



pecoSM

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April 30, 2025

VIA E-Filing

Matthew Homsher, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, Pennsylvania 17120

Re: PECO 2024 Annual Electric Reliability Report - PUC Docket No. M-2023-3039027

Dear Secretary Homsher:

Enclosed is PECO's 2024 Annual Reliability Report for the period ending December 31, 2024, submitted pursuant to the Electric Service Reliability Regulations at 52 Pa. Code Chapter 57.

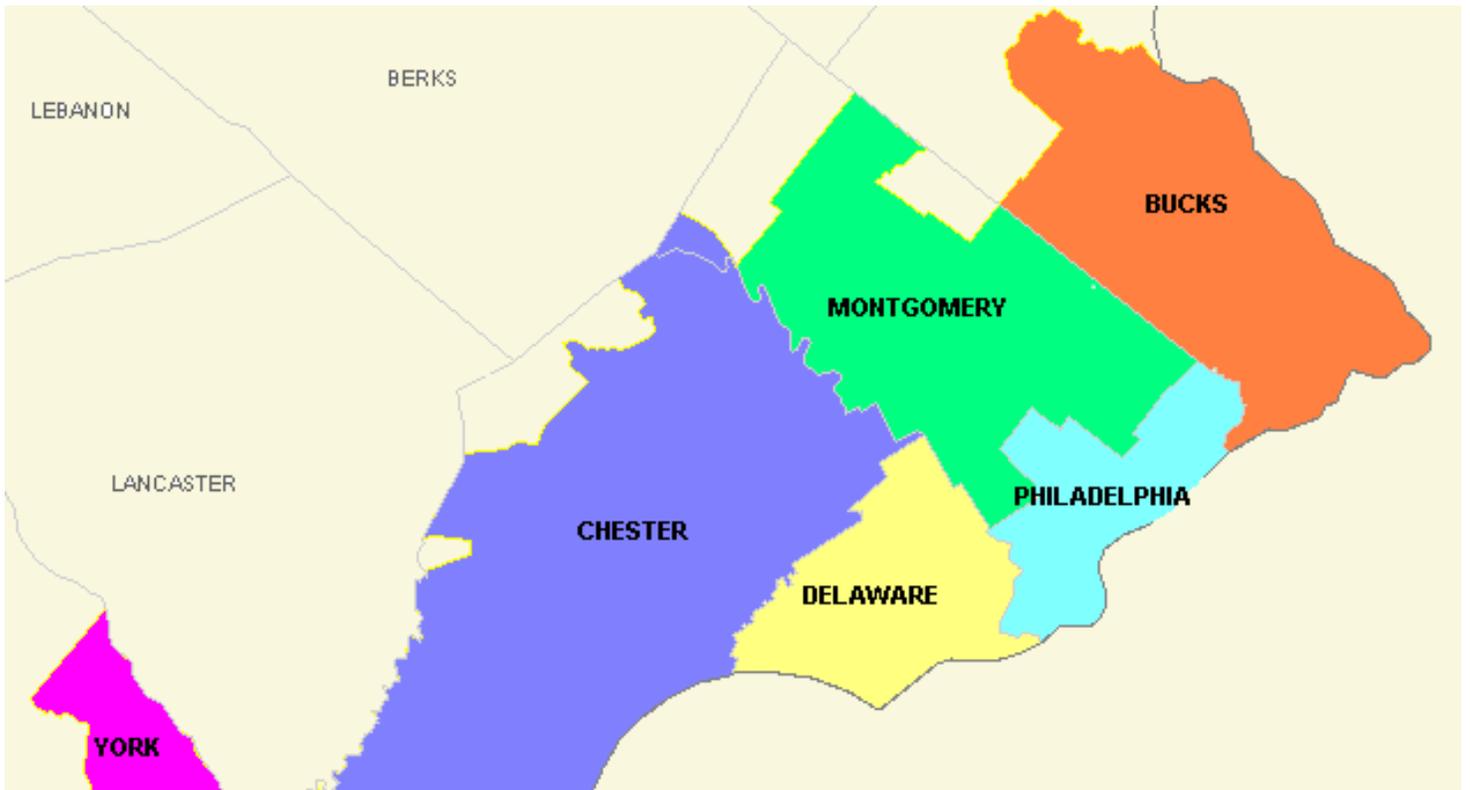
Thank you for your assistance in this matter and please direct any questions regarding the above to Megan McDevitt, Senior Manager, Retail Rates at 267-533-1942 or via email: megan.mcdevitt@exeloncorp.com.

Sincerely,

Enclosure

cc: Dan Searfoorce, Bureau of Technical Utility Services (via email only)
John Van Zant, Bureau of Technical Utility Services (via email only)
Office of Consumer Advocate (via email only)
Office of Small Business Advocate (via email only)

2024 Electric Distribution Company Annual Reliability Report



April 30, 2025

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Introduction

PECO Energy (“PECO”) is submitting this report to the Pennsylvania Public Utility Commission (the “Commission”) in accordance with 52 Pa Code 5.423.

PECO is dedicated to delivering safe and dependable electric service to its customers. Serving approximately 1.67 million electric customers, PECO’s coverage spans nearly 2,000 square miles across Bucks, Montgomery, Delaware, Chester, York, and Philadelphia Counties, including the city of Philadelphia.

In 2024, SAIFI, CAIDI, and SAIDI outperformed the Commission’s Benchmarks and Standards for 12-month rolling averages.

SAIFI, CAIDI, and SAIDI performed to the 3-year average standard.

B1: Section 57.195(b)(1)

“The annual reliability report shall include ... an overall current assessment of the state of the system reliability in the electric distribution company’s service territory, including a discussion of the electric distribution company’s current programs and procedures for providing reliable electric service.”

Current Assessment:

PECO’s electric transmission and distribution system is reliable, and its restoration of service when outages occur is safe, rapid, and attentive to customers’ needs. Each year, investments and operational improvements bring more resilience to PECO’s system and better preparedness for storms and other emergencies. As shown in the Commission’s annual reports on electric service reliability in Pennsylvania, PECO’s reliability has been strong for the last decade. Although in 2024, PECO experienced several significant storms, with two PUC excludable storms, PECO’s PUC 10% metrics were below standard and the benchmark.

Annual Reliability Indices for 2024:

In 2024, SAIFI, CAIDI, and SAIDI were below their respective Benchmarks and Standards.

3-Year Average Standard-Reliability Indices:

The 2022-2024 SAIFI, CAIDI, and SAIDI averages were below the 3-Year Average Standard.

Benchmarks and Standards were established on May 7, 2004. No Benchmark or Standard was established for MAIFI.

Programs and Procedures:

PECO Energy continues to stress excellence in fundamentals:

- Safety of our employees and the public
- Emergency response and daily operation
- Thorough preventive and corrective maintenance, including the use of drones.
- Appropriate capacity and design
- Adequate bulk supply
- Appropriate investment via our LTIIIP II plan and baseline
- Enhanced use of automation and new technologies
- Integration of advanced meter infrastructure (AMI, smart meters) into reliability processes

PECO ensures reliable electric service through a comprehensive approach involving a transmission and distribution system designed and built to standards. PECO deploys an all-encompassing equipment and vegetation maintenance program across the entire territory. In 2021, PECO executed the first year of the Company’s filed Reliability & Resiliency Plan Long-term Infrastructure Improvement Plan (LTIIIP), with additional capital investments to construct reliability-related improvements in LTIIIP II through 2025.

Should a storm or other emergency arise, an appropriate emergency response team is assembled via cell phone, email, and Microsoft Teams notification. The trained team performs per the specifications of a thorough, documented, tested emergency response procedure, quickly escalating the magnitude of the response when required, and communicating with the public and government agencies. If necessary, pre-established agreements with local contractors and neighboring utilities are exercised to augment PECO Energy’s workforce. Access to

further supplemental resources has been maintained with the North Atlantic Mutual Assistance Group and the Bureau of Safety and Environmental Enforcement (BSEE).

Management sets clearly defined, challenging reliability goals, communicates them to the workforce, demands meaningful action plans, monitors progress, holds the organization accountable for results. Full-time engineering professionals monitor and analyze reliability trends and changes, and institute capital upgrades and improvements to maintenance, design, construction, and/or operations to ensure that customers continue to enjoy reliable electric service.

B2: Section 57.195(b)(2)

“The annual reliability report shall include... a description of each major event that occurred during the year being reported on, including the time and duration of the event, the number of customers affected the cause of the event, and any modified procedures adopted in order to avoid or minimize the impact of similar events in the future.”

In 2024, PECO experienced two major events as defined by the Commission, as described below:

1. On January 9, 2024, at 14:27, a severe winter storm impacted the PECO service territory, causing heavy snow, hail, and winds across the territory until January 11th, 2024, 02:20. The storm impacted 194,662 customers over a total duration of three days leading to extreme storm restoration efforts. With the assistance of 1,388 workers from PECO’s Exelon sister utilities, mutual assistance utilities, and contractors, PECO employees made repairs and restored service over the next five days. The last restored customer was on 01/14/2024.
2. On July 16th, 2024, 13:54, the PECO service territory was struck with thunderstorms that caused heavy winds, rain, and uprooted trees until July 19th, 2024, 20:34. The storm impacted 170,944 customers, and with the assistance of 1,553 mutual assistance utilities and contractors, PECO restored customers by July 22nd, 2024.

The Commission defines a major event as either of the following:

An interruption of electric service resulting from conditions beyond the control of the EDC that affects at least 10 % of the customers in the EDC’s service territory during the event for a duration of 5 minutes or greater; or
An unscheduled interruption of electric service resulting from an action taken by an EDC to maintain the adequacy and security of the electrical system.

B3: Section 57.195(b)(3)

“The report shall include... a table showing the actual values of each of the reliability indices (SAIFI, CAIDI, SAIDI, and if available, MAIFI) for the electric distribution company’s service territory for each of the preceding 3 calendar years. The report shall include the data used in calculating the indices, namely the average number of customers served, the number of sustained customer minutes interruptions, the number of customers affected, and the minutes of interruption. If MAIFI values are provided, the number of customer momentary interruptions shall also be reported.”

	SAIFI	CAIDI	SAIDI	MAIFI
2024	0.78	96	75	0.90
2023	0.74	138	103	0.80
2022	0.71	99	71	0.76
2021	0.88	187	164	0.91

	SAIFI	CAIDI	SAIDI	MAIFI
2022 – 2024 Average	0.74	111	83	0.82
Benchmark	1.23	112	138	N/A
3-Year Average Standard	1.35	123	167	N/A

	2024	2023	2022	2021
Number of customers served	1,666,498	1,687,053	1,684,405	1,678,055
Sustained customer minutes	125,195,871	173,830,880	118,852,712	275,743,622
Number of customers affected	1,306,959	1,256,802	1,198,241	1,478,394
Number of customer momentary interruptions	1,505,371	1,341,967	1,274,899	1,532,454

B4: Section 57.195(b)(4)

“The report shall include... a breakdown and analysis of outage causes during the year being reported on, including the number and percentage of service outages, the number of customers interrupted, and customer interruption minutes categorized by outage cause such as equipment failure, animal contact, tree related, and so forth. Proposed solutions to identified service problems shall be reported.”

Cause	Service Outages	% of Service Outages	Customer Interruptions	% of Customer Interruptions	Customer Minutes
Animal	1,653	12.6%	40,346	3.1%	2,417,705
Contact/Dig-In	111	0.8%	11,477	0.9%	1,075,115
Equipment Failure	4,356	33.3%	479,112	36.7%	41,788,999
Lightning	214	1.6%	31,125	2.4%	2,713,925
Other	684	5.2%	57,170	4.4%	3,335,927
T&S	25	0.2%	25,432	1.9%	1,086,763
Unknown	381	2.9%	49,669	3.8%	2,750,233
Vegetation-Broken/Uprooted	4,691	35.8%	494,832	37.9%	59,304,437
Vegetation-Ingrowth	635	4.9%	65,341	5.0%	6,420,337
Vehicles	340	2.6%	52,455	4.0%	4,302,430
Total	13,090	100.0%	1,306,959	100.0%	125,195,871

Outages due to equipment and trees are being addressed through PECO’s Long-term Infrastructure Improvement Plans and other reliability programs. Equipment is replaced based on observed trends under reliability programs and obsolescence. Most customer interruptions caused by trees came from broken branches and tree trunks or uprooted trees (37.9% of all customer interruptions), as opposed to ingrowth (5.0% of all outage customer interruptions). PECO continues to address ash tree failures caused by emerald ash borers (invasive insects that cause ash tree deaths) with a vegetation management program to mitigate the threat to its facilities and customer reliability.

PECO has observed an increase in dead and declining ash trees near its electrical facilities. Emerald ash borers (invasive insects that cause ash tree deaths) are known to be concentrated in the eastern United States and have infested areas across the PECO territory. Limb and tree failures caused by emerald ash borers are expected to continue through much of this decade. PECO’s execution of enhanced vegetation maintenance on circuit segments identified through annual reliability performance assessments mitigates risks to facilities and customer reliability.

B5: Section 57.195(b)(5)

“The reports shall include... a list of the major remedial efforts taken to date and planned for circuits that have been on the worst performing 5% of circuits list for a year or more.”

See Appendix A

B6: Section 57.195(b)(6)

“The report shall include... a comparison of established transmission and distribution inspection and maintenance goals/objectives versus actual results achieved during the year being reported on. Explanations of any variances shall be included.”

General Statement on Maintenance Programs Work Prioritization and Scheduling

PECO Energy develops its annual T&D maintenance plan to conform to company-established maintenance cycles and based on current program priority determined by safety, risk, and reliability evaluations. Resources may be reallocated during the maintenance period depending on the impact of key performance areas. There is an adherence to a schedule grace period equivalent to 25% of the maintenance cycle length to allow for scheduling and bundling of work.

PECO Energy’s Distribution Inspection and Maintenance Plan vs. Actual Work for 2024

Maintenance Program	Planned Tasks	Completed Tasks
Recloser Inspections (Number of reclosers inspected)	413	857
Circuit Patrol & Thermography (Number of circuits inspected)	970	988
Pole Inspections (Number of poles inspected)	34,000	40,636
Padmount Transformer Inspections (Number of maintenance tasks performed (e.g. visual inspection, functional testing))	6,577	7,286
Below Ground Transformers (Number of maintenance tasks performed (e.g. visual inspection, functional testing))	1,173	1,278
Substation Inspections (Number of maintenance tasks performed (e.g. visual inspection, predictive/diagnostic maintenance, preventive maintenance) for a variety of substation components)	1,330	1,389
Unit Substations (Number of maintenance tasks performed (e.g. calibration, trip testing))	2,830	2,944

Vegetation Management Preventive Maintenance Program

Maintenance Program	Miles Planned	Miles Completed
Distribution Lift & Manual Trimming	2,967	3,086
Transmission Trim & Removal	198	198

B7: Section 57.195(b)(7)

“The report shall include...a comparison of budgeted versus actual Transmission and Distribution operation and maintenance expenses for the year being reported on in total and detailed by the electric distribution company’s own functional account code or FERC account code as available. Explanations of any variances 10% or greater shall be included.”

Operation and Maintenance Expenses

Functional Account Code	Budget (\$M)	Actual (\$M)	Variance (\$M)
New Business Connections	\$4.1	\$3.0	\$1.1
Capacity Expansion	\$0.3	\$0.3	\$0.0
System Performance	\$90.2	\$93.3	\$3.1
Facility Relocation	\$0.8	\$0.8	\$0.0
Maintenance	\$225.9	\$219.4	\$6.5
Category Totals	\$321.3	\$316.8	\$4.5
Budgeted T&D O&M Expenses		\$321.3	
Actual T&D O&M Expenses		\$316.8	
Variance		\$4.5	
Percent Variance		1.4%	

- **New Business Connections** – Under budget due to less residential development and commercial projects than anticipated.

B8: Section 57.195(b)(8)

“The report shall include... a comparison of budgeted versus actual Transmission and Distribution capital expenditures for the year being reported on in total and detailed by the electric distribution company’s own functional account code or FERC account code as available. Explanations of any variances 10% or greater shall be included.”

Capital Expenses

Functional Account Code	Budget (\$M)	Actual (\$M)	Variance (\$M)
New Business Connections	\$122.0	\$105.4	\$16.6
Capacity Expansion	\$52.5	\$41.8	\$10.7
System Performance	\$735.6	\$807.2	\$71.6
Facility Relocation	\$38.8	\$24.3	\$14.5
Maintenance	\$157.0	\$174.5	\$17.5
Category Totals	\$1,105.9	\$1,153.2	\$47.3
Budgeted Capital Expenses		\$1,105.9	
Actual Capital Expenses		\$1,153.2	
Variance		\$47.3	
Percent Variance		(4.3%)	

- **New Business Connections** – Under budget due to fewer residential development and commercial projects than anticipated.
- **Capacity Expansion** – Under budget due to reallocation of funds to support the increased scope of various system performance programs.
- **Facility Relocation** – Under budget due to decreased scope of work on various relocation projects.
- **Maintenance** – Over budget due to repairing and replacing over- and underground defects caused by increased volume.

B9: Section 57.195(b)(9)

“The report shall include... quantified Transmission and Distribution inspection and maintenance goals/objectives for the current calendar year detailed by system area (i.e., transmission, substation, and distribution).”

PECO Energy’s 2025 Transmission and Distribution Inspection and Maintenance Plan

Per 52 Pa Code Chapter 57.198, PECO’s Biennial Inspection, Maintenance, Repair and Replacement plan filed September 27, 2018.

Maintenance Program	Units (Planned) Annual
Recloser Inspections (Number of reclosers inspected)	413
Circuit Patrol & Thermography (Number of circuits patrolled)	969

Pole Inspections (Number of poles visually inspected)	34,000
Padmount Transformers (Number of transformers visually inspected)	6,441
Below Ground Transformers (Number of transformers visually inspected)	1,184
Substations (Number of substations inspections performed. (e.g. visual inspection, reading of currents, voltages, temperature etc.) for a variety of substation components)	1,330
Unit Substations (Number of unit substations inspections performed.(e.g. visual inspection, reading of currents, voltages, temperature etc.) for a variety of substation components)	2,790

Vegetation Management Preventive Maintenance Program

Maintenance Program	Miles Planned
Distribution Lift & Manual Trimming	2,812
Transmission Trim & Removal	198

B10: Section 57.195(b)(10)

“The report shall include... budgeted transmission and distribution operation and maintenance expenses for the current year in total and detailed by the electric distribution company’s own functional account code or FERC account code as available.”

Functional Account Code	2025 O&M Budget (\$M)
New Business Connections	\$4.2
Capacity Expansion	\$2.1
System Performance	\$112.9
Facility Relocation	\$0.7
Maintenance	\$251.2
Category Totals	\$371.1

B11: Section 57.195(b)(11)

“The report shall include... budgeted transmission and distribution capital expenditures for the current year in total and detailed by the electric distribution company’s own functional account code or FERC account code as available.”

Functional Account Code	2025 Capital Budget (\$M)
New Business Connections	\$113.6
Capacity Expansion	\$162.2
System Performance	\$872.7
Facility Relocation	\$38.9
Maintenance	\$154.5
Category Totals	\$1,341.9

B12: Section 57.195(b)(12)

“The report shall include... significant changes, if any, to the Transmission and Distribution inspection and maintenance programs previously submitted to the Commission.”

- Beginning in 2020, PECO’s padmount transformer inspection cycle was changed from five years to eight years. PECO requested this waiver as part of its Biennial Inspection, Maintenance, Repair Replacement Plan and the Commission granted this waiver.

Appendix A

The following circuits were on our worst-performing 5% of circuits list for a year or more:

BRYAN_002
CURLY_000
ELLWOOD_001
FLINT_132
GLADWYNE_001
GLADWYNE_132
GOLF_002
GOSHEN_351
GROVE_000
HARMONY_003
KENNETT_SQUAR_005
LANDENBERG_000
LEWIS_001
LINE_4100PB
MARSHALLTON_001
MORWOOD_000
NEWLINVILLE_353
PERKIOMEN_363
SADSBURY_000
SCHWENKSVILLE_001
SCHWENKSVILLE_002
SOLEBURY_001
UPPER_DARBY_135
UPPER_PROVIDENCE_343
WAYNE_143
WHITEMARSH_133
WHITEMARSH_163

As of the date of this report, analysis of these circuits continues. Information on remedial efforts taken and planned, in addition to the details provided on the following pages, will be included in future quarterly reliability reports.

Below are the efforts taken to date and planned for these circuits:

BRYAN_002

York County

Completed:

Inspect circuit visually and with thermographic camera
Upgrade primary

CURLY_000

Bucks County

Completed:

Complete corrective reliability work orders
Inspect circuit visually and with thermographic camera
Inspect selected areas of circuit for vegetation issues and correct as needed
Remedial efforts completed

ELLWOOD_001

Bucks County

Completed:

Inspect circuit visually and with thermographic camera
Inspect selected areas of circuit for vegetation issues and correct as needed
Remedial efforts completed

FLINT_132

Montgomery County

Completed:

Complete corrective reliability work orders
Inspect circuit visually and with thermographic camera
Inspect selected areas of circuit for vegetation issues and correct as needed
Install new fusing
Remedial efforts completed

GLADWYNE_001

Delaware County

Completed:

Complete corrective reliability work orders
Inspect circuit visually and with thermographic camera
Inspect selected areas of circuit for vegetation issues and correct as needed
Remedial efforts completed

GLADWYNE_132

Delaware County

Completed:

Inspect circuit visually and with thermographic camera
Upgrade insulators

Upgrade primary

GOLF_002

Chester County

Completed:

Inspect circuit visually and with thermographic camera
Upgrade primary

GOSHEN_351

Chester County

Completed:

Inspect circuit visually and with thermographic camera
Remedial efforts completed

GROVE_000

Chester County

Completed:

Inspect circuit visually and with thermographic camera
Inspect selected areas of circuit for vegetation issues and correct as needed
Remedial efforts completed

HARMONY_003

Chester County

Completed:

Complete corrective reliability work orders
Inspect circuit visually and with thermographic camera
Inspect selected areas of circuit for vegetation issues and correct as needed
Remedial efforts completed

KENNETT_SQUAR_005

Chester County

Completed:

Complete corrective reliability work orders
Inspect circuit visually and with thermographic camera
Inspect selected areas of circuit for vegetation issues and correct as needed
Remedial efforts completed

LANDENBERG_000

Chester County

Completed:

Complete corrective reliability work orders
Inspect circuit visually and with thermographic camera
Inspect selected areas of circuit for vegetation issues and correct as needed
Remedial efforts completed

LEWIS_001

Montgomery County

Completed:

- Install tree resistant wire
- Inspect circuit visually and with thermographic camera

LINE_4100PB

Chester County

Completed:

- Inspect circuit visually and with thermographic camera in January 2025

MARSHALLTON_001

Chester County

Completed:

- Inspect selected areas of circuit for vegetation issues and correct as needed.
- Inspect circuit visually and with thermographic camera in January 2025

MORWOOD_000

Montgomery County

Completed:

- Inspect the circuit visually and with a thermographic camera in January 2025

NEWLINVILLE_353

Chester County

Completed:

- Complete corrective reliability work orders
- Inspect circuit visually and with thermographic camera in January 2025

PERKIOMEN_363

Montgomery County

Completed:

- Inspect circuit visually and with thermographic camera in January 2025

SADSBURY_000

Chester County

Completed:

- Upgrade Primary
- Inspect circuit visually and with thermographic camera in January 2025

SCHWENKSVILLE_001

Montgomery County

Completed:

- Install new FCIS
- Inspect circuit visually and with thermographic camera

SCHWENKSVILLE_002

Montgomery County

Completed:

- Complete corrective reliability work orders
- Inspect selected areas of circuit for vegetation issues and correct as needed
- Upgrade insulators
- Inspect circuit visually and with thermographic camera

SOLEBURY_001

Bucks County

Completed:

- Complete corrective reliability work orders
- Inspect selected areas of circuit for vegetation issues and correct as needed
- Upgrade insulators
- Complete corrective reliability work orders
- Inspect circuit visually and with thermographic camera in January 2025

UPPER_DARBY_135

Delaware County

Completed:

- Complete corrective reliability work orders
- Inspect circuit visually and with thermographic camera in January of 2025

UPPER_PROVIDENCE_343

Montgomery County

Completed:

- Complete corrective reliability work orders
- Inspect circuit visually and with thermographic camera

WAYNE_143

Delaware County

Completed:

- Inspect circuit visually and with thermographic camera
- Install tree resistant wire
- Inspect circuit visually and with thermographic camera in January 2025

WHITEMARSH_133

Montgomery County

Completed:

- Complete corrective reliability work orders
- Install new fusing
- Upgrade fusing
- Upgrade secondary
- Inspect circuit visually and with thermographic camera in January 2025

WHITEMARSH_163

Montgomery County

Completed:

Complete corrective reliability work orders

Inspect circuit visually and with thermographic camera in January 2025

Appendix B

New Business

This work category includes all the facility work required to add a new customer or to increase the load to an existing customer. The facility work will include the facilities required to directly connect the customer to the system and the upgrade/replacement of any existing facility to serve the requested additional load.

Capacity Expansion

This work category includes only capacity work generated by the system design engineer to prevent system failure and to assure the delivery of voltage as specified in the tariff. The addition of new substations and substation enlargements for future load growth will also be included in this project.

System Performance

This work category includes projects designed to upgrade, modify or improve the performance of the distribution system. Also included in this category are indirect costs in support of all categories and one-time accounting adjustment items.

Facility Relocation

This work category includes all requests for relocation of PECO facilities including municipal as well as customer related relocation requests.

Maintenance

This work category includes work performed to repair and restore equipment to its normal state of operation, along with planned preventive maintenance work such as visual and thermographic inspections and tree trimming around transmission and distribution lines.

Storm Funds

Incremental costs (primarily; overtime, contractors, mutual assistance, and meals) incurred while responding to major storms (storms that meet customer outage and duration criteria).