labor,
14 equipment, and vine mitigation. As explained above, since 2011, Kentucky Power’s
15 investments have resulted in a 90% reduction in TIR related CMI. The current clearing
16 cycle has proven to be effective, and Kentucky Power must continue to make incremental
17 investments in vegetation management to maintain its current TIR outage performance.

18 **Q. IS THE COMPANY PROPOSING AN ADJUSTMENT TO ITS TEST-YEAR**
19 **EXPENSE TO REFLECT THE PROPOSED ONE-WAY BALANCING ACCOUNT**
20 **BUDGET?**

21 A. Yes. I am supporting an adjustment to decrease the test-year level of O&M for the TIR
22 Program by (\$6,159,962). The adjustment results in a decrease because the Company test
23 year reflects approximately \$29 million of vegetation management expense. Notably, the

1 level of TIR Program expense in the Company’s test year was higher than that of calendar
 2 year simply due to when work was performed. This proposed adjustment is reflected below
 3 in Figure MR-7 and as Adjustment W50 in Section V of the Company’s Application.

Figure MR-7 – Kentucky Power Adjusted Test-Year Distribution TIR O&M Expenses

Description	FERC Account	Proposed Adjustment Amount
Test-Year Vegetation Management Expense	593	\$28,985,358
Adjusted Annual Vegetation Management O&M	593	\$22,825,396
Total Adjustment to Test Year	593	(\$6,159,962)

TOR Program

4 **Q. PLEASE PROVIDE A SUMMARY OF KENTUCKY POWER’S TOR PROGRAM.**

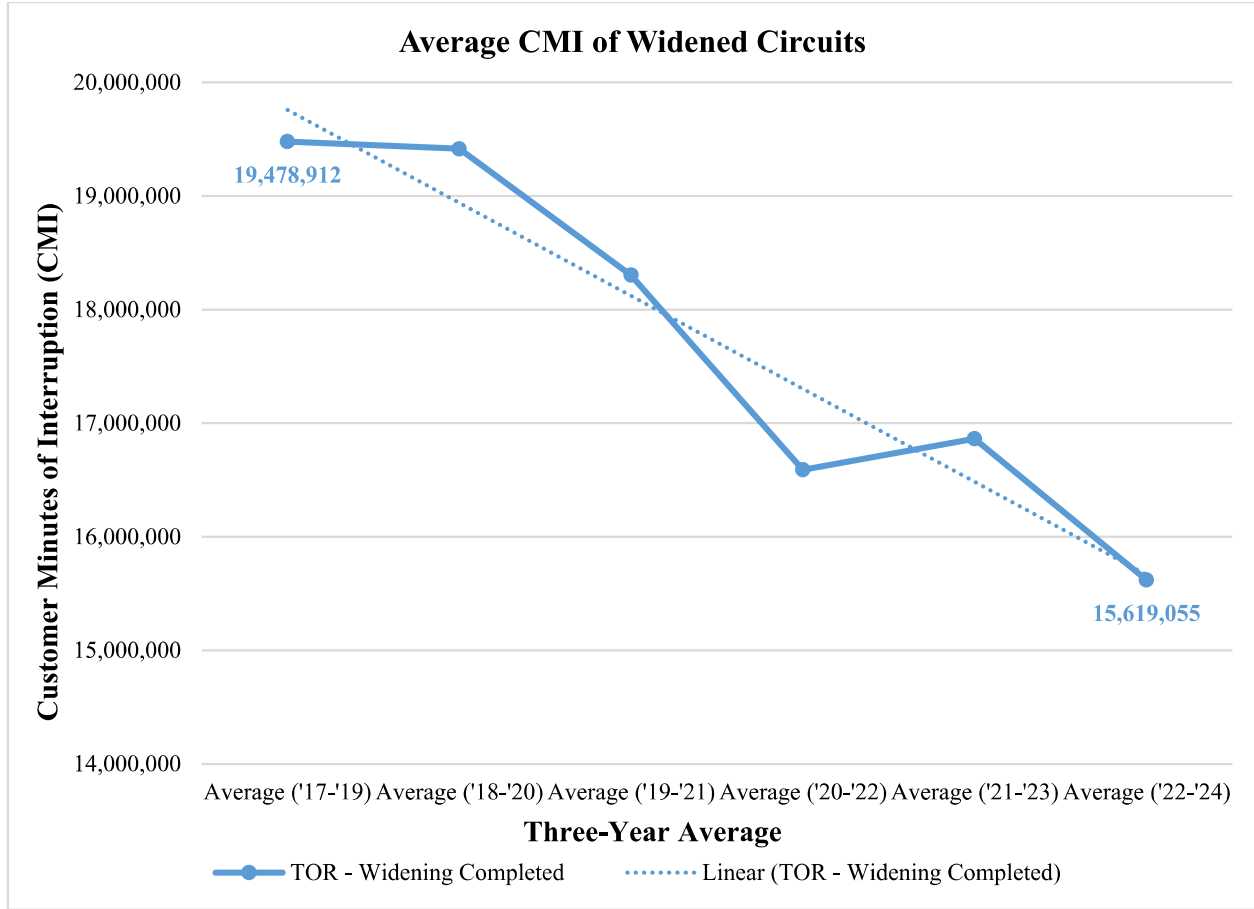
5 A. Beginning with the Company’s 2018 Vegetation Management Plan, Kentucky Power
 6 established a pilot program to address the Company’s existing outside of the right-of-way
 7 trees, including the removal of danger trees on a limited number of certain circuits.
 8 Following the successful pilot program, the Company expanded the TOR Program to
 9 additional circuits across all service districts based on circuit performance. As
 10 demonstrated above, vegetation, particularly TOR, remains the principal cause of outages
 11 in Kentucky Power’s service territory.

12 **Q. DOES THE COMPANY HAVE EVIDENCE THAT THE PILOT TOR PROGRAM
 13 DELIVERED IMPROVED RELIABILITY FOR CUSTOMERS?**

14 A. Yes. Figure MR-8 illustrates a positive correlation between the TOR ROW widening
 15 efforts and reliability improvements. This graph illustrates the CMI performance for
 16 circuits that underwent ROW widening. As shown in Figure MR-8, circuits with ROW

1 widening experienced a decrease in CMI. Specifically, there was approximately a 20%
 2 decrease in CMI for widened circuits compared to the three-year average from 2017–2019.

Figure MR-8 – Average CMI of Widened Circuits



3 These results indicate that ROW widening is an effective measure to mitigate
 4 vegetation impacts on distribution facilities. With storms becoming more severe,
 5 addressing vegetation is critical, as it accounts for over half of the annual CMI. Therefore,
 6 it is prudent to invest in solutions that specifically target this outage cause.

7 **Q. IS THE COMPANY PROPOSING ANY ADJUSTMENTS TO THE TOR**
 8 **PROGRAM AS PART OF THIS FILING?**

9 A. Yes. I am supporting an adjustment to Distribution capital plant in service of \$18 million
 10 for known and measurable increases to expand the Company’s TOR Program. This

1 proposed adjustment is reflected below in Figure MR-9 and as Adjustment W50
 2 Capitalization in Section V of the Company’s Application.

Figure MR-9 – Kentucky Power Distribution Capital Adjustments

Adjusted Kentucky Retail Jurisdiction Distribution Plant	FERC Account	Description	Proposed Adjustment Amount
Distribution Plant	365	TOR Program	\$18,000,000
Total		Distribution Plant Adjustment	\$18,000,000

6 **Q. WHY IS EXPANSION OF AND INCREASED INVESTMENT IN THE TOR**
 7 **PROGRAM NECESSARY, AND WHAT BENEFITS DOES IT BRING TO**
 8 **CUSTOMERS AND THE COMPANY?**

9 A. As demonstrated in Figure MR-2 above in my Direct Testimony, outages attributable to
 10 trees outside the right-of-way were the number one cause of CMI in 2024, causing about
 11 55% of outages. Conversely, outages attributable to trees inside the right-of-way made up
 12 only about 2% of all outages in 2024. The Company’s low percentage of outages caused
 13 by trees inside the right-of-way is directly attributed to the years-long investments made in
 14 the TIR Program as demonstrated in Figure MR-6.

15 Given the success of the increased investment and robust clearing schedule
 16 associated with the TIR Program, the Company recognizes an opportunity to duplicate that
 17 success with an expanded TOR Program, which requires a concurrent increase in
 18 investment in the TOR Program. For example, in 2024 Kentucky Power invested
 19 approximately \$4.6 million in the TOR Program, and over \$22.2 million in the TIR
 20 Program. The goal for the proposed \$18 million capital plant-in-service adjustment to
 21 expand the TOR Program is to decrease outages attributable to trees outside the right-of-
 22 way and continue to improve reliability for all of the Company’s customers.

1 Additionally, reducing outages caused by trees outside the right-of-way can lower
2 capital and O&M costs across several areas. For example, with fewer trees falling on
3 distribution assets, less construction will be required for outage restoration. Tree impacts
4 on poles can lead to severe damage, making restoration projects both expensive and
5 time-consuming. Kentucky Power's performance will be demonstrated by improved
6 CAIDI, SAIDI, SAIFI, and CMI metrics.

7 **Q. HOW WILL KENTUCKY POWER IDENTIFY PROJECTS/CIRCUITS FOR THE**
8 **TOR PROGRAM?**

9 A. Kentucky Power will review distribution circuit CMI metrics to identify which have the
10 highest TOR impacts. Kentucky Power will begin by analyzing the affected circuits and
11 then conduct a more in-depth examination of zonal impacts. This approach allows for a
12 detailed assessment of line sections. Once the analysis is complete, the Company will
13 implement targeted vegetation clearing to reduce outages caused by vegetation impacts.
14 For a list of circuits where widening will occur, see Exhibit MR-4 TOR Reliability
15 Widening Workplan.

16 **VII. THE COMPANY'S DISTRIBUTION CAPITAL INVESTMENTS AND**
17 **TEST-YEAR O&M EXPENSES ARE REASONABLE**

Distribution Capital Investments

16 **Q. PLEASE DESCRIBE THE KINDS OF DISTRIBUTION CAPITAL ADDITIONS**
17 **THAT KENTUCKY POWER HAS MADE SINCE ITS LAST BASE RATE CASE.**

18 A. The Company has invested in the following general capital project categories necessary
19 to provide safe and reliable electric service to new and existing customers since its last base
20 rate case:

- 21 • Asset Improvement: Replacement of outdated, failing equipment, and other
22 necessary infrastructure upgrades needed to maintain safe and reliable electric

1 service for Kentucky Power customers. More specifically, the Asset Improvement
2 project category primarily includes poles, overhead circuit and underground-fed
3 structure inspections and repairs along with sub-station breaker replacements.

- 4 • Customer Service: Work required to connect new customers and customers who
5 upgrade their facilities that are connected to the distribution system as well as the
6 costs of the necessary transformers and meters.

- 7 • Vegetation Management Program: Capital work for the TIR and TOR programs
8 performed by Kentucky Power's forestry department to widen existing clearance
9 zones, remove large trees inside and outside of the rights-of-way, or to establish
10 a new clearance zone for new construction.

- 11 • Planning Capacity: Projects developed as part of Kentucky Power's long-range
12 planning for meeting electrical load needs on Kentucky Power's distribution
13 system. The need for capacity expansion is due to either new customers or new
14 load from existing customers in an area. While the Company is seeing an overall
15 decrease in customers, there are pockets of growth that must be addressed on
16 individual stations or circuits where the loading has increased.

- 17 • Reliability: Investments that target known reliability issues affecting groups of
18 customers or whole circuits experiencing reliability issues. This work includes
19 activities such as replacing poles, installing lightning mitigation, replacement of
20 crossarms, small conductors, addition of sectionalizing devices, as well as
21 necessary upgrades to allow for additional switching on the distribution system to
22 improve the resiliency of the distribution grid in these targeted areas.

- 23 • System Restoration: Investments to restore electrical service following an
24 unplanned event. These are typical system restoration projects, such as replacing
25 poles, reconductoring full-length spans, and replacing transformers damaged
26 during a storm or weather-related event, generally caused by TOR. This category
27 also includes the replacement of streetlights and outdoor area lights.

28 **Q. DID KENTUCKY POWER MAKE OTHER CAPITAL INVESTMENTS SINCE**
29 **ITS LAST BASE RATE CASE?**

30 A. Yes. The Company also made distribution-related intangible and general plant capital
31 investments since its last base rate case.

32 Intangible capital projects represent routine software updates, as well as the support
33 of cloud-based programs and Software as a Service ("SaaS") applications that enable the
34 operation and enhance the efficiency of Kentucky Power's Distribution organization.

1 These SaaS solutions provide scalable resources and continuous updates, ensuring that the
2 organization remains agile and responsive to evolving operational needs.

3 General plant capital projects include:

- 4 • Telecommunication upgrades necessary to improve internal Kentucky Power
5 communications. These upgrades allow for more efficient transfer of information and
6 data within the Company. For field employees, these upgrades facilitated
7 improvements to radio systems that provides a more reliable connection to teams such
8 as dispatch. For one such project, Kentucky Power migrated from an old, leased site
9 onto a brand new owned site. This new site hosts equipment that provides an increased
10 radio communication footprint across the area by upgrading outdated technology with
11 enhanced radio systems.
- 12 • Improvements and investments in Kentucky Power Distribution buildings. For
13 example, Kentucky Power replaced the roof at the Pikeville operations center in 2024.
14 Improvements such as these keep facilities safe for the Company's workforce, and
15 ensure the Company is able to facilitate the work needed to safely and reliably service
16 the distribution system.

17 **Q. HOW MUCH CAPITAL HAS KENTUCKY POWER INVESTED IN ITS**
18 **DISTRIBUTION SYSTEM SINCE THE LAST BASE RATE CASE?**

19 A. The Company has invested approximately \$184.6 million of capital in distribution since
20 the end of the test year in its last base rate case, or from April 1, 2023, through May 31,
21 2025.

22 This \$184.6 million consists of \$164.9 million for Asset Improvement, Customer
23 Service, Vegetation Management, Planning Capacity, Reliability, and System Restoration

1 projects. The remainder includes \$7.1 million of Distribution-Intangible Plant, and \$12.6
 2 million of Distribution-General Plant.

3 A breakdown of Kentucky Power’s distribution capital additions by general project
 4 category for April 1, 2023, through May 31, 2025, is provided in Figure MR-10.

Figure MR-10 – Kentucky Power Distribution Capital Additions (\$)

	4/1/2023– 12/31/2023	1/1/2024– 12/31/2024	1/1/2025– 5/31/2025	6/1/2024– 5/31/2025	4/1/2023– 5/31/2025
CATEGORY	2023 (partial)	2024	2025 (partial)	TEST YEAR	TOTAL
Asset Improvement	\$12,017,663	\$34,726,090	\$9,508,487	\$39,239,383	\$56,252,240
Customer Service	\$11,206,613	\$13,953,937	\$9,401,946	\$17,288,349	\$34,562,496
Vegetation Mgmt. Program	\$1,370,241	\$12,772,424	\$674,502	\$5,157,351	\$14,817,166
Planning Capacity	\$10,249,092	\$1,522,284	\$739,391	\$1,448,775	\$12,510,768
Reliability	\$7,673,250	\$12,577,482	\$2,075,328	\$11,787,221	\$22,326,060
System Restoration	\$6,177,963	\$9,108,664	\$9,159,367	\$12,813,095	\$24,445,994
Sub-Total	\$48,694,822	\$84,660,881	\$31,559,021	\$87,734,174	\$164,914,724
Intangible Plant	\$3,450,440	\$3,566,563	\$87,479	\$2,478,867	\$7,104,482
General Plant	\$5,886,098	\$4,984,861	\$1,703,581	\$5,058,601	\$12,574,540
Sub-Total	\$9,336,538	\$8,551,424	\$1,791,060	\$7,537,468	\$19,679,022
Total	\$58,031,360	\$93,212,305	\$33,350,081	\$95,271,642	\$184,593,746

5 **Q. ARE THE TEST-YEAR AMOUNTS OF KENTUCKY POWER’S DISTRIBUTION**
 6 **CAPITAL EXPENSE INCLUDING YOUR PRO FORMA ADJUSTMENT TO**
 7 **CAPITAL PLANT IN SERVICE REASONABLE?**

8 A. Yes. The test-year amounts of capital additions are in-line with historical spending over
 9 time and these amounts represent the investments required to continue to support safe and
 10 reliable service to customers.

Distribution O&M Expenses

1 **Q. WHAT WERE THE ANNUAL AND TEST-YEAR LEVEL OF KENTUCKY**
2 **POWER'S DISTRIBUTION O&M EXPENSES SINCE THE COMPANY'S LAST**
3 **BASE RATE CASE?**

4 **A.** Figure MR-11 provides Kentucky Power's per book (unadjusted) distribution O&M
5 expenses by Federal Energy Regulatory Commission ("FERC") account for the past four
6 calendar years and the test year.

Figure MR-11 – Kentucky Power Distribution O&M Expenses (\$)¹

	FERC ACCT	2021	2022	2023	2024	Test Year
Distribution Operation	5800	\$829,970	\$805,659	\$873,874	\$1,192,931	\$1,451,741
	5810	\$3,410	\$1,964	\$1,968	\$1,048	\$2,864
	5820	\$259,294	\$388,479	\$325,489	\$387,429	\$370,026
	5830	\$397,079	\$351,141	\$469,216	\$281,948	\$723,607
	5840	\$152,750	\$238,861	\$260,153	\$326,743	\$362,840
	5850	\$78,060	\$46,816	\$59,168	\$40,246	\$32,898
	5860	\$1,151,401	\$1,229,732	\$1,211,647	\$1,353,435	\$1,216,051
	5870	\$193,715	\$200,910	\$222,454	\$191,956	\$159,098
	5880	\$2,424,122	\$3,192,387	\$3,337,241	\$6,285,823	\$5,777,410
	5890	\$242,074	\$933,528	\$796,344	\$1,048,358	\$1,105,284
Subtotal		\$5,731,877	\$7,389,475	\$7,557,555	\$11,109,917	\$11,201,820
Distribution Maintenance	5900	\$26,434	\$5,110	\$18,724	\$15,594	\$57,091
	5910	\$8,122	\$20,773	\$3,289	\$10,318	\$14,906
	5920	\$683,774	\$337,440	\$784,295	\$888,071	\$952,822
	5930	\$33,683,296	\$33,194,092	\$32,117,233	\$31,281,486	\$29,678,038
	5940	\$19,443	\$48,395	\$24,053	\$24,176	\$33,645
	5950	\$52,827	\$23,586	\$33,838	\$16,734	\$7,710
	5960	(\$8,742)	\$20,854	\$24,697	\$9,850	\$7,687
	5970	\$50,515	\$33,477	\$34,288	\$37,643	\$41,553
	5980	\$20,541	\$25,517	\$20,915	\$27,046	\$27,546
Subtotal		\$34,536,208	\$33,709,243	\$33,061,331	\$32,310,918	\$30,820,998
Total		\$40,268,085	\$41,098,719	\$40,618,886	\$43,420,834	\$42,022,818
* Note: negative number is generally the result of reimbursements for make ready work related to pole attachments.						

1 **Q. PLEASE DISCUSS THE TEST-YEAR O&M EXPENDITURES.**

2 A. The Company’s test-year O&M is consistent with historical spending. The four-year
 3 average from the above time period is \$41.35 million. During the test year, the Company
 4 spent approximately \$42.02 million, about \$671,187 more than the annual average
 5 expenses incurred over the past four years. This difference is in line with the Company’s

¹ Numbers in this table have been rounded to the nearest whole value.

1 expectations and is consistent with expected year-over-year variability (*i.e.*, events such as
2 storms), while also illustrating the increases in prices for equipment and labor.

3 **Q. ARE THE TEST-YEAR AMOUNTS OF KENTUCKY POWER’S DISTRIBUTION**
4 **O&M EXPENSE INCLUDING YOUR ADJUSTMENT REASONABLE?**

5 A. Yes. The test-year amounts of O&M, including the known and measurable adjustments
6 discussed above, are in line with the Company’s historical O&M expenditures since its last
7 base rate case. Additionally, the adjustments listed in Figure MR-7 represent the amount
8 necessary for the Company to continue to provide safe and reliable service to its customers,
9 while adding positively to the customer experience as described in my Direct Testimony.

VIII. ADVANCED METERING INFRASTRUCTURE (“AMI”) PLANS

10 **Q. WHAT IS THE STATUS OF THE COMPANY’S IMPLEMENTATION OF AMI**
11 **METERS SINCE THE COMMISSION ISSUED ITS ORDER GRANTING A CPCN**
12 **IN CASE NO. 2024-00344 ON JULY 22, 2025 (“AMI ORDER”)?**

13 A. The Company is currently in the final stages of preparation prior to beginning execution of
14 the AMI project. Kentucky Power is collaborating with the vendor to finalize
15 communication strategies for devices aimed at serving the Company’s most rural
16 customers. Then, the Company will proceed to finalize the contract with the vendor. Once
17 the contract is executed, Kentucky Power will initiate system implementation by ordering
18 the necessary equipment to establish the AMI communication backhaul.

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026

DATA REQUEST

**KPSC
RH 2_4** Refer to Kentucky Power's Response to Staff's First Rehearing Request, Item 11(b)(4). Explain whether the amounts associated with PY-SUP PENS-CASH (Ret/DefMnth) (SUP) were removed from Kentucky Power's cost of service as part of the Commission's adjustment to remove Kentucky Power's Supplemental Executive Retirement Plan expense.

RESPONSE

Yes, the expense associated with employee payments of this type were removed from Kentucky Power's cost of service as part of the Commission's adjustment to remove Kentucky Power's Supplemental Executive Retirement Plan expense.

Witness: Andrew R. Carlin

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026

DATA REQUEST

**KPSC
RH 2_5** Refer to Kentucky Power's Response to Staff's First Rehearing Request,
Item 2(b).

- a. Confirm that the prior year true-ups and other adjustments excluded from the calculation in Column H will be included in the FERC charges in 2026. If Kentucky Power cannot confirm, explain each basis for why Kentucky Power is not able to confirm.
- b. Explain how true-ups are incorporated into the FERC revenue requirement.

RESPONSE

- a. Confirmed. However, these true-ups are from prior periods and do not represent a going-level of Kentucky Power's transmission service expense. Kentucky Power cannot predict the amount of future true-ups, therefore it is not known and measurable. Please also see the Company's response to KPSC RH 2-10.
- b. True-ups are incorporated into FERC revenue requirements on a two-year lag. For example, the true-up amount for the 2025 rate year will be included in 2027 FERC transmission rates.

Witness: Katharine I. Walsh

Witness: Michael M. Spaeth

Witness: Christopher K. Duffy

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 1 of 2

DATA REQUEST

- KPSC
RH 2_6** Refer to Kentucky Power's Response to Staff's First Rehearing Request, Item 2, KPCO_R_KPSC_RH_1_2_Attachment1. Refer also to Kentucky Power's Response to Staff's First Rehearing Request, Item 3.
- a. Explain what "Including CRES" means as used in KPCO_R_KPSC_RH_1_2_Attachment1 at Cell A6 of Tab "2026 Rates" and Cell A6 of Tab "2025 Rates."
- b. Explain what is represented by the 20,357 MW, the 3,354 MW, and the 23,710.2 MW in Cells B6, B7, and B8, respectively, in Tab 2026 Rates of KPCO_R_KPSC_RH_1_2_Attachment1.
- c. Explain every difference between the 20,357 MW reflected in Cell B6 and the 17,540 MW reflected in Cell B34 in Tab 2026 Rates of KPCO_R_KPSC_RH_1_2_Attachment1, including loads that are included in one but not the other, differences in the periods used, and any other differences in the methodology for determining those values.
- d. Explain whether the CRES load included in the 20,357 MW in Cell B6 in Tab "2026 Rates" of KPCO_R_KPSC_RH_1_2_Attachment1 is included in the loads that make up the 17,540 MW in Cell B34 in Tab "2026 Rates" of KPCO_R_KPSC_RH_1_2_Attachment1, and if so, explain where that load is included. If not, explain how the costs associated with the CRES load are removed from the AEP affiliated amounts allocated, in part, to Kentucky Power using the 12 CP method.
- e. Explain whether the 20,357 MW load reflected in Cell B6 in Tab "2026 Rates" of KPCO_R_KPSC_RH_1_2_Attachment1 includes wholesale customers served by each operating company, and if so, explain how the costs associated with that load are removed from the amounts allocated to Kentucky Power using the 12 CP method.

RESPONSE

- a. CRES refers to Competitive Retail Electric Service providers. These are entities that serve retail load in service territories where retail competition exists. For Transmission Settlements purposes, CRES loads are assigned to the retail jurisdiction in which they operate.

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 2 of 2

b. The 20,357 MW in Cell B6 represents the total contribution to the Network Service Peak Load (NSPL) of the AEP Operating Companies, including applicable CRES Loads.

The 3,354 MW in Cell B7 represents the NSPL contribution of other loads in the AEP Transmission zone that are not affiliated with the AEP Operating Companies.

The 23,710.2 MW in Cell B8 represents the total AEP Zone NSPL.

c. The 20,357 MW in Cell B6 is the AEP Operating Companies share of the NSPL which is calculated based on the highest single coincident peak of the AEP Zone (1CP).

The 17,540 MW in Cell B34 is the average of AEP Operating Companies twelve coincident peaks (12CP) throughout the year.

The 1CP and 12CP are calculated for the same loads over the same time period.

d. The CRES load is included in both the 1CP and 12CP calculations. Ohio Power, Appalachian Power and Indiana & Michigan Power included CRES load in their 2026 1CP and 12CP calculations.

e. The 20,357 MW in Cell B6 does not include any wholesale customers served by the operating companies.

Witness: Katharine I. Walsh

Witness: Michael M. Spaeth

Witness: Christopher K. Duffy

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 1 of 2

DATA REQUEST

**KPSC
RH 2_7**

Refer to Kentucky Power's Response to Staff's First Request, Item 55, KPCO_R_KPSC_1_55_Attachment27_SpaethWP7.xlsx. Refer also to Kentucky Power's response to Commission Staff's Supplemental Post Hearing Requests for Information to Kentucky Power, Item 1, KPCO_R_KPSC_PHDR_2_1_Attachment1.xlsx, Tab "FERC_IS1." Refer also to the table on page 77 of the February 28, 2026 Order in this case reflecting Kentucky Power's projected PJM LSE OATT expense in 2025 of \$152,262,631 and the actual PJM LSE OATT expense in 2025 of \$140,994,529.

a. Confirm that the \$140,994,529 reflected on page 77 of the February 28, 2026 Order accurately reflects Kentucky Power's PJM LSE OATT expense in 2025. If Kentucky Power cannot confirm, explain each basis why Kentucky Power is not able to confirm.

b. Explain in detail what caused the actual PJM LSE OATT expense in 2025 to be lower than Kentucky Power's 2025 projected PJM LSE OATT expense as reflected in KPCO_R_KPSC_1_55_Attachment27_SpaethWP7.xlsx.

c. Provide a spreadsheet in Excel format showing the total revenues collected from AEP affiliates and non-affiliates in 2025 pursuant to the FERC rates that correspond to the amounts in KPCO_R_KPSC_1_55_Attachment27_SpaethWP7.xlsx and provide the actual percentage allocation in 2025 of amounts collected from affiliates and non-affiliates in 2025 that correspond to the percentages in "2025 Rates" of KPCO_R_KPSC_1_55_Attachment27_SpaethWP7.xlsx.

d. Identify and explain each assumption in KPCO_R_KPSC_1_55_Attachment27_SpaethWP7.xlsx that proved to be inconsistent with the calculation of the expense in 2025 and resulted in the actual PJM LSE OATT expense in 2025 being lower than Kentucky Power's 2025 projected PJM LSE OATT expense as reflected in KPCO_R_KPSC_1_55_Attachment27_SpaethWP7.xlsx.

RESPONSE

a. Confirmed.

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 2 of 2

b. The adjustment calculated in KPCO_R_KPSC_1_55_Attachment 23_SpaethWP7.xlsx, while calculated based on 2025 projections, was intended to calculate a going-level of expenses. The amounts differ from Kentucky Power's per books expenses because the PJM OATT expenses billed to the Company in 2025 included several one-time adjustments and the 2023 true-up. Please also see the Company's response to KPSC 2-10.

c. Please see KPCO_R_KPSC_RH_2_7_Attachment1.

d. The assumptions were not inconsistent with the expense incurred in 2025. As discussed, the adjustment was meant to provide a going-level of transmission expense, while the expense Kentucky Power incurred in 2025 included several one-time adjustments that are not ongoing.

Witness: Katharine I. Walsh

Witness: Michael M. Spaeth

Witness: Christopher K. Duffy

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 1 of 3

DATA REQUEST

**KPSC
RH 2_8**

Refer to Kentucky Power's response to Staff's First Rehearing Request, Item 3(a) indicating that Section 34.1 of the PJM Open Access Transmission Tariff (OATT) determines how transmission costs are assigned to loads within the AEP Zone and Appendix I of the AEP Transmission Agreement determines how costs assigned to the AEP Load are allocated to its operating companies, including Kentucky Power. Refer also to Kentucky Power's Response to Staff's First Rehearing Request, Item 2, KPCO_R_KPSC_RH_1_2_Attachment1.

a. Confirm that the allocation of the FERC transmission revenue requirement between AEP affiliated and non-affiliated loads as reflected in Cell H11 of Tab "2026 Rates" in KPCO_R_KPSC_RH_1_2_Attachment1 is governed by Section 34.1 of the PJM OATT. If Kentucky Power cannot confirm, explain each basis why Kentucky Power is not able to confirm.

b. Explain how the allocation methodology between the AEP affiliated load and the non-affiliated load reflected in Tabs "2025 Rates" and "2026 Rates" in KPCO_R_KPSC_RH_1_2_Attachment1 is consistent with the allocation methodology outlined in the PJM OATT with specific references to the relevant tariff language.

c. Provide the actual spreadsheets filed with FERC used to calculate the amounts reflected in Tabs "Zonal Rates 2025," "TransCo PJM Zonal Rates 2025," "Zonal Rates 2026," and "TransCo PJM Zonal Rates 2026" of KPCO_R_KPSC_RH_1_2_Attachment1.

d. Provide spreadsheets filed with FERC calculating the RTZ and the RTNZ, as those terms are used in Section 34.1 of the PJM OATT, applicable in 2025 and 2026 from the FERC transmission revenue requirements in 2025 and 2026.

e. Explain with references to relevant tariff language how the DCPZ and the DCPNZ are determined and used to calculate the DDCZ and DDCNZ, respectively, pursuant to the PJM OATT, including whether the DCPZ and DCPNZ are based on historical demand or projected future demand.

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 2 of 3

f. Provide a copy of Attachment H for AEP as referenced in Section 34.1 of the PJM OATT.

RESPONSE

a. Confirmed. The transmission revenue requirement shown in Cell H11 is allocated to all loads in the AEP Zone pursuant to Section 34.1 of the PJM OATT.

b. The MW used to calculate the allocation percentage on the “2025 Rates” and “2026 Rates” are each loads contribution to the zonal peak load. This is consistent with OATT Section 34.1 which states:

“The zonal daily load (DCPZ) of the Network Customer shall be the sum of the Network Customer's individual wholesale and retail customer Zone Network Loads (including losses) at the time of the annual peak of the Zone in which the load is located.”

c. Please see the links below:

<https://docs.aep.com/docs/requiredpostings/TariffFilings/2025/2026EastOpCoAnnualProjection/03%20PTRR%20FR%20Summary%202026%20v2.xlsx>

<https://docs.aep.com/docs/requiredpostings/TariffFilings/2025/2026EastTranscoAnnualProjection/03%20PJM%20PTRR%20AEP%20Transmission%20Companies%202026%20v2.xlsx>

d. Please see the link below for the RTZ of the AEP Zone. Note PJM does not file this item with FERC. It is compiled from the filings of transmission owners in PJM. Also note the AEP Zone does not have any non-zone network load and thus has no RTNZ.

<https://www.pjm.com/-/media/DotCom/markets-ops/settlements/network-integration-trans-service-january-2026-xls.xlsx>

e. DCPZ is calculated as each Network Customers contribution to the NSPL of the zone. The amount is calculated from November to October of the period prior to the billing year. For example, the DCPZ for 2026 was calculated from November 2024 through October 2025. Note the AEP Zone does not have any non-zone network load and thus has no DCPNZ or DDCNZ.

Kentucky Power Company
KPSC Case No. 2025-00257
Commission Staff's Second Set of Rehearing Data Requests
Dated May 21, 2026
Page 3 of 3

f. The AEP Zone Network Integration Transmission Service Rate (NITS) for the AEP Zone is comprised of the NITS rates of the AEP Operating Companies, the AEP Transmission Companies and AMP Transmission, LLC. Links to Attachment H for each party are provided below.

AEP Operating Companies - Attachment H-14B

<https://agreements.pjm.com/oatt/8721>

<https://agreements.pjm.com/oatt/8722>

AEP Transmission Companies – Attachment H-20B

<https://agreements.pjm.com/oatt/18751>

<https://agreements.pjm.com/oatt/19622>

AMP Transmission, LLC – Attachment H-32A

<https://agreements.pjm.com/oatt/32268>

Witness: Katharine I. Walsh

Witness: Michael M. Spaeth

Witness: Christopher K. Duffy