FirstEnergy

2800 Pottsville Pike
PO Box 16001
Reading, PA 19612-6001

Tori L. Giesler
(610) 921-6658
tgiesler@firstenergycorp.com

April 30, 2018

VIA UNITED PARCEL SERVICE

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor
Harrisburg, PA 17120

M-2016-2522508

Re: Joint 2017 Annual Reliability Report – Metropolitan Edison Company, Pennsylvania Electric Company and Pennsylvania Power Company and West Penn Power Company

Dear Secretary Chiavetta,

Pursuant to 52 Pa. Code § 57.195(a) and (b), enclosed for filing are two copies of the Joint 2017 Annual Reliability Report ("Joint Report") of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company (collectively, the "Companies"). Please date-stamp the additional copy and return it in the postage-paid envelope provided.

Please contact me if you have any questions.

Sincerely,

Tori L. Giesler

dlm
Enclosures

c: As Per Certificate of Service
D. Searfoorce – Bureau of Technical Utility Services (via email and first class mail)
D. Washko – Bureau of Technical Utility Services (via email and first class mail)
J. Van Zant – Bureau of Technical Utility Services (via email and first class mail)

Met-Ed A FirstEnergy Company | Penelec A FirstEnergy Company | PennPower A FirstEnergy Company | WestPenn Power A FirstEnergy Company

Joint 2017 Annual Reliability Report

Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, And West Penn Power Company

Pursuant to 52 Pa. Code § 57.195(a) and (b)

Joint 2017 Annual Reliability Report
Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company
Pursuant to 52 Pa. Code Chapter § 57.195(a) and (b)

The following Joint 2017 Report ("Report") is submitted to the Pennsylvania Public Utility Commission ("PaPUC" or "Commission") on behalf of Metropolitan Edison Company ("Met-Ed"), Pennsylvania Electric Company ("Penelec"), Pennsylvania Power Company ("Penn Power"), and West Penn Power Company ("West Penn") (collectively, the "Companies").

Section 57.195(b)(1) *An overall current assessment of the state of the system reliability in the EDC's service territory including a discussion of the EDC's current programs and procedures for providing reliable electric service.*

Current Assessment of the State of System Reliability

In 2017, the Companies completed several projects on their electrical system that enhanced service reliability, and they continue to focus on their overall goal to reduce the number and duration of service interruptions their customers might experience. The Companies have put into place plans, which are described in various filings, to further support and improve reliability performance. These filings include Corrective Action Plans ("CAP"),[1] Reliability Plans,[2] Worst Performing Circuit ("WPC") Plans,[3] and the Long Term Infrastructure Improvement Plans ("LTIIP").[4] Highlighted below are components of these plans including actions completed in 2017 and planned for 2018 as well as additional items developed to target reliability.

MET-ED

Met-Ed acknowledges that 2017 was a challenging year for reliability performance as it did not achieve its twelve-month reliability indices for its System Average Interruption Duration Index

---

[1] In December 2014, Penelec submitted a CAP designed to improve overall reliability and achieve benchmark performance in all three indices by year-end 2018. The projects and initiatives included in the CAP were for the period of 2015-2018.

[2] On March 30, 2015, the Commission issued an order directing Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company to prepare and file a revised implementation plan relating to specific topics addressed in the report issued by the Commission's Bureau of Audits on February 12, 2015. *Implementation Plan for the Focused Management Audit of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company*, Docket Nos. D-2013-2365991, D-2013-2365992, D-2013-2365993, D-2013-2365994.

[3] See Footnote 2.

[4] On October 19, 2015, pursuant to Section 1352 of the Pennsylvania Public Utility Code, 52 Pa. Code §§ 121.1 et seq. and the Commission's final order in Implementation of Act 11 of 2012, Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company filed their respective petitions for approval of their LTIIPS at Docket Nos. P-2015-2508942, P-2015-2508936, P-2015-2508948, P-2015-2508931. On February 11, 2016, the Commission approved the plans.

("SAIDI"), System Average Interruption Frequency Index ("SAIFI"), and Customer Average Interruption Duration Index ("CAIDI"). This was largely due to the seven reportable outage events experienced in 2017 (an increase of 250% over a three-year average of two reportable events). The other driver of reliability performance in 2017 was the increase in the number of tree-related outages experienced. In 2017, a total of 46% of the customer minutes of interruption ("CMI") was due to tree-related outages (an increase of 28% over tree-related CMI in 2016). To address this, the Company will target $24 million of combined capital and maintenance to its vegetation management program, which is an increase of $6.8 million over 2017. Furthermore, Met-Ed will commit an additional $9 million for LTIIP qualified reliability projects in 2018. Details on the additional spend and plans for improving reliability are further described below.

Vegetation Management

Standard specification as part of cycle-based tree trimming is the foundation of vegetation management. This tree trimming removes selected incompatible trees within the clearing zone corridor, removes certain defective limbs that are overhanging primary conductors, controls selected incompatible brush, and removes off right-of-way priority trees.[5] As part of its standard specification, Met-Ed performed tree trimming on 2,895 miles (which included the removal of 7,083 priority trees) in 2017 and plans to trim 2,940 miles in 2018 to the standard specification.

Enhanced tree trimming complements the standard specification by removing healthy limbs overhanging primary conductors. Met-Ed Forestry and Engineering performed a joint study using the results of an external audit to determine which areas should receive enhanced tree trimming. The purpose of the audit, conducted in 2017 on all three-phase circuit miles, was to identify immediate hot spots and maximize future vegetation management effectiveness. The audit identified, by circuit, the number of trees overhanging conductors, the number of declining Ash trees and the number of imminent threat trees. Met-Ed performed enhanced trimming on 300 miles in 2017. In total, Met-Ed has allocated $5.5 million to its enhanced tree trimming program in 2018 to perform trimming on an additional 559 miles.

The Company has begun removing Ash trees affected by the Emerald Ash Borer. In 2018, Met-Ed will implement a formal program to proactively remove Ash trees off right-of-way. Ash trees are affected by the larvae of the Emerald Ash Borer which bore through an Ash tree's bark to feed on the tree tissue. The Emerald Ash Borer is a significant threat as it has a 100% mortality rate

[5] Trees located off the right-of-way that are either dead, diseased, declining, structurally compromised, severely leaning or significantly encroaching onto the right-of-way.

on Ash trees across areas infested. By the end of 2021, it is anticipated that the entire Met-Ed service territory will have been assessed and identified Ash trees removed. In 2018, Met-Ed will invest $1.5 million in removing trees affected by the Emerald Ash Borer.

Post-storm circuit patrols, first implemented in 2016, target the areas with high tree-related outages. Circuit patrols identify trees damaged in a storm that may eventually lead a future outage. Once identified, the tree is removed. In addition, damaged equipment identified as part of the circuit patrol is repaired or replaced. The Company performed these patrols in 2017 and plans to continue the practice in 2018.

Through additional funding and strategic planning, Met-Ed is positioning itself to improve reliability by reducing the number of outages caused by trees by the removal of overhang on the three-phase system, removal of all identified priority trees located off the right-of-way, and the removal of Ash trees.

Infrastructure Upgrades & Technological Improvements

Met-Ed proactively upgrades its infrastructure and improves its technology, replacing equipment as needed and performing circuit rehabilitation on select circuits. In 2017, the benefit of these upgrades and improvements was realized when seven of the original sixteen circuits targeted in Met-Ed's WPC plan as part of the Pennsylvania Management Audit Implementation Plan showed improved performance. As a result, they no longer meet the worst performing circuit criteria identified in the Commission's March 30, 2016 Order.

Infrastructure upgrades and technological improvements are broken down into three categories: circuit, substation and technology, as described in detail below. See Table 1 for infrastructure upgrades and technological improvements completed in 2017 and planned for 2018.

Circuit

- Circuit ties and loops continue to be built between radial sections of circuits. When ties and loops are available, circuits can be switched during outages to enable faster service restoration.
- Targeted circuit rehabilitation is being performed in zones one and two[6], focusing on circuits having a high rate of equipment and line failure and animal-caused outages. Equipment that

[6] Zone one is defined as the portion of the circuit from the substation breaker to the first protective device. Zone two is defined as the three-phase conductor and devices after the first protective device.

may be replaced includes crossarms, capacitors, insulators, lightning arresters and connectors.

- Wood poles identified by a qualified inspector as having degraded beyond restorable condition are being replaced, while poles that are restorable are being reinforced.
- Bare concentric neutral cable is being replaced as part of Met-Ed's underground distribution residential cable ("URD") cable replacement program. This type of cable was manufactured without an insulating jacket thereby causing the concentric neutral wire to corrode and fail prematurely.
- To reduce the scope of outages, fuses and other protective devices are being installed on circuits selected based on overall performance as well as protection needs.
- Porcelain cutouts are being replaced with more robust polymer to reduce the number of recloser and circuit breaker lockouts and other equipment damage.

Substation

- The transformer at the School Lane substation will be replaced with a pad mounted transformer and line regulators will be installed for voltage control.

Technology

- Existing gang operated air brakes ("GOAB"), disconnect switches and oil circuit reclosers are being replaced with supervisory control and data acquisition ("SCADA") controlled switches that will allow for remote operation to restore service to customers when an outage occurs. Remote switching eliminates the need to dispatch crews to manually operate the switches. The result is fewer customers affected and reduced outage durations.

Table 1 Met-Ed Infrastructure Upgrades and Technological Improvements

Project	2017 Completed	2018 Planned
Circuit Ties and Loops	4	2
Circuit Rehabilitation (number of circuits)	11	7
Wood Pole Reinforcement/Replacement	368	711
URD Cable Replacement (feet)	20,022	16,000
Fuse Replacement	433	550
Circuit Porcelain Cutout Replacement (number of circuits)	5	5
Substation Transformer Replacement	0	1
SCADA Installation (devices)	28	114

In 2017, Met-Ed invested $14.9 million in infrastructure upgrades and technical improvements and will target $31.6 million in 2018 - an approximate a $9 million increase over the originally planned expenditures - to continue to reduce line and equipment failures.

Infrared Inspections

In 2018, Met-Ed will begin an infrared inspection program on a four-year cycle completing 25% of three-phase circuit miles annually. Approximately 1,080 miles are planned for an infrared inspection in 2018.

PENELEC

Penelec acknowledges that 2017 was a challenging year for reliability performance as it was only able to achieve its twelve-month standard for CAIDI. A major contributor to this was the ten reportable outage events in 2017 (a 150% increase over a three-year average of four events). Also contributing to Penelec's reliability challenges was a 23% increase in tree-related CMI when compared to 2016. To address this, the Company will target $29.1 million of combined capital and maintenance to its vegetation management program in 2018, which is an increase of $4 million over 2017. Penelec has also accelerated approximately $15 million of the Commission-approved LTIIP funding from 2019 and 2020 into 2018. Details on additional spend and plans for improving reliability are described below.

Vegetation Management

Standard specification as part of cycle-based tree trimming is the foundation of vegetation management. This trimming removes selected incompatible trees within the clearing zone corridor, removes certain defective limbs that are overhanging primary conductors, controls selected incompatible brush, and removes off right-of-way priority trees. In 2017, Penelec performed tree trimming on 3,792 miles (which includes the removal of 131,290 priority trees) and plans to trim 3,636 miles in 2018.

Annually, Engineering conducts a study of forestry operations to determine the areas where more aggressive trimming practices should be implemented. Results of the 2017 study showed that twenty-three of Penelec's circuits totaling 1,388 miles, or 8% of the total mileage, accounted for 24% of Penelec's total outages over the past five years. These circuits are generally long and are located in heavily forested areas. As a result of the study, the trimming cycle for six circuits was reduced to every three years, and reduced to every four years for an additional seventeen circuits. Beginning in 2018, Penelec will concentrate its efforts on those circuits by allocating $4.4 million to accelerate the trimming of approximately 665 miles. The remaining 723 miles will be trimmed in 2019 and 2020.

In addition, in 2017, Penelec began removing brush in the right-of-way to create a clear access path for line trucks. In the past, common vegetation practices allowed compatible low-growing vegetation on the right-of-way in order to keep high-growing vegetation from becoming established. Over time, the low-growing vegetation has grown to a height and density where it has begun to obstruct the right-of-way, making it difficult to access. With the improvements Penelec is making, crews will not have to wait for an area to be cleared of vegetation before repairs can be made.

Trees affected by the Emerald Ash Borer continue to be removed. The program, first implemented in 2015, proactively removes Ash trees off the right-of-way. In 2017, approximately 44,000 Ash trees were removed. By the end of 2019 it is anticipated that the entire Penelec service territory will have been assessed and identified Ash trees removed. In 2017, Penelec invested $4.5 million removing trees affected by the Emerald Ash Borer and will invest $5 million in 2018.

Finally, Penelec has implemented post-storm patrols in areas where high numbers of tree-caused outages have occurred. Post-storm circuit patrols, first implemented in 2016, target areas with high tree-related outages. Circuit patrols identify trees damaged during a storm that may eventually lead to a future outage. Once identified, the tree is removed. In addition, damaged equipment identified as part of the circuit patrol is repaired or replaced. Penelec continued this practice in 2017 and plans to maintain this practice in 2018.

Through additional funding and strategic planning, Penelec is positioning itself to improve reliability by reducing the number of outages caused by trees by the removal of overhang on the three-phase system, removal of all identified priority trees located off the right-of-way, and the removal of Ash trees.

Infrastructure Upgrades and Technological Improvements

Penelec proactively upgrades its infrastructure and improves its technology by replacing equipment as needed and performing circuit rehabilitation on select circuits, focusing on the 34.5 kV system. In 2017, Penelec continued to experience the benefits of the circuit rehabilitation as the number of equipment failure incidents have decreased 14% compared to the previous three-year average. Also, Penelec has seen benefits from installation of SCADA devices which has shortened the duration of customer outages such that there was a 94% increase in the number of customers that would be restored in less than five minutes compared to the previous three-year average.

Infrastructure upgrades and technological improvements are broken down into three categories: circuit, substation and technology, as described in detail below. See Table 2 for infrastructure upgrades and technological improvements completed in 2017 and planned for 2018.

Circuit

- Targeted circuit rehabilitation is being performed in zones one and two, focusing on circuits having a high rate of equipment and line failure and animal-caused outages. Equipment that may be replaced includes crossarms, capacitors, insulators, lightning arresters and connectors.
- Porcelain cutouts are being replaced with a more robust version constructed from polymer which is likely to reduce the number of recloser and circuit breaker lockouts and other equipment damage.
- Circuit ties and loops continue to be built between radial sections of circuits. When ties and loops are available, circuits can be switched during outages to enable faster service restoration.
- Reliability improvements are being performed on clusters of customers that experience frequent or repeated outages. The Customer Service Improvement ("CSI") program is designed to reduce the frequency of outages at the customer level and is often initiated from customer complaints. In addition to enhancing system performance, the program is a means to reduce the frequency of outages at the customer level that might not otherwise be addressed when targeting overall system metrics.
- Advanced protective devices such as electronically controlled reclosers and switches with modernized communication are being installed to allow for additional protection coordination.
- To reduce the scope of outages, fuse protection and coordination recommendations on the 34.5 kV system will be constructed and implemented based on full circuit coordination studies.

Substation

- Brown porcelain cap and pin style insulators that are prone to failure, as well as switch insulators and arresters, are being replaced.
- Penelec has identified a brand of circuit breaker that fails to operate properly causing unreliable breaker operations during line outages. As a result, these select circuit breakers at 34.5 kV substations are being replaced.

Technology

- Additional SCADA controlled devices are being installed at locations on both the distribution and 34.5kV systems allow for remote operation to restore service to customers when an outage occurs. Remote switching eliminates the need to dispatch crews to manually operate the switches. The result is fewer customers affected and reduced outage durations.

Table 2 – Penelec Infrastructure Upgrades and Technological Improvements

Project	2017 Completed	2018 Planned
Circuit Rehabilitation (number of circuits)	12	21
Porcelain Cutout Replacement	80	57
Circuit Ties and Loops	1	1.33
CSI Projects	31	30
Advanced Protective Devices	2	18
Fuse Protection (number of circuits)	6	5
Cap and Pin Insulator Replacement	15	30
Substation Breakers	16	40-50
SCADA Installation	21	25

In 2017, Penelec invested $20.02 million in infrastructure upgrades and technical improvements, and will target $30.8 million in 2018 in LTIIP infrastructure upgrades and technological improvements, which is approximately a $15 million increase over the original planned expenditures for 2018.

Infrared Inspections

Penelec began performing infrared inspections in 2017 on the three-phase sections of circuits receiving a visual inspection. In 2017, 1,732 circuit miles were inspected, and 1,843 circuit miles are planned to be inspected in 2018. Infrared inspections will be performed on a five-year cycle.

PENN POWER

In May 2017, Penn Power experienced weather-related outages for which restoration activities were both delayed and extended significantly due to proactive steps taken to ensure Penn Power line worker safety following an employee fatality that occurred immediately prior to the weather event. Despite this, in 2017, Penn Power achieved its benchmark, three-year and twelve-month reliability performance standards in SAIFI and its three-year and twelve-month reliability performance standards in SAIDI. However, this single event resulted in 753 minutes of CAIDI and 52 minutes of SAIDI and without it, Penn Power would have achieved its twelve-month CAIDI standard and benchmark performance for SAIDI. While this single event was the driver of Penn

Power's CAIDI performance, it also observed a 158% increase in tree-related CMI in 2017 over 2016, which further contributed to Penn Power not achieving its twelve-month CAIDI. To address this, Penn Power will target $9.7 million of combined capital and maintenance to its vegetation management program in 2018, and has accelerated approximately $7 million of its Commission-approved LTIIP funding from 2019 and 2020 into 2018. Details on additional spend and plans for improving reliability are described below.

Vegetation Management

Standard specification as part of cycle based tree trimming is the foundation of vegetation management. This tree trimming removes selected incompatible trees within the clearing zone corridor, removes certain defective limbs that are overhanging primary conductors, controls selected incompatible brush, and removes off right-of-way priority trees. As part of its standard specification, Penn Power performed tree trimming on 1,187 miles (which includes the removal of approximately 25,000 priority trees) in 2017. In addition, Penn Power plans to perform cycle based trimming on 1,149 miles in 2018.

Enhanced trimming complements cycle based trimming by removing heathy limbs overhanding primary conductors. Penn Power has changed its approach to focus on trimming all zones of the top five worst performing circuits, where outages were primarily caused by trees, in an effort to improve the reliability of those circuits. As a result, trimming is performed on fewer miles. In 2017, Penn Power performed enhanced trimming on 685 miles of circuits. In 2018, with a new focus on the top five worst performing circuits and an additional $2 million investment, Penn Power will perform the aggressive removal of off right-of-way trees on 418 miles of circuits.

In addition, in 2016, Penn Power began removing brush in the right-of-way to create a clear access path for line trucks. In the past, common vegetation practices allowed compatible low-growing vegetation on the right-of-way in order to keep high-growing vegetation from becoming established. Over time, the low-growing vegetation has grown to a height and density where it has begun to obstruct the right-of-way, making it difficult to access. With the improvements Penn Power is making, crews will not have to wait for an area to be cleared of vegetation before repairs can be made.

Post-storm circuit patrols, first implemented in 2016, target the areas with high numbers of tree-related outages. Circuit patrols identify trees damaged in a storm that may eventually lead a future outage. Once identified, the tree is removed. In addition, damaged equipment identified as

part of the circuit patrol is repaired or replaced. Penn Power continued this practice in 2017 and will maintain this practice in 2018.

Through funding and strategic planning, Penn Power is positioning itself to improve reliability by reducing the number of outages caused by trees by the removal of overhang on the three-phase system and removal of all identified priority trees located off the right-of-way.

Infrastructure Upgrades and Technological Improvements

Penn Power proactively upgrades its infrastructure and improves its technology, replacing equipment as needed and performing circuit rehabilitation on select circuits. The installation of SCADA controlled devices on the 23 kV system continues to improve 23 kV CAIDI. In 2017, Penn Power experienced a 74% decrease in 23 kV CAIDI minutes when compared to 2016. The Company also continues to benefit from the addition of circuit ties installed in 2015 and 2016 which have resulted in approximately a 50% decrease in CMI in 2017. Infrastructure upgrades and technological improvements are broken down into three categories: circuit, substation and technology, as described in detail below. See Table 3 for infrastructure upgrades and technological improvements completed in 2017 and planned for 2018.

Circuit

- Switches and fuses are being installed on unprotected overhead circuits for improved line sectionalizing capability, reducing the scope of an outage and allowing for quicker isolation and restoration. In addition, poles, reclosers, cutouts, arresters, fault indicators and animal guards may be replaced or installed to ensure proper line sectionalizing.
- Circuit ties and loops continue to be built between radial sections of circuits. When ties and loops are available, circuits can be switched during outages to enable faster restoration. In addition, Penn Power continues to add new substations which provide a new source to serve customers and additional capacity.
- Smaller, aging overhead conductors are being replaced to improve energy efficiency, increase capacity and improve operational flexibility.
- Bare concentric neutral cable is being replaced as part of Penn Power's URD cable replacement program. This type of cable was manufactured without an insulating jacket thereby causing the concentric neutral wire to corrode and fail prematurely.
- Wood poles identified by a qualified inspector as having degraded beyond restorable condition are being replaced, while poles that are restorable are being reinforced.

Substation

- Circuit breakers, station transformers and other substation equipment, such as insulators, switches, buses, arresters and conductors that are obsolete or in poor condition are being replaced with new equipment. Proactively replacing older equipment increases substation reliability and reduces the occurrence of equipment failure.

Technology

- Additional SCADA devices are being installed where circuit conditions and system performance warrant. Remote SCADA controlled devices allow for remote operation to restore service to customers when an outage occurs. Remote switching eliminates the need to dispatch crews to manually operate the switches. The result is fewer customers affected and reduced outage durations.

Table 3 - Penn Power Infrastructure Upgrades and Technological Improvements

Project	2017 Completed	2018 Planned
Line Sectionalizing	6	6-10
Circuit Ties and Loops	10	15
Overhead Conductor Replacement (miles)	4.3	10
URD Cable Replacement Program (feet)	25,021	23,000
Wood Pole Reinforcement/Replacement[7]	564	270
Substation Equipment Replacement (units)	33	24
SCADA Installation	14	28

In 2017, Penn Power invested $17.85 million in infrastructure upgrades and technological improvements and will target $18.95 million in LTIIP infrastructure upgrades and technological improvements, which is approximately a $7 million increase over the original planned expenditures for 2018.

Infrared Inspections

Penn Power performs infrared inspections on the three-phase sections of worst performing circuits that carry the most customer load. In addition, the three-phase sections of key circuits identified by Engineering also receive an infrared inspection. Penn Power does not keep records of circuit miles scanned.

[7] In 2017 Penn Power accelerated the reinforcement of over 290 poles, eliminating the backlog of restorable poles.

WEST PENN

West Penn continues its focus on reducing long duration tree-related outages and line and equipment failure. In 2017, West Penn achieved its benchmark, three-year rolling and twelve-month reliability performance standards in CAIDI. In addition, West Penn achieved its three-year rolling and twelve-month reliability performance standards in SAIDI. West Penn did not achieve its twelve-month standard for SAIFI. This was largely due to eleven reportable outage events experienced in 2017 (an increase of 120% over a three-year average of five reportable events). In addition, West Penn experienced a 46% increase in the number of outages due to trees in 2017. To address this, the Company will target $38.5 million of combined capital and maintenance into its vegetation management program in 2018, which is an increase of $4.7 million over 2017. West Penn has also accelerated approximately $3 million of the Commission-approved LTIIP funding from 2019 and 2020 into 2018. Details on additional spend and plans for improving reliability are described below.

Vegetation Management

Standard specification as part of cycle based tree trimming is the foundation of vegetation management. This tree trimming removes selected incompatible trees within the clearing zone corridor, removes certain defective limbs that are overhanging primary conductors, controls selected incompatible brush, and removes off right-of-way priority trees. As part of its standard specification, West Penn performed tree trimming on 4,667 miles (which includes the removal of approximately 112,000 priority trees) in 2017, and plans to trim 4,584 miles in 2018. In addition, West Penn will allocate an additional $2.3 million dollars in 2018 for removing priority trees.

Enhanced specification tree trimming complements the standard specification by removing overhanging primary conductors. West Penn performed enhanced specification trimming on approximately 350 miles in 2017 and plans to perform enhanced trimming on approximately 233 miles in 2018.

To better understand the scope of off right-of-way tree challenges, West Penn contracted a third-party vendor in 2018 to conduct a study focusing on priority trees. Detailed information on the trees, such as the number, type, trunk diameter, proximity to the center of the right of way and reason why it was a priority tree, is being collected. Upon a complete review of the results, West Penn will have a better understanding of the scope of priority trees and any potential opportunities for making the West Penn system more reliable.

Trees affected by the Emerald Ash Borer continue to be removed. The program, first implemented in 2014, proactively removes Ash trees off right-of-way. In 2017, approximately

44,819 Ash trees were removed. By the end of 2022, it is anticipated the entire West Penn service territory will have been assessed and identified Ash trees removed. In 2017, West Penn invested $6.1 million removing trees affected by the Emerald Ash Borer. In 2018 West Penn will invest $6.9 million to remove approximately 46,000 Ash trees.

Lastly, post-storm circuit patrols, implemented in 2016, target the areas with high numbers of tree-related outages. Circuit patrols identify trees damaged in a storm that may eventually lead a future outage. Once identified, the tree is removed. In addition, damaged equipment identified as part of the circuit patrol is repaired or replaced. West Penn continued this practice in 2017 and plans to maintain this practice in 2018.

Through additional funding and strategic planning, West Penn is positioning itself to improve reliability by reducing the number of outages caused by trees by the removal of overhang on the three-phase system, removal of all identified priority trees located off the right-of-way and the removal of Ash trees.

Infrastructure Upgrades and Technological Improvements

West Penn proactively upgrades its infrastructure and improves its technology, replacing equipment as needed and performing circuit rehabilitation on select circuits. In 2017, West Penn continued to experience the benefits of circuit rehabilitation as the number of equipment and line failures continue to decrease. In 2017, equipment and line failure causes as a percent of total SAIFI exceeded its 2017 goal by 7.5%.

Infrastructure upgrades and technological improvements are broken down into three categories: circuit, substation and technology, as described in detail below. See Table 4 for infrastructure upgrades and technological improvements completed in 2017 and planned for 2018.

Circuit

- New fused cutouts are being installed to improve circuit protection based on a coordination review. Circuits are selected based on customer count, past reliability and average customers per fuse.
- Targeted circuit rehabilitation is being performed in zones one and two, focusing on circuits having a high rate of equipment and line failure and animal-caused outages. Equipment that may be replaced includes crossarms, capacitors, insulators, lightning arresters and cutouts.
- Select Worst Performing Circuits have been targeted for enhanced circuit rehabilitation in zones one and two, which can include hardware rehabilitation, coordination review, installation of additional protective devices as well as reclosers.

- Bare concentric neutral cable is being replaced as part of West Penn's URD cable replacement program. This type of cable was manufactured without an insulating jacket thereby causing the concentric neutral wire to corrode and fail prematurely.
- Improvement projects focusing on clusters of customers experiencing multiple interruptions ("CEMI") of line protection devices are being implemented to enhance system performance as wells as reduce frequency of outages at the customer level that might not be addressed when targeting overall system metrics.
- Wood poles identified by a qualified inspector as having degraded beyond restorable condition are being replaced, while poles that are restorable are being reinforced.

Substation

- Batteries reaching the end of their useful life are being replaced. If the batteries are not replaced, the potential exists for the mis-operation of substation equipment which could cause a possible outage.
- Reclosers reaching the end of their useful life are being replaced. Replacement will ensure proper operation to clear line faults and work properly with upstream and downstream line equipment to prevent an unnecessary outage.
- Arresters on transformer banks made from silicon carbide are being replaced with polymer metal oxide varistor ("MOV") arresters. MOV arresters provide better protection to the transformer making it less likely to have a catastrophic failure.
- Exit cables that were manufactured without an insulating jacket thereby causing the concentric neutral wire to corrode and fail prematurely, are being replaced. By replacing these exit cables, West Penn will reduce the interruptions to a circuit associated with the cable as well as the long interruption times associated with the replacement.

Technology

- New electronic reclosers with SCADA control are being installed at targeted substations as part of the enhanced overcurrent protection program. Adding SCADA control to electronic reclosers in select substations with existing SCADA capabilities limits the number of customers affected, provides additional monitoring and allows for remote switching to restore customers at the circuit level more quickly.
- Aging electro-mechanical relay controls and switches and automated subtransmission switching locations are being replaced with newer technology. The installation of SCADA controlled reclosers and switches and automatic switch modernization will provide enhanced sectionalizing for larger blocks of customers at the substation level. The SCADA

controlled switches are designed to allow for remote switching to restore large blocks of customers more quickly.

Table 4 - West Penn Infrastructure Upgrades and Technological Improvements

Project	2017 Completed	2018 Planned
Fuse Installation	60	100-120
Circuit Rehabilitation (number of circuits)	44	35-45
Worst Performing Circuit Rehabilitation (number of circuits)	8	6-8
URD Cable Replacement Program (feet)	8,392	7,920
CEMI Projects	21	40-50
Wood Pole Reinforcement/Replacement	273	270
Replace Substation Batteries	14	6-10
Replace Substation Reclosers	30	30
Replace Substation Transformer Arresters	25	50-60
Underground Substation Exit Cable Replacement	13	10
Enhanced Overcurrent Protection Recloser Installation	28	20-30
Sub-transmission Modernization and Automation (reclosers and switches)	72	50-55

West Penn invested $17.66 in 2017 and will target $18.51 million in LTIIP infrastructure upgrades and technological improvements in 2018, which is approximately a $3 million increase over the original planned expenditures for 2018.

Infrared Inspections

West Penn performed infrared inspections on all three-phase portions of zone one in 2017. In 2018, infrared inspections will be performed on high impact zone two three-phase line segments as well as approximately one-third of the three-phase circuits in zone one. West Penn continues to review the results of the inspections to determine the optimal inspection frequency. West Penn performed infrared inspections on 1,741 miles in 2017. In 2018, West Penn plans to preform infrared inspections on 2,500 miles.

CONCLUSION

The Companies continue to make investments in their electric systems and employ various programs and projects to improve reliability and limit the scope of outages. All of the work described above is designed to move toward benchmark reliability performance to be achieved by year-end 2018. The Companies are committed to providing customers with safe and reliable electric service and look forward to seeing the benefits these projects and programs will provide in future years.

Reliability Results

The table below, taken from the 4th Quarter 2017 Joint Reliability Report, shows that five of twelve reliability indices in 2017 were better than the Commission's twelve-month standards (shown in green) with two of the indices being better than benchmark.

4Q 2017 (12-Mo Rolling)	Met-Ed			Penelec			Penn Power			West Penn		
	Benchmark	12-Month Standard	12-Month Actual	Benchmark	12-Month Standard	12-Month Actual	Benchmark	12-Month Standard	12-Month Actual	Benchmark	12-Month Standard	12-Month Actual
SAIFI	1.15	1.38	1.47	1.26	1.52	1.73	1.12	1.34	1.06[8]	1.05	1.26	1.29
CAIDI	117	140	147	117	141	138	101	121	150	170	204	166[9]
SAIDI	135	194	217	148	213	239	113	162	160	179	257	214
MAIFI[10]			1.29			3.76			0.89			
Customers Served[11]	561,039			580,349			162,868			714,821		
Number of Sustained Interruptions	10,662			12,735			3,231			11,989		
Customers Affected	827,461			1,001,129			173,036			919,673		
Customer Minutes	121,882,261			138,523,052			26,001,026			152,701,813		
Number of Customer Momentary Interruptions	723,868			2,182,313			144,557					

[8] Penn Power's SAIFI achieved benchmark performance or better.
[9] West Penn's CAIDI achieved benchmark performance or better.
[10] MAIFI values are not available for West Penn.
[11] Represents the average number of customers served during the reporting period.

Section 57.195(b)(2) *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 to avoid or minimize the impact of similar events in the future.*[12]

Major Events

FirstEnergy Company	Customers Affected	Time and Duration of the Event		Cause of the Event	Commission Approval Status
Penn Power	16,557	Duration	65 hours, 31 minutes	High winds	Approved April 5, 2017
		Start Date/Time	March 8, 2017 1129		
		End Date/Time	March 11, 2017 0430		
West Penn	77,458	Duration	103 hours, 36 minutes	Thunderstorms and high winds	Approved July 5, 2017
		Start Date/Time	May 1, 2017 1309		
		End Date/Time	May 5, 2017 2045		
Penelec	95,607	Duration	124 hours, 10 minutes	Thunderstorms and high winds	Approved August 8, 2017
		Start Date/Time	May 1, 2017 1135		
		End Date/Time	May 6, 2017 1545		
West Penn	1,665	Duration	43 hours, 5 minutes	Flooding	Approved August 24, 2017
		Start Date/Time	June 23, 2017 1655		
		End Date/Time	June 25, 2017 1200		
Penelec	1,111	Duration	40 hours, 11 minutes	Flooding	Approved October 3, 2017
		Start Date/Time	July 23, 2017 2221		
		End Date/Time	July 25, 2017 1432		
West Penn	3,748	Duration	42 hours, 16 minutes	Flooding	Approved October 3, 2017
		Start Date/Time	July 28, 2017 1829		
		End Date/Time	July 30, 2017 1245		
Penn Power	19,298	Duration	47 hours, 24 minutes	Thunderstorms and high winds	Approved January 5, 2018
		Start Date/Time	November 5, 2018 1856		
		End Date/Time	November 7, 2018 1820		

[12] For purposes of this Joint Report, all reliability figures are based upon the Pennsylvania Public Utility Commission's definitions for momentary outages and major events pursuant to 52 Pa. Code § 57.192.

Section 57.195(b)(3) *A table showing the actual values of each of the reliability indices (SAIFI, CAIDI, SAIDI, and if available, MAIFI) for the EDC'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.*

Reliability Indices

Historic 12-Month Rolling Reliability Indices				
	Index	**2015**	**2016**	**2017**
Met-Ed	SAIFI	1.19	1.44	1.47
	CAIDI	113	124	147
	SAIDI	136	178	217
	MAIFI	1.18	1.10	1.29
	Customer Minutes	75,171,284	99,559,235	121,882,261
	Customers Affected	662,492	804,947	827,461
	Minutes of Interruption	2,068,447	2,627,337	3,469,122
	Customers Served[13]	554,476	558,363	561,039
Penelec	SAIFI	1.36	1.43	1.73
	CAIDI	140	120	138
	SAIDI	191	171	239
	MAIFI	2.61	3.85	3.76
	Customer Minutes	111,191,315	99,584,395	138,523,052
	Customers Affected	792,673	833,315	1,001,129
	Minutes of Interruption	3,029,993	2,806,020	3,540,860
	Customers Served[14]	581,832	581,260	580,349
Penn Power	SAIFI	1.14	1.09	1.06
	CAIDI	100	95	150
	SAIDI	114	104	160
	MAIFI	0.64	0.81	0.89
	Customer Minutes	18,211,842	16,841,199	26,001,026
	Customers Affected	181,479	176,968	173,036
	Minutes of Interruption	666,315	703,768	1,196,734
	Customers Served[15]	159,612	161,850	162,868

[13] Represents the average number of customers served during the reporting period.
[14] Represents the average number of customers served during the reporting period.
[15] Represents the average number of customers served during the reporting period.

Historic 12-Month Rolling Reliability Indices				
	Index	**2015**	**2016**	**2017**
West Penn	SAIFI	1.17	1.08	1.29
	CAIDI	154	147	166
	SAIDI	179	159	214
	Customer Minutes	127,282,345	113,097,150	152,701,813
	Customers Affected	827,613	772,206	919,673
	Minutes of Interruption	3,418,558	3,263,252	4,589,540
	Customers Served[16]	709,782	712,703	714,821

The tables below show that five of twelve reliability indices in 2017 were better than the Commission's three-year standards (shown in green).

Three-Year Rolling Year-End 2017	Met-Ed		Penelec	
	Three-Year Standard	Three-Year Actual	Three-Year Standard	Three-Year Actual
SAIFI	1.27	1.37	1.39	1.51
CAIDI	129	128	129	133
SAIDI	163	177	179	200

Three-Year Rolling Year-End 2017	Penn Power		West Penn	
	Three-Year Standard	Three-Year Actual	Three-Year Standard	Three-Year Actual
SAIFI	1.23	1.10	1.16	1.18
CAIDI	111	115	187	155
SAIDI	136	126	217	184

[16] Represents the average number of customers served during the reporting period.

Section 57.195(b)(4) *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, the 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.*

Outages by Cause

Outages by Cause – Met-Ed

Outage by Cause				
4th Quarter 2017 12-Month Rolling	**Met-Ed**			
Cause	**Customer Minutes**	**Number of Sustained Interruptions**	**Customers Affected**	**% Based on Number of Outages**
Equipment failure	25,566,423	2,314	206,984	21.70%
Trees off ROW - tree	43,482,358	1,804	209,877	16.92%
Unknown	8,213,255	1,337	86,840	12.54%
Animal	2,075,311	1,323	24,233	12.41%
Line failure	11,623,489	716	82,551	6.72%
Bird	305,230	505	3,092	4.74%
Trees off ROW - limb	4,968,681	470	43,070	4.41%
Trees on ROW	6,443,276	445	17,990	4.17%
Forced outage	3,056,590	421	47,789	3.95%
Trees - sec/service	814,742	413	1,534	3.87%
Vehicle	9,659,696	336	63,917	3.15%
Lightning	2,359,694	303	14,024	2.84%
Human error - non-company	513,058	60	4,849	0.56%
Overload	351,884	42	4,433	0.39%
Object contact with line	936,886	36	6,018	0.34%
Previous lightning	30,869	29	147	0.27%
Human error - company	142,303	29	3,899	0.27%
UG dig-up	34,848	23	187	0.22%
Wind	1,007,491	15	3,663	0.14%
Customer equipment	9,619	15	46	0.14%
Fire	56,133	10	246	0.09%
Vandalism	1,820	7	13	0.07%
Other electric utility	33,418	5	360	0.05%
Other utility - non-electric	195,052	3	1,698	0.03%
Contamination	135	1	1	0.01%
Total	**121,882,261**	**10,662**	**827,461**	**100.00%**

Proposed Solutions – Met-Ed

Met-Ed analyzes its outage data to develop solutions for improving reliability. The following paragraphs identify the top outage causes for the rolling twelve-month period ending December 31, 2017, and associated actions designed to address these outage causes.

To reduce the likelihood of equipment-caused outages, Met-Ed follows Inspection and Maintenance ("I&M") programs[17] that set forth schedules for regular inspections of distribution and substation facilities. These programs are geared towards specific components such as capacitors, poles, circuits, transformers, radio-controlled switches, substations, and reclosers. Equipment identified is repaired or replaced as appropriate.

To address outages caused by trees, Met-Ed performs cycle-based tree trimming and enhanced tree trimming in select locations. Enhanced trimming complements cycle based trimming by removing heathy limbs overhanding primary conductors. Trees identified as a potential cause of a future outage are removed to prevent an interruption of electrical service to Met-Ed's customers.

Outages caused by unknown factors are patrolled by a troubleman and recorded as having an unknown cause. For certain unknown outages, Engineering may conduct a post-outage circuit inspection as needed to determine if additional actions are necessary.

In addition to the I&M programs that set forth schedules for regular inspections of distribution and substation facilities and are geared towards specific components such as capacitors, reclosers, switches, poles, circuits, and overhead and underground transformers, there are a number of other reliability projects that have been identified to help reduce the number of, and limit the duration and impact of, interruptions to customers. See Met-Ed's Current Assessment of the State of System Reliability portion of this report, where many of these projects are described in further detail.

[17] Pursuant to 52 Pa. Code § 57.198, every two years an electric distribution company shall file, and receive approval from the Commission of, a biennial plan for the periodic inspection, maintenance, repair and replacement of its facilities. On December 30, 2013, Paul Diskin, Director, Technical Utility Services, issued a letter approving the Company's biennial inspection, maintenance, repair, and replacement plan effective January 1, 2015 through December 31, 2016. Further, on March 4, 2016 an additional letter was issued approving the plans effective January 1, 2017 – December 31, 2018.

Outages by Cause – Penelec

Outage by Cause				
4th Quarter 2017 12-Month Rolling	**Penelec**			
Cause	**Customer Minutes**	**Number of Sustained Interruptions**	**Customers Affected**	**% Based on Number of Outages**
Equipment failure	24,573,690	2,900	276,148	22.77%
Unknown	9,362,176	1,826	101,184	14.34%
Trees off ROW - tree	53,426,970	1,796	216,342	14.10%
Animal	2,671,076	1,285	29,814	10.09%
Line failure	14,972,803	1,106	118,998	8.68%
Forced outage	5,872,966	953	65,309	7.48%
Trees - sec/service	532,934	584	1,691	4.59%
Lightning	3,906,258	490	36,485	3.85%
Bird	1,190,443	432	18,024	3.39%
Trees off ROW - limb	3,717,818	390	22,959	3.06%
Vehicle	7,376,513	300	45,331	2.36%
Trees on ROW	666,038	142	3,274	1.12%
Human error - non-company	1,868,614	100	14,575	0.79%
Other electric utility	5,966,570	97	16,980	0.76%
Overload	625,166	60	11,686	0.47%
UG dig-up	56,603	58	378	0.46%
Human error - company	320,590	44	12,498	0.35%
Previous lightning	47,104	42	286	0.33%
Object contact with line	981,487	41	6,462	0.32%
Customer equipment	38,970	25	301	0.20%
Ice	101,869	17	628	0.13%
Wind	146,327	16	1,217	0.13%
Vandalism	4,908	13	17	0.10%
Fire	12,890	10	105	0.08%
Other utility - non-electric	81,978	5	433	0.04%
Contamination	291	3	4	0.02%
Total	**138,523,052**	**12,735**	**1,001,129**	**100%**

Proposed Solutions – Penelec

Penelec analyzes its outage data to develop solutions for improving reliability. The following paragraphs identify the top outage causes for the rolling twelve-month period ending December 31, 2017 and the associated actions designed to address these outage causes.

To reduce the likelihood of equipment-caused outages, Penelec follows I&M programs that set forth schedules for regular inspections of distribution and substation facilities. These programs are geared towards specific components such as capacitors, poles, circuits, transformers, radio-controlled switches, substations, and reclosers. Equipment identified is repaired or replaced as appropriate.

Outages caused by unknown factors are patrolled by a troubleman and recorded as having an unknown cause. For certain unknown outages, Engineering may conduct a post-outage circuit inspection as needed to determine if additional actions are necessary.

To target outages caused by trees, Penelec performs cycle-based tree trimming, which includes the proactive removal of Ash trees that have been deemed a threat due to the Emerald Ash Borer, as well as additional tree trimming techniques.

In addition, there are a number of other reliability projects that have been identified to help reduce the number of, and limit the duration and impact of, interruptions to customers. See Penelec's Current Assessment of the State of System Reliability portion of this report, where many of these programs are described in further detail.

Submitted Pursuant to 52 Pa. Code § 57.195(a) and (b)

Outages by Cause – Penn Power

Outage by Cause				
4th Quarter 2017 12-Month Rolling	**Penn Power**			
Cause	**Customer Minutes**	**Number of Sustained Interruptions**	**Customers Affected**	**% Based on Number of Outages**
Trees off ROW - tree	15,076,915	858	51,548	26.56%
Animal	1,114,960	423	11,635	13.09%
Bird	231,853	295	2,720	9.13%
Line failure	2,060,486	295	16,494	9.13%
Equipment failure	2,290,245	284	19,890	8.79%
Lightning	703,806	239	6,151	7.40%
Trees off ROW - limb	1,269,130	179	5,740	5.54%
Trees - sec/service	172,489	152	617	4.70%
Unknown	570,760	140	17,635	4.33%
Forced outage	349,918	105	11,773	3.25%
Vehicle	1,348,524	86	8,992	2.66%
Previous lightning	20,795	40	138	1.24%
Overload	106,272	24	656	0.74%
Human error - company	294,317	24	14,361	0.74%
Human error - non-company	250,882	23	3,669	0.71%
Trees on ROW	42,986	18	341	0.56%
Object contact with line	11,367	14	108	0.43%
UG dig-up	19,449	12	315	0.37%
Customer equipment	14,565	5	36	0.15%
Vandalism	7,532	4	20	0.12%
Fire	29,771	3	92	0.09%
Other utility - non-electric	1,814	2	9	0.06%
Other electric utility	1,325	2	25	0.06%
Wind	10,518	2	67	0.06%
Ice	160	1	1	0.03%
Contamination	187	1	3	0.03%
Total	**26,001,026**	**3,231**	**173,036**	**100%**

Proposed Solutions – Penn Power

Penn Power analyzes its outage data to develop solutions for improving reliability. The following paragraphs identify the top outage causes for the rolling twelve-month period ending December 31, 2017 and the associated actions designed to address these outage causes.

To address outages caused by trees, Penn Power performs cycle-based tree trimming and enhanced tree trimming that includes the removal heathy limbs overhanding primary conductors.

To address outages caused by animals and birds, Penn Power installs animal guards on equipment that experiences a high frequency of animal and bird related outages. When possible, animal guards are installed at the time service is restored to prevent future outages caused by animals and birds.

In addition, there are a number of other reliability projects that have been identified to help reduce the number of, and limit the duration and impact of, interruptions to customers. See Penn Power's Current Assessment of the State of System Reliability portion of this report, where many of these programs are described in further detail.

Submitted Pursuant to 52 Pa. Code § 57.195(a) and (b)

Outages by Cause – West Penn

Outage by Cause				
4th Quarter 2017 12-Month Rolling	**West Penn**			
Cause	**Customer *Minutes***	**Number of Sustained *Interruptions***	**Customers *Affected***	**% Based on Number of Outages**
Trees off ROW - tree	71,974,544	3,214	288,641	26.81%
Equipment failure	23,853,845	2,192	165,373	18.28%
Unknown	11,226,760	1,816	93,926	15.15%
Animal	2,598,041	1,160	27,869	9.68%
Line failure	15,729,767	1,135	96,526	9.47%
Forced outage	3,943,063	578	69,286	4.82%
Trees on ROW	7,972,198	436	40,213	3.64%
Vehicle	7,363,233	342	60,658	2.85%
Trees - sec/service	350,477	316	1,981	2.64%
Bird	662,823	314	9,212	2.62%
Trees off ROW - limb	3,369,409	226	22,994	1.89%
Human error - non-company	1,132,279	65	10,687	0.54%
Lightning	932,996	43	6,556	0.36%
Human error - company	181,507	40	8,453	0.33%
UG dig-up	104,384	39	706	0.33%
Object contact with line	373,701	23	3,960	0.19%
Overload	306,474	13	5,889	0.11%
Other electric utility	372,009	9	1,652	0.08%
Customer equipment	3,078	7	9	0.06%
Fire	41,347	6	307	0.05%
Switching error	76,181	5	3,043	0.04%
Vandalism	8,380	3	73	0.03%
Other utility - non-electric	105,053	2	1,626	0.02%
Previous Lightning	6,049	2	24	0.02%
Contamination	260	2	4	0.02%
Wind	13,955	1	5	0.01%
Total	**152,701,813**	**11,989**	**919,673**	**100%**

Proposed Solutions – West Penn

West Penn analyzes its outage data to develop solutions for improving reliability. The following paragraphs identify the top outage causes for the rolling twelve-month period ending December 31, 2017, and the associated actions designed to address these outage causes.

To reduce outages caused by trees, West Penn performs cycle-based tree trimming and continues its program to accelerate the mitigation of trees subject to damage by the Emerald Ash Borer.

To reduce the likelihood of equipment-caused outages, West Penn follows I&M programs that set forth schedules for regular inspections of distribution and substation facilities. These programs are geared towards specific components such as capacitors, poles, circuits, transformers, substations, and reclosers. Equipment identified is repaired or replaced as appropriate.

Outages caused by unknown factors are patrolled by a troubleman and recorded as having an unknown cause. For certain unknown outages, Engineering may conduct a post-outage circuit inspection as needed to determine if additional actions are necessary.

In addition, there are a number of other reliability projects that have been identified to help reduce the number of, and limit the duration and impact of, interruptions to customers. See West Penn's Current Assessment of the State of System Reliability portion of this report, where many of these programs are described in further detail.

Section 57.195(b)(5) 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.

Worst Performing Circuits – Remedial Actions

Met-Ed, Penelec, Penn Power, and West Penn's Remedial Actions for Worst Performing Circuits are provided in Attachment A of this report.

Section 57.195(b)(6) *A comparison of established transmission and distribution inspections and maintenance goals/objectives versus actual results achieved during the year being reported on. Explanations of any variances shall be included.*

T&D Inspection and Maintenance Programs

Inspection and Maintenance 2017		Met-Ed		Penelec		Penn Power		West Penn	
		Planned	**Completed**	**Planned**	**Completed**	**Planned**	**Completed**	**Planned**	**Completed**
Forestry	Transmission (Miles)	288.28	288.28	435.17	435.17	61.67	61.67	301.68	301.68
	Distribution (Miles)	2,895	2,895	3,792	3,792	1,187	1,187	4,589	4,667
Transmission	Aerial Patrols	2	2	2	2	2	2	2	2
	Groundline	0	0	1,863	2,347	680	855	1,076	1,352
Substation	Substation Inspections Class A	422	422	800	800	146	146	970	970
	Substation Inspections Class B	423[18]	423	800	800	146	146	970	970
	Substation Inspections Class C	1,689[19]	1,689	3,200	3,200	584	584	3,880	3,880
	Transformers	246	246	553	553	107	107	517	517
	Breakers	110	110	270[20]	270	25	25	402	402
	Relay Schemes	270	270	300	300	45	45	160	160
Distribution	Capacitors	4,754	4,760	8,766	8,766	991	991	1,308	1,308
	Poles	29,514	29,992	41,591	41,920	10,600	10,833	32,856	33,241
	Reclosers	1,091[21]	1,091	2,568	2,568	814	815	3,798	3,798
	Radio-Controlled Switches	478[22]	478	2,578	2,615	Penn Power has no radio-controlled switches		West Penn has no radio-controlled switches	

General Note: Unless specified otherwise, all inspections are reported on a unit basis rather than on a location basis.

[18] One inspection was added when a new substation was energized.
[19] One inspection was added when a new substation was energized.
[20] Two breakers were inadvertently included in the count.
[21] Seven reclosers were taken out of service.
[22] Radio-controlled device inspection updated from 506 to 478 as 14 devices (28 inspections) were double counted.

Section 57.195(b)(7) 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 EDC's own functional account code of FERC account code as available. Explanations of any variances shall be included.

Budgeted vs. Actual T&D Operation & Maintenance Expenditures

Met-Ed T&D O&M - 2017 ($)					
Transmission					
	Category	**2017 Actuals**	**2017 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	1,866	0	100%	1
561	Load Dispatching	49,944	647,058	-92%	2
562	Station Expenses	412,909	0	100%	3
563	Overhead Lines Expenses	60,525	33,112	83%	1
565	Transmission of Electricity by Others	13,129,081	9,193,248	43%	4
566	Miscellaneous Transmission Expenses	1,064	(5,372)	-120%	5
567	Rents	149,462	0	100%	6
568	Maintenance Supervision and Engineering	90,990	0	100%	7
569	Maintenance of Structures	220,386	294,556	-25%	8
570	Maintenance of Station Equipment	742,657	4,085	18082%	9
571	Maintenance of Overhead Lines	234,779	(62,822)	-474%	10
572	Transmission-Maintenance of Underground Lines	133	0	100%	11
573	Maintenance of Miscellaneous Transmission Plant	33,369	0	100%	12
575	Market Administration, Monitoring & Compliance Services	0	0	0%	
Transmission Total		**15,127,164**	**10,103,865**		
Distribution					
	Category	**2017 Actuals**	**2017 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	353,628	(46,673)	-858%	13
581	Load Dispatching	260,541	284,556	-8%	
582	Station Expenses	900,978	673,558	34%	14
583	Overhead Line Expenses	263,916	60,277	338%	15
584	Underground Line Expenses	0	576,477	-100%	2
586	Meter Expenses	629,731	610,230	3%	
587	Customer Installations Expenses	0	0	0%	
588	Miscellaneous Distribution Expenses	7,417,384	7,536,853	-2%	
589	Rents	486,351	540,873	-10%	16
590	Maintenance Supervision and Engineering	397,974	229,486	73%	17
591	Maintenance of Structures	5,917	9,197	-36%	18
592	Maintenance of Station Equipment	3,633,124	4,721,647	-23%	2
593	Maintenance of Overhead Lines	29,912,996	23,963,410	25%	19
594	Maintenance of Underground Lines	2,261,681	1,269,502	78%	20
595	Maintenance of Line Transformer	187,872	269,474	-30%	18
596	Maintenance of Street Lighting and Signal Systems	665,590	257,830	158%	21
597	Maintenance of Meters	2,260,566	2,214,148	2%	
598	Maintenance of Miscellaneous Distribution Plant	1,803,546	721,416	150%	22
Distribution Total		**51,441,796**	**43,892,259**		
Met-Ed Total		**66,568,959**	**53,996,124**		

	Variance Explanations (Variances 10% or greater)
1	Over budget due to transmission operation supervision and engineering costs for labor being greater than planned.
2	Under budget due to contractor expenses being lower than planned.
3	Over budget due to labor, contractor and employee expenses being greater than planned.
4	Over budget due to PJM ancillary service charges being greater than planned.
5	Over budget due to material expenses being greater than planned.
6	Over budget due to rents for information technology and transmission personnel being greater than planned.
7	Over budget due to contractor and fees/dues expenses being greater than planned.
8	Under budget due to labor and computer software maintenance expenses being lower than planned.
9	Over budget due to labor, contractor, material and lease expenses being greater than planned.
10	Over budget due to vegetation management contractor expenses being greater than planned.
11	Current budgeting practices do not budget directly to FERC accounts. FirstEnergy budgets to different cost collectors, which settle to FERC accounts. Actual settlements to these FERC accounts are relatively immaterial amounts.
12	Over budget due to contractor and material expenses being greater than planned.
13	Over budget due to labor, contractor, and license/permit expenses being greater than planned.
14	Over budget due to contractor, materials, and utilities expenses being greater than planned.
15	Over budget due to labor and telecommunications expenses being greater than planned.
16	Under budget due to labor and joint use rentals being lower than planned.
17	Over budget due to contractor expenses and association fees being greater than planned.
18	Under budget due to labor expenses being lower than planned.
19	Over budget due to contractor expenses and lower than planned reimbursements being greater than planned.
20	Over budget due to contractor expenses being greater than planned.
21	Over budget due to labor and transportation costs related to streetlight outages being greater than planned.
22	Over budget due to labor, contractor, materials and utility expenses being greater than planned.

Submitted Pursuant to 52 Pa. Code § 57.195(a) and (b)

Penelec T&D O&M - 2017 (S)					
Transmission					
	Category	**2017 Actuals**	**2017 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	2,595	0	100%	1
561	Load Dispatching	14,140	461,019	-97%	2
562	Station Expenses	537,747	0	100%	3
563	Overhead Lines Expenses	488,325	355,969	37%	1
565	Transmission of Electricity by Others	30,595,429	21,918,956	40%	4
566	Miscellaneous Transmission Expenses	(2,655)	0	100%	5
567	Rents	540,213	167,963	222%	6
568	Maintenance Supervision and Engineering	169,922	0	100%	7
569	Maintenance of Structures	289,084	319,134	-9%	
570	Maintenance of Station Equipment	724,279	60,000	1107%	8
571	Maintenance of Overhead Lines	513,776	(140,573)	-465%	9
572	Transmission-Maintenance of Underground Lines	0	0	0%	
573	Maintenance of Miscellaneous Transmission Plant	27,281	0	0%	10
575	Market Administration, Monitoring & Compliance Services	0	0	0%	
Transmission Total		**33,900,136**	**23,142,469**		
Distribution					
	Category	**2017 Actuals**	**2017 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	409,597	427,025	-4%	
581	Load Dispatching	421,243	219,806	92%	11
582	Station Expenses	527,746	0	0%	12
583	Overhead Line Expenses	67,825	52,827	28%	1
584	Underground Line Expenses	948,464	779,118	22%	3
586	Meter Expenses	648,994	616,163	5%	
587	Customer Installations Expenses	0	0	0%	
588	Miscellaneous Distribution Expenses	10,921,639	11,351,893	-4%	
589	Rents	1,563,936	1,131,717	38%	13
590	Maintenance Supervision and Engineering	412,642	264,742	56%	7
591	Maintenance of Structures	0	0	0%	
592	Maintenance of Station Equipment	5,630,236	5,306,478	6%	
593	Maintenance of Overhead Lines	37,046,858	23,361,832	59%	7
594	Maintenance of Underground Lines	1,262,752	69,502	1717%	13
595	Maintenance of Line Transformer	164,153	235,441	-30%	11
596	Maintenance of Street Lighting and Signal Systems	989,547	2,200,704	-55%	14
597	Maintenance of Meters	2,817,169	2,569,856	10%	15
598	Maintenance of Miscellaneous Distribution Plant	1,341,969	141,458	849%	16
Distribution Total		**65,174,770**	**48,728,562**		
Penelec Total		**99,074,907**	**71,871,031**		

Submitted Pursuant to 52 Pa. Code § 57.195(a) and (b)

	Variance Explanations (Variances 10% or greater)
1	Under budget due to transmission operations supervision and engineering costs being lower than planned.
2	Under budget due to outside services/contractors and PJM reimbursable services settling to load dispatching being lower than planned.
3	Over budget due to labor requirements and outside services/contractors being greater than planned.
4	Over budget due to PJM ancillary service charges being greater than planned.
5	Under budget due to materials required to perform the work being less than planned.
6	Over budget due to associated company rentals being greater than planned.
7	Over budget due to outside services/contractors being greater than planned.
8	Over budget due to internal labor required to perform the work being greater than planned.
9	Over budget due to vegetation management costs being greater than planned.
10	Over budget due to materials required to perform the work being greater than planned.
11	Under budget due to internal labor required to perform the work being less than planned.
12	Over budget due to internal labor required to complete this work which was not budgeted to this FERC account.
13	Over budget due to labor and transportation costs being greater than planned.
14	Under budget due to fleet costs charged to O&M and labor costs being less than planned.
15	Over budget due to labor costs being greater than planned.
16	Over budget due to network costs and labor requirements being greater than planned.

Penn Power T&D O&M - 2017 ($)					
Transmission					
	Category	**2017 Actuals**	**2017 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	1,680	2,131	-21%	1
561	Load Dispatching	1,978	129,496	-98%	2
562	Station Expenses	0	(188)	-100%	3
563	Overhead Lines Expenses	859	(327)	-363%	4
565	Transmission of Electricity by Others	5,035,354	4,974,660	1%	
566	Miscellaneous Transmission Expenses	3,992	3,312	21%	4
567	Rents	0	0	0%	
568	Maintenance Supervision and Engineering	13,234	15,945	-17%	5
569	Maintenance of Structures	26,547	31,967	-17%	6
570	Maintenance of Station Equipment	7,070	3,047	132%	7
571	Maintenance of Overhead Lines	57,399	(113,596)	-151%	8
572	Transmission-Maintenance of Underground Lines	0	0	0%	
573	Maintenance of Miscellaneous Transmission Plant	(637)	0	100%	3
575	Market Administration, Monitoring & Compliance Services	0	0	0%	
Transmission Total		5,147,476	5,046,448		
Distribution					
	Category	**2017 Actuals**	**2017 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	667	0	100%	3
581	Load Dispatching	0	0	0%	
582	Station Expenses	62,040	0	100%	9
583	Overhead Line Expenses	107,163	0	100%	10
584	Underground Line Expenses	223,745	527,329	-58%	11
586	Meter Expenses	66,014	65,503	1%	
587	Customer Installations Expenses	0	0	0%	
588	Miscellaneous Distribution Expenses	1,698,782	1,675,198	1%	
589	Rents	343,411	318,986	8%	
590	Maintenance Supervision and Engineering	108,743	51,223	112%	10
591	Maintenance of Structures	0	0	0%	
592	Maintenance of Station Equipment	834,767	422,770	97%	10
593	Maintenance of Overhead Lines	11,321,899	10,587,759	7%	
594	Maintenance of Underground Lines	262,331	39,446	565%	10
595	Maintenance of Line Transformer	23,152	49,005	-53%	12
596	Maintenance of Street Lighting and Signal Systems	73,322	0	100%	4
597	Maintenance of Meters	684,573	569,682	20%	8
598	Maintenance of Miscellaneous Distribution Plant	326,655	429,707	-24%	13
Distribution Total		16,137,266	14,736,609		
Penn Power Total		21,284,743	19,783,057		

Variance Explanations (Variances 10% or greater)	
1	Under budget due to transmission operations supervision and engineering costs being lower than planned.
2	Under budget due to transmission owner scheduling, system control and dispatching costs being lower than planned.
3	Current budgeting practices do not budget directly to FERC accounts. FirstEnergy Service Company budgets to different cost collectors, which settle to FERC accounts. Actual settlements to these FERC accounts are relatively immaterial amounts.
4	Over budget due to labor costs being greater than planned.
5	Under budget due to supervision and engineering costs being lower than planned.
6	Under budget due to information technology service labor and software costs being lower than planned.
7	Over budget due to equipment leases and transportation costs being greater than planned.
8	Over budget due to material and labor being greater than planned.
9	Over budget due to labor and materials for equipment repair and maintenance being greater than planned.
10	Over budget due to labor and contractor costs being greater than planned.
11	Under budget due to labor and materials being lower than planned.
12	Under budget due to labor being lower than planned.
13	Under budget due to information technology service labor being lower than planned.

Submitted Pursuant to 52 Pa. Code § 57.195(a) and (b)

West Penn T&D O&M - 2017 ($)					
Transmission					
	Category	**2017 Actuals**	**2017 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	38,257	28,019	37%	1
561	Load Dispatching	818,721	1,909,320	-57%	2
562	Station Expenses	187,852	564,078	-67%	3
563	Overhead Lines Expenses	200,628	232,165	-14%	4
565	Transmission of Electricity by Others	62,018,344	56,410,511	10%	5
566	Miscellaneous Transmission Expenses	236,301	263,677	-10%	6
567	Rents	48,596	27,242	78%	7
568	Maintenance Supervision and Engineering	709,178	433,877	63%	8
569	Maintenance of Structures	33,208	25,424	31%	9
570	Maintenance of Station Equipment	2,351,087	1,368,824	72%	10
571	Maintenance of Overhead Lines	10,293,695	8,314,564	24%	11
572	Transmission-Maintenance of Underground Lines	444	0	100%	12
573	Maintenance of Miscellaneous Transmission Plant	0	0	0%	
575	Market Administration, Monitoring & Compliance Services	58	0	100%	12
Transmission Total		**76,936,367**	**69,577,701**		
Distribution					
	Category	**2017 Actuals**	**2017 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	216,397	91,738	136%	13
581	Load Dispatching	1,896,372	1,570,708	21%	14
582	Station Expenses	1,224,185	1,321,663	-7%	
583	Overhead Line Expenses	719,464	938,409	-23%	15
584	Underground Line Expenses	1,310,258	1,125,000	16%	16
586	Meter Expenses	1,121,586	1,679,034	-33%	17
587	Customer Installations Expenses	0	0	0%	
588	Miscellaneous Distribution Expenses	14,368,794	14,532,066	-1%	
589	Rents	0	0	0%	
590	Maintenance Supervision and Engineering	533,563	403,423	32%	18
591	Maintenance of Structures	0	0	0%	
592	Maintenance of Station Equipment	7,445,333	6,416,604	16%	19
593	Maintenance of Overhead Lines	34,757,779	27,322,843	27%	20
594	Maintenance of Underground Lines	988,178	679,004	46%	21
595	Maintenance of Line Transformer	45,781	252,110	-82%	22
596	Maintenance of Street Lighting and Signal Systems	1,115,832	841,835	33%	20
597	Maintenance of Meters	1,553,352	1,243,835	25%	23
598	Maintenance of Miscellaneous Distribution Plant	205,233	285,821	-28%	24
Distribution Total		**67,502,106**	**58,704,092**		
West Penn Total		**144,438,473**	**128,281,793**		

Variance Explanations (Variances 10% or greater)	
1	Over budget due to greater transmission and distribution operation supervision and engineering costs for labor.
2	Under budget due to contractor and project miscellaneous billings Sales and Distribution required to perform the work being less than planned.
3	Under budget due to transportation costs being lower than planned.
4	Under budget due to benefit costs being lower than planned.
5	Over budget due to transmission enhancement charges being greater than planned.
6	Under budget due to internal labor costs being lower than planned partially offset by greater lease costs.
7	Over budget due to rents for information technology and transmission personnel being greater than planned.
8	Over budget due to internal labor and contractor costs being more than planned.
9	Over budget due to greater information technology labor costs than anticipated.
10	Over budget due to contractor, material, and transportation costs being more than planned.
11	Over budget due to higher internal labor, contractor, and transportation costs for tree-trimming being greater than planned.
12	Current budgeting practices do not budget directly to FERC accounts. FirstEnergy budgets to different cost collectors, which settle to FERC accounts. Actual settlements to these FERC accounts are relatively immaterial amounts.
13	Over budget due to benefits, contractor, employee expense, and lease costs being greater than planned.
14	Over budget due to internal labor and benefits being greater than planned.
15	Under budget due to contractor and transportation cost being lower than planned.
16	Over budget due to contractor costs for underground locating work being greater than planned.
17	Under budget due to internal labor costs being lower than planned.
18	Over budget due to contractor costs being greater than planned.
19	Over budget due to internal labor, material, and transportation costs being greater than planned.
20	Over budget due to internal labor, contractor, and transportation costs being greater than planned.
21	Over budget due to internal labor and contractor costs being greater than planned.
22	Under budget due to internal labor and all other expenses being lower than planned.
23	Over budget due to internal labor and transportation costs being greater than planned.
24	Under budget due to contractor and computer software maintenance costs being lower than planned.

Section 57.195(b)(8) *A comparison of budgeted versus actual transmission and distribution operation and maintenance capital expenses for the year being reported on in total and detailed by the EDC's own functional account code or FERC account code as available. Explanations of any variances 10% or greater shall be included.*

Budgeted vs. Actual T&D Capital Expenditures

Met-Ed T&D Capital – 2017 ($)				
Category	**2017 Actuals**	**2017 Budget**	**Variance %**	**Notes**
Capacity	6,635,528	9,715,488	-32%	1
Condition	10,126,050	11,441,219	-11%	2
Facilities	3,702,578	2,234,386	66%	3
Forced	37,643,562	27,693,964	36%	4
Meter Related	2,317,795	2,915,732	-21%	5
New Business	15,550,106	13,631,743	14%	6
Other	37,713,886	38,264,199	-1%	
Reliability	9,339,197	8,067,013	16%	7
Street Light	1,250,821	3,657,218	-66%	8
Tools & Equip	1,101,788	368,064	199%	9
Vegetation Mgt.	4,932,861	6,900,200	-29%	10
Met-Ed Total	**130,314,171**	**124,889,226**		

General Note: Capital reported on Generally Accepted Accounting Principles (GAAP) basis.

Penelec T&D Capital – 2017 ($)				
Category	**2017 Actuals**	**2017 Budget**	**Variance %**	**Notes**
Capacity	(676,557)	(1,008,200)	-33%	11
Condition	7,418,466	8,823,016	-16%	12
Facilities	6,229,540	3,996,302	56%	13
Forced	45,277,302	51,162,339	-12%	12
Meter Related	1,505,855	4,328,578	-65%	5
New Business	10,962,536	9,706,256	13%	14
Other	42,707,875	45,830,645	-7%	
Reliability	13,888,256	8,113,019	71%	15
Street Light	1,501,214	1,677,133	-10%	16
Tools & Equip	1,057,456	531,684	99%	17
Vegetation Mgt.	17,135,272	21,891,389	-22%	18
Penelec Total	**147,007,217**	**155,052,161**		

General Note: Capital reported on Generally Accepted Accounting Principles (GAAP) basis.

Penn Power T&D Capital – 2017 ($)				
Category	**2017 Actuals**	**2017 Budget**	**Variance %**	**Notes**
Capacity	181,225	3,344,902	-95%	19
Condition	1,537,069	5,130,764	-70%	20
Facilities	459,059	319,077	44%	21
Forced	16,334,332	10,123,480	61%	22
Meter Related	371,021	344,211	8%	
New Business	4,382,516	1,460,104	200%	23
Other	6,470,136	12,007,035	-46%	24
Reliability	16,034,258	11,326,433	42%	25
Street Light	938,433	1,361,986	-31%	26
Tools & Equip	187,998	25,275	644%	27
Vegetation Mgt.	4,340,107	3,581,290	21%	28
Penn Power Total	**51,236,153**	**49,024,556**		

General Note: Capital reported on Generally Accepted Accounting Principles (GAAP) basis.

West Penn T&D Capital – 2017 ($)				
Category	**2017 Actuals**	**2017 Budget**	**Variance %**	**Notes**
Capacity	10,479,687	10,423,339	1%	
Condition	12,924,388	12,595,548	3%	
Facilities	5,249,353	4,040,053	30%	29
Forced	37,190,704	25,147,542	48%	30
Meter Related	2,375,534	2,902,668	-18%	5
New Business	20,779,206	25,816,980	-20%	31
Other	37,286,280	50,392,586	-26%	24
Reliability	23,287,816	31,804,963	-27%	32
Street Light	7,206,833	11,119,986	-35%	8
Tools & Equip	2,939,894	1,956,383	50%	33
Vegetation Mgt.	26,127,195	29,255,825	-11%	10
West Penn Total	**185,846,891**	**205,455,873**		

General Note: Capital reported on Generally Accepted Accounting Principles (GAAP) basis.

	Variance Explanations (Variances 10% or greater)
1	Under budget due to spend for several new mod sub and circuit projects being lower than planned.
2	Under budget due to spend for pole replacements and repair/replace unscheduled overhead facilities being lower than planned.
3	Over budget due to regional facilities projects and storm water piping project at Reading facility being greater than planned.
4	Over budget due to major storms, substation failures, enhanced tree trimming, and IT legacy replacements being greater than planned.
5	Under budget due to meter exchanges being lower than planned.
6	Over budget due to spend in facility relocation for new business and residential service upgrades, and residential overhead / underground new business being greater than planned.
7	Over budget due to network infrastructure work, 700 MHz block A spectrum purchase and distribution components of MAIT projects being higher than planned.
8	Under budget due to LED streetlight replacement program being lower than planned.
9	Over budget due to regional tool purchases, fall protection equipment, and relay test sets being greater than planned.
10	Under budget due to distribution vegetation management being lower than planned.
11	Under budget due to timing differences in several construction projects.
12	Under budget due to timing differences in several construction projects.
13	Over budget due to facilities work being greater than planned.
14	Over budget due to new commercial business being greater than planned.
15	Over budget due to spend in substation line LTIIP programs and 700 MHz block A spectrum purchase being higher than planned.
16	Under budget due to unscheduled distribution streetlighting repair being lower than planned.
17	Over budget due to tool purchases, vehicle purchases, sales, or re-deployments, and fleet projects being greater than planned.
18	Under budget due to distribution vegetation management and Emerald Ash Borer project being lower than planned.
19	Under budget due to equipment replacement projects being lower than planned.
20	Under budget due to unscheduled equipment repairs and replacements being lower than planned.
21	Over budget due to service center HVAC costs being greater than anticipated.
22	Over budget due to additional line failure work, storm restoration, and related follow up work being greater than planned.
23	Over budget due to residential and commercial new business work being greater than planned.
24	Under budget due to smart meter installation costs and overheads being lower than planned.
25	Over budget due to circuit reliability work and equipment replacement being greater than planned.
26	Under budget due to lighting replacement-related work being lower than planned.
27	Over budget due to work management equipment and tool costs being greater than planned.
28	Over budget due to vegetation management costs being greater than planned.
29	Over budget due to facilities work being greater than planned.
30	Over budget due to storm costs being greater than planned.
31	Under budget due to residential and commercial new business being lower than planned.
32	Under budget due to spend in NERC alert mitigation transmission project being lower than planned.
33	Over budget due to purchases and installations of mobile data terminals, critical tool replacements, training supplies, and vehicle leases / purchases being greater than planned.

Section 57.195(b)(9) *Quantified transmission and distribution inspection and maintenance goals/objectives for the current calendar year detailed by system area (that is, transmission, substation and distribution).*

T&D Inspection & Maintenance Programs – 2018 Goals / Objectives

T&D Inspection & Maintenance Programs - 2018				
Program/Project	**Met-Ed**	**Penelec**	**Penn Power**	**West Penn**
Forestry				
Transmission (Miles)	258.68	417.85	77.87	527.36
Distribution (Miles)	3,160	3,636	1,149	4,584
Transmission				
Aerial Patrols	2	2	2	2
Groundline (Poles)	0	0	553	1,330
Substation				
Substation Inspections Class A	424	788	148	726
Substation Inspections Class B	424	788	148	726
Substation Inspections Class C	1,696	3,152	592	2,904
Transformers	245	487	103	514
Breakers	76	325	9	406
Relay Schemes	98	176	16	123
Distribution				
Capacitors	4,758	8,736	994	1,305
Poles	46,000	41,591	10,600	57,822
Reclosers	1,109	2,572	815	3,898
Radio-Controlled Switches (2 / year)	478	2,612	Penn Power has no radio-controlled switches	West Penn has no radio-controlled switches

Section 57.195(b)(10) Budgeted transmission and distribution operation and maintenance expenses for the current year in total and detailed by the EDC's own functional account code or FERC account code as available.

2018 T&D O&M Budget[23]

Met-Ed T&D O&M - Annual 2018 ($)		
Transmission		
	Category	**Annual Budget**
560	Operation Supervision & Engineering	0
561	Load Dispatching	680,275
563	Overhead Line Expenses	33,112
565	Transmission of Electricity by Others	9,193,248
566	Miscellaneous Transmission Expenses	(13,365)
567	Rents	0
568	Maintenance Supervision and Engineering	0
569	Maintenance of Structures	20,225
570	Maintenance of Station Equipment	6,000
571	Maintenance of Overhead Lines	0
573	Maintenance of Miscellaneous Transmission Plant	0
575	Market Administration, Monitoring & Compliance Services	0
Transmission Total		**9,919,495**
Distribution		
	Category	**Annual Budget**
580	Operation Supervision & Engineering	242,700
581	Load Dispatching	203,414
582	Station Expenses	641,671
583	Overhead Line Expenses	197,277
584	Underground Line Expenses	0
586	Meter Expenses	597,543
588	Miscellaneous Distribution Expenses	8,070,195
589	Rents	504,437
590	Maintenance Supervision and Engineering	193,021
591	Maintenance of Structures	6,817
592	Maintenance of Station Equipment	7,591,843
593	Maintenance of Overhead Lines	28,894,156
594	Maintenance of Underground Lines	1,527,965
595	Maintenance of Line Transformers	1,878,008
596	Maintenance of Street Lighting and Signal Systems	582,543
597	Maintenance of Meters	2,240,327
598	Maintenance of Miscellaneous Distribution Plant	2,411,184
Distribution Total		**55,783,101**
Met-Ed Total		**65,702,596**

[23] Budgets are subject to change.

Penelec T&D O&M - Annual 2018 (S)		
Transmission		
Category		**Annual Budget**
560	Operation Supervision & Engineering	0
561	Load Dispatching	682,278
562	Station Expenses	135,607
563	Overhead Line Expenses	491,576
565	Transmission of Electricity by Others	33,478,941
566	Miscellaneous Transmission Expenses	0
567	Rents	275,000
568	Maintenance Supervision and Engineering	0
569	Maintenance of Structures	23,493
570	Maintenance of Station Equipment	283,400
571	Maintenance of Overhead Lines	0
573	Maintenance of Miscellaneous Transmission Plant	0
575	Market Administration, Monitoring & Compliance Services	0
Transmission Total		**35,370,295**
Distribution		
Category		**Annual Budget**
580	Operation Supervision & Engineering	340,011
581	Load Dispatching	246,339
583	Overhead Line Expenses	52,827
584	Underground Line Expenses	879,170
586	Meter Expenses	610,579
588	Miscellaneous Distribution Expenses	11,971,998
589	Rents	1,131,717
590	Maintenance Supervision and Engineering	219,824
592	Maintenance of Station Equipment	6,015,575
593	Maintenance of Overhead Lines	30,918,994
594	Maintenance of Underground Lines	146,143
595	Maintenance of Line Transformers	242,897
596	Maintenance of Street Lighting and Signal Systems	3,120,417
597	Maintenance of Meters	3,822,304
598	Maintenance of Miscellaneous Distribution Plant	122,860
Distribution Total		**59,841,655**
Penelec Total		**95,211,950**

Penn Power T&D O&M - Annual 2018 (S)		
Transmission		
	Category	**Annual Budget**
560	Operation Supervision & Engineering	2,131
561	Load Dispatching	129,499
562	Station Expenses	(187)
563	Overhead Line Expenses	(325)
565	Transmission of Electricity by Others	4,974,660
566	Miscellaneous Transmission Expenses	3,870
568	Maintenance Supervision and Engineering	16,147
569	Maintenance of Structures	33,199
570	Maintenance of Station Equipment	3,047
571	Maintenance of Overhead Lines	(80,573)
573	Maintenance of Miscellaneous Transmission Plant	0
575	Market Administration, Monitoring & Compliance Services	0
Transmission Total		**5,081,468**
Distribution		
	Category	**Annual Budget**
580	Operation Supervision & Engineering	0
582	Station Expenses	0
584	Underground Line Expenses	524,466
586	Meter Expenses	74,938
588	Miscellaneous Distribution Expenses	1,079,663
589	Rents	318,986
590	Maintenance Supervision and Engineering	54,953
592	Maintenance of Station Equipment	376,718
593	Maintenance of Overhead Lines	12,374,767
594	Maintenance of Underground Lines	39,187
595	Maintenance of Line Transformers	51,489
596	Maintenance of Street Lighting and Signal Systems	0
597	Maintenance of Meters	598,980
598	Maintenance of Miscellaneous Distribution Plant	472,985
Distribution Total		**15,967,132**
Penn Power Total		**21,048,600**

West Penn T&D O&M - Annual 2018 (S)		
Transmission		
Category		**Annual Budget**
560	Operation Supervision & Engineering	56,519
561	Load Dispatching	1,983,587
562	Station Expenses	24,140
563	Overhead Line Expenses	0
565	Transmission of Electricity by Others	60,377,974
566	Miscellaneous Transmission Expenses	352,998
567	Rents	25,187
568	Maintenance Supervision and Engineering	558,238
569	Maintenance of Structures	17,275
570	Maintenance of Station Equipment	2,032,207
571	Maintenance of Overhead Lines	13,267,007
573	Maintenance of Miscellaneous Transmission Plant	0
575	Market Administration, Monitoring & Compliance Services	0
Transmission Total		**78,695,132**
Distribution		
Category		**Annual Budget**
580	Operation Supervision & Engineering	105,573
581	Load Dispatching	1,823,718
582	Station Expenses	1,209,878
583	Overhead Line Expenses	1,429,962
584	Underground Line Expenses	1,210,000
586	Meter Expenses	1,909,499
588	Miscellaneous Distribution Expenses	14,994,284
589	Rents	0
590	Maintenance Supervision and Engineering	403,051
591	Maintenance of Structures	0
592	Maintenance of Station Equipment	7,456,908
593	Maintenance of Overhead Lines	30,632,377
594	Maintenance of Underground Lines	753,257
595	Maintenance of Line Transformers	289,074
596	Maintenance of Street Lighting and Signal Systems	795,037
597	Maintenance of Meters	1,070,584
598	Maintenance of Miscellaneous Distribution Plant	238,242
Distribution Total		**64,321,444**
West Penn Total		**143,016,576**

Section 57.195(b)(11) Budgeted transmission and distribution capital expenses for the current year in total and detailed by the EDC's own functional account code or FERC account code as available.

2018 T&D Capital Budget[24]

Met-Ed T&D Capital - Annual 2018 ($)	
Category	**Annual Budget**
Capacity	12,046,796
Condition	15,210,656
Facilities	4,029,172
Forced	36,042,546
Meter Related	2,657,061
New Business	14,256,019
Other	39,834,720
Reliability	24,345,555
Street Light	2,048,961
Tools & Equip	1,165,919
Vegetation Management	16,163,160
Met-Ed Total	**167,800,565**

Penelec T&D Capital - Annual 2018 ($)	
Category	**Annual Budget**
Capacity	6,993,475
Condition	9,625,735
Facilities	2,558,659
Forced	43,150,174
Meter Related	2,468,478
New Business	11,979,604
Other	18,159,603
Reliability	47,667,106
Street Light	2,090,990
Tools & Equip	1,438,392
Vegetation Management	28,719,489
Penelec Total	**174,851,705**

[24] Budgets are subject to change and are reported on a Generally Accepted Accounting Principles (GAAP) basis.

Penn Power T&D Capital - Annual 2018 ($)	
Category	**Annual Budget**
Capacity	100,359
Condition	1,412,444
Facilities	122
Forced	17,722,956
Meter Related	540,010
New Business	5,666,730
Other	222,601
Reliability	14,271,585
Street Light	561,281
Tools & Equip	37,747
Vegetation Management	5,326,085
Penn Power Total	**45,861,920**

West Penn T&D Capital - Annual 2018 ($)	
Category	**Annual Budget**
Capacity	2,597,013
Condition	18,476,672
Facilities	3,635,875
Forced	37,132,224
Meter Related	2,436,480
New Business	22,623,356
Other	71,890,920
Reliability	40,754,399
Street Light	6,245,554
Tools & Equip	3,244,253
Vegetation Management	41,088,498
West Penn Total	**250,125,244**

Section 57.195(b)(12) *Significant changes, if any, to the transmission and distribution maintenance programs previously submitted to the Commission.*

Changes to T&D Maintenance Programs

In 2017, the Companies made no significant revisions to their Inspection and Maintenance practices.

ATTACHMENT A

Worst Performing Circuits – Remedial Actions

Met-Ed				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work**	**Progress of Remedial Work or Date - Completed**
S.Nazareth	00809-3	*Performance was driven by line failure (46%), and trees off ROW (43%).*		
		Replace switch	Complete	Apr-17
		Replace/repair high priority items identified during circuit assessment	Complete	Apr-17
		Overhead circuit inspection	Complete	Jul-17
		Replace/repair high priority items identified during circuit assessment	Complete	Oct-17
		Replace polymer insulators identified on circuit	Complete	Oct-17
		Install Supervisory Control and Data Acquisition (SCADA) switch	To be completed 2018	25%
Bath	00873-3	*Performance was driven by an unknown outage (45%), equipment failure (23%) and vehicle accident (14%).*		
		Replace crossarms from inspection	Complete	Oct-17
		Targeted overhead inspection	Complete	Oct-17
		Forestry to trim circuit	To be completed 2018	0%
Mountain	00744-4	*Performance was driven by trees off ROW (88%).*		
		Replace/repair high priority items identified during circuit patrol	Complete	Feb-17
		Mid-cycle forestry inspection	Complete	Mar-17
		Remove trees identified during mid-cycle forestry inspection	Complete	Apr-17
		Remove trees identified during forestry inspection	Complete	Jun-17
		Replace poles and repair damage caused by trees	Complete	Jul-17
		Install Supervisory Control and Data Acquisition (SCADA) switch	To be completed 2018	0%
		On cycle tree trimming	To be completed 2018	0%
		Enhanced tree trimming	To be completed 2018	0%
Lickdale	00625-2	*Performance was driven by trees off ROW (46%) and trees on ROW (31%).*		
		Enhanced tree trimming	To be completed 2018	0%
		On cycle tree trimming	To be completed 2018	0%

Met-Ed				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work**	**Progress of Remedial Work or Date Completed**
Lynnville	00735-1	*Performance was driven by three outages during storms caused by a broken ridge pin, a broken insulator and a broken pole (78%).*		
		Replace tap recloser	Complete	Feb-17
		Overhead circuit inspection	Complete	Jun-17
		Replace crossarms from inspection	Complete	Jun-17
		Engineering Supervisory Control and Data Acquisition (SCADA) review	Complete	Sep-17
		Replace crossarm from inspection	Complete	Nov-17
		On cycle tree trimming	To be completed 2018	5%
		Replace pole identified during wood pole inspection	To be completed 2018	50%
Frystown	00701-2	*Performance was driven by line failure (41%) and equipment failure (20%).*		
		Corrected recloser operation	Complete	Mar-17
		Install fault indicators	Complete	Mar-17
		Replace a misoperating sectionalizer by a recloser	Complete	Jun-17
		Install additional fuses	To be completed 2018	0%
		Circuit reconfiguration due to new substation	To be completed 2018	0%
		On cycle tree trimming	To be completed 2018	0%
		Overhead circuit inspection	To be completed 2018	0%
Birdsboro	00757-1	*Performance was driven by trees off ROW (88%).*		
		Tap recloser replacement	Complete	Mar-17
		Targeted overhead circuit inspection	Complete	Mar-17
		Replace additional porcelain cutouts on circuit three phase with polymer cutouts	Complete	Jun-17
		Enhanced three phase tree trimming	Complete	Oct-17
		Targeted mainline circuit rehabilitation	Complete	Dec-17
		Targeted mainline circuit rehabilitation	To be completed 2018	0%
		Install additional Supervisory Control and Data Acquisition (SCADA) switches	To be completed 2018	25%
		On cycle tree trimming	To be completed 2018	0%

Met-Ed				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work**	**Progress of Remedial Work or Date Completed**
Birchwood	00624-3	*Performance was driven by vehicle accidents (45%), equipment failure (37%), and trees off ROW (16%).*		
		Replace/repair high priority items identified during circuit assessment	Complete	Feb-17
		Install additional Supervisory Control and Data Acquisition (SCADA) switches	Complete	Sep-17
		Install additional Supervisory Control and Data Acquisition (SCADA) switches	Complete	Oct-17
		Install Supervisory Control and Data Acquisition (SCADA) recloser	To be completed 2018	25%
		On cycle tree trimming	To be completed 2018	0%
Friedensburg	00769-1	*Performance was driven by trees off ROW (48%), and outages caused by vehicle accident (26%).*		
		Repair or replace pole top from inspection	Complete	Jan-17
		Replace crossarms from inspection	Complete	Jan-17
		Replace crossarms from inspection	Complete	Mar-17
		Targeted forestry inspection	Complete	Mar-17
		Upgrade mainline recloser	Complete	Mar-17
		Targeted forestry inspection	Complete	Jul-17
		Engineering Supervisory Control and Data Acquisition (SCADA) review	Complete	Sep-17
		Install Supervisory Control and Data Acquisition (SCADA) switches #1	To be completed 2018	33%
		Install Supervisory Control and Data Acquisition (SCADA) switches #2	To be completed 2018	33%
		Install Supervisory Control and Data Acquisition (SCADA) switches #3	To be completed 2018	33%
		Install Supervisory Control and Data Acquisition (SCADA) reclosers #1	To be completed 2018	33%
		Install Supervisory Control and Data Acquisition (SCADA) reclosers #2	To be completed 2018	33%
		On cycle tree trimming	To be completed 2018	0%
Allen	00501-4	*Performance was driven by equipment failure (71%) and trees off ROW (18%).*		
		Pole was replaced and equipment repaired	Complete	Mar-17
		Replace/repair high priority items identified during underground circuit patrol	Complete	Mar-17
		Replace/repair high priority items identified during overhead circuit patrol	Complete	Oct-17
		Replace porcelain cutouts with polymer cutouts in lockout zone	To be completed 2018	0%
		Enhanced tree trimming	To be completed 2018	0%

Met-Ed				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work**	**Progress of Remedial Work or Date Completed**
Swatara Hill	00764-2	*Performance was driven by equipment failure (19%), line failure (22%) and trees off ROW (48%).*		
		Overhead circuit inspection	Complete	Feb-17
		Enhanced three phase tree trimming	Complete	Sep-17
		Tree trimming	Complete	Sep-17
		Install Supervisory Control and Data Acquisition (SCADA) devices	Complete	Dec-17
		Replace porcelain cutouts with polymer cutouts	Complete	Dec-17
		Construct circuit tie	Complete	Dec-17
		Mainline rehabilitation	Complete	Dec-17
		On cycle tree trimming	To be completed 2018	0%
		Overhead circuit inspection repairs	To be completed 2018	50%
Moselem	00779-1	*Performance was driven by an outage caused by wind (82%).*		
		Resag mainline conductor	Complete	Jan-17
		Replace mainline poles	Complete	Feb-17
		Replace substation equipment	Complete	Jun-17
		Install additional mainline tap fusing	To be completed 2018	50%
Belfast	00849-3	*Performance was driven by vehicle accident (56%) and line failure (39%).*		
		On cycle tree trimming	Complete	Jan-17
		Install Supervisory Control and Data Acquisition (SCADA) recloser	To be completed 2018	25%
		Install Supervisory Control and Data Acquisition (SCADA) switches #1	To be completed 2018	25%
		Install Supervisory Control and Data Acquisition (SCADA) switches #2	To be completed 2018	25%
		Install Supervisory Control and Data Acquisition (SCADA) switches #3	To be completed 2018	25%
		Install Supervisory Control and Data Acquisition (SCADA) switches #4	To be completed 2018	25%
Glenside	00535-1	*Performance was driven by a broken guy wire during wind event (43%), line failure (17%) and UG equipment failure caused by sinkhole (13%).*		
		Upgrade mainline underground distribution cable and equipment	Complete	Jan-17
		Repair mainline guy wire	Complete	Feb-17
		Replace spacers in mainline spacer cable section	Complete	Dec-17

Met-Ed				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work**	**Progress of Remedial Work or Date Completed**
Shawnee	00899-3	*Performance was driven by trees off ROW (76%).*		
		Overhead circuit inspection	Complete	Apr-17
		On cycle tree trimming	Complete	Nov-17
		Install Supervisory Control and Data Acquisition (SCADA) switches #1	To be completed 2018	0%
		Install Supervisory Control and Data Acquisition (SCADA) switches #2	To be completed 2018	0%
		Install Supervisory Control and Data Acquisition (SCADA) switches #3	To be completed 2018	0%
Shawnee	00895-3	*Performance was driven by trees off ROW (56%), and line failure (18%).*		
		Overhead circuit inspection	Complete	May-17
		Enhanced three phase tree trimming	Complete	Jul-17
		Replace porcelain cutouts on circuit three phase with polymer cutouts	Complete	Nov-17
		Targeted mainline circuit rehabilitation	Complete	Dec-17
		Install additional Supervisory Control and Data Acquisition (SCADA) switches	Complete	Dec-17
		Construct circuit tie	Complete	Dec-17

Penelec				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Warren South	00220-41	*Performance was driven by trees off ROW (50%), equipment failure (24%) and vehicle accident (12%).*		
		Repair damage caused by vehicle	Complete	Jan-17
		Repair damage caused by trees	Complete	Apr-17
		Repair equipment failure	Complete	Jun-17
		Install advanced distribution protective devices	To be completed 2018	0%
		Porcelain cutout replacement	To be completed 2018	0%
Brookville	00125-23	*Performance was driven by trees off ROW (78%) and equipment failure (14%).*		
		Repair equipment failure	Complete	Jan-17
		Repair damage caused by trees during a storm	Complete	Feb-17
		Repair damage caused by trees during a storm	Complete	Mar-17
		Repair damage caused by trees during a storm	Complete	Aug-17
		Circuit inspection	To be completed 2018	0%
		Replace cap & pin insulators	To be completed 2018	0%
Union City	00206-43	*Performance was driven by trees off ROW (87%).*		
		Repair damage caused by trees during a storm	Complete	Mar-17
		Repair equipment failure	Complete	Jun-17
		Repair damage caused by trees during a storm	Complete	Nov-17
		Replace substation breaker	To be completed 2018	0%
Springboro	00237-52	*Performance was driven by trees off ROW (77%), line failure (10%) and equipment failure (7%).*		
		Repair equipment failure	Complete	Mar-17
		Targeted circuit rehabilitation	Complete	Apr-17
		Repair damage caused by trees during a storm	Complete	Jun-17
		Repair damage caused by trees during a storm	Complete	Nov-17
		Repair line failure during a storm	Complete	Dec-17
Logan	00700-81	*Performance was driven by trees off ROW (87%).*		
		Repair damage caused by trees	Complete	Mar-17
		Repair damage caused by trees	Complete	Sep-17
		Porcelain cutout replacement	To be completed 2018	0%

Penelec				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
East Hickory	00201-41	*Performance was driven by trees off ROW (92%).*		
		Repair line failure	Complete	Feb-17
		Repair damage caused by trees during a storm	Complete	Mar-17
		Repair damage caused by trees	Complete	May-17
		Repair damage caused by trees during a storm	Complete	Jun-17
		Repair damage caused by trees during a storm	Complete	Oct-17
		Replace substation breaker	To be completed 2018	0%
DuBois	00137-23	*Performance was driven by vehicle accident (39%), trees off ROW (31%) and equipment failure (14%).*		
		Repair damage caused by trees during a storm	Complete	Mar-17
		Restore recloser operation of unknown cause	Complete	Jun-17
		Repair damage caused by trees	Complete	Jun-17
		Repair damage caused by vehicle accident	Complete	Jul-17
		Repair damage caused by trees	Complete	Aug-17
		Repair equipment failure	Complete	Aug-17
		Targeted circuit rehabilitation	To be completed 2018	0%
Mansfield	00699-63	*Performance was driven by trees off ROW (44%) and line failure (43%).*		
		Repair equipment failure	Complete	Jan-17
		Repair line failure	Complete	Apr-17
		Repair line failure	Complete	Jul-17
		Repair damage caused by trees during a storm	Complete	Jul-17
		Circuit inspection	To be completed 2018	0%
Tunkhannock	00533-65	*Performance was driven by non-company human error (48%), unknown (15%) equipment failure (13%) and lightning (10%).*		
		Repair damage caused by non-company human error	Complete	Jan-17
		Repair damage caused by non-company human error	Complete	Feb-17
		Install new radio controlled recloser	Complete	Apr-17
		Circuit inspection	Complete	May-17
		Targeted circuit rehabilitation	Complete	Jun-17
		Repair damage caused by lightning	Complete	Aug-17
		Repair equipment failure	Complete	Sep-17
		Restore recloser operation of unknown cause	Complete	Oct-17

Penelec				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Timblin	00103-23	*Performance was driven by trees off ROW (68%) and equipment failure (20%).*		
		Repair damage caused by trees during a storm	Complete	Feb-17
		Repair damage caused by trees during a storm	Complete	Feb-17
		Repair damage caused by trees	Complete	Feb-17
		Repair equipment failure	Complete	Jun-17
		Repair damage caused by trees during a storm	Complete	Nov-17
		Targeted circuit rehabilitation	Complete	Dec-17
		Circuit inspection	To be completed 2018	0%
Utica Junction	00318-51	*Performance was driven by trees off ROW (96%).*		
		Repair damage caused by trees during a storm	Complete	Mar-17
		Repair damage caused by trees	Complete	Jun-17
		Repair damage caused by trees during a storm	Complete	Nov-17
		Replace cap & pin insulators	To be completed 2018	0%
Natl Forge Sw Sta	00577-41	*Performance was driven by trees off ROW (82%).*		
		Repair damage caused by trees	Complete	Feb-17
		Repair damage caused by trees during a storm	Complete	Jun-17
		Repair damage caused by trees during a storm	Complete	Jun-17
		Repair damage caused by trees	Complete	Jul-17
Philipsburg	00164-22	*Performance was driven by equipment failure (53%), line failure (22%) and trees off ROW (7%).*		
		Repair equipment failure	Complete	Mar-17
		Repair line failure	Complete	Mar-17
		Repair equipment failure	Complete	Jun-17
		Repair damage caused by trees during a storm	Complete	Aug-17
		On cycle tree trimming	To be completed 2018	0%
Tiffany	00440-65	*Performance was driven by equipment failure (83%).*		
		Repair equipment failure	Complete	Jan-17
		Repair equipment failure	Complete	Feb-17
		Repair equipment failure	Complete	Mar-17
		Circuit inspection	To be completed 2018	0%

Penelec				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Marienville	00328-51	*Performance was driven by trees off ROW (88%).*		
		Repair damage caused by trees during a storm	Complete	Mar-17
		Repair damage caused by trees during a storm	Complete	May-17
		Repair damage caused by trees	Complete	Jun-17
		Install new radio controlled switch	Complete	Sep-17
		Porcelain cutout replacement	To be completed 2018	0%
Erie East	00234-31	*Performance was driven by trees off ROW (77%) and line failure (7%).*		
		Repair line failure	Complete	Jan-17
		Repair damage caused by trees	Complete	Mar-17
		Repair damage caused by trees during a storm	Complete	Jun-17
		Circuit inspection	Complete	Sep-17
		On cycle tree trimming	Complete	Sep-17
		Repair damage caused by trees	Complete	Dec-18
		Replace substation breaker	To be completed 2018	0%
Union City	00208-43	*Performance was driven by trees off ROW (66%) and fuse operation of unknown cause (14%).*		
		Porcelain cutout replacement	Complete	Jan-17
		Repair damage caused by trees during a storm	Complete	Mar-17
		Restore fuse operation of unknown cause	Complete	Aug-17
		Repair damage caused by trees	Complete	Sep-17
		On cycle tree trimming	To be completed 2018	0%
		Targeted circuit rehabilitation	To be completed 2018	0%
		Install advanced distribution protective devices	To be completed 2018	0%
Bradford South	00106-42	*Performance was driven by trees off ROW (53%) and equipment failure (41%).*		
		Repair equipment failure	Complete	Jan-17
		Repair equipment failure	Complete	Jan-17
		Repair damage caused by trees during a storm	Complete	Mar-17
		Repair damage caused by trees during a storm	Complete	Sep-17
		Porcelain cutout replacement	To be completed 2018	0%

Penelec				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Mansfield	00559-63	*Performance was driven by equipment failure (77%) and trees off ROW (10%).*		
		Repair damage caused by trees during a storm	Complete	Jan-17
		Repair equipment failure	Complete	Mar-17
		Repair equipment failure	Complete	Mar-17
		Repair equipment failure	Complete	May-17
		Repair damage caused by trees during a storm	Complete	Jul-17
		Repair equipment failure	Complete	Aug-17
		On cycle tree trimming	To be completed 2018	0%
		Targeted circuit rehabilitation	To be completed 2018	0%
Edgewood	00089-13	*Performance was driven by trees off ROW (53%) and line failure (33%).*		
		Repair damage caused by trees during a storm	Complete	Feb-17
		Repair line failure	Complete	Feb-17
		Repair damage caused by trees during a storm	Complete	Mar-17
		Repair line failure during a storm	Complete	Jun-17
		On cycle tree trimming	Complete	Jun-17
Tionesta Jct Sw Sta	00498-51	*Performance was driven by trees off ROW (68%) and line failure (17%).*		
		Repair damage caused by trees during a storm	Complete	Jun-17
		Repair damage caused by trees during a storm	Complete	Jun-17
		Repair damage caused by trees	Complete	Sep-17
		Circuit inspection	Complete	Oct-17
		Targeted circuit rehabilitation	Complete	Nov-17
		Repair line failure	Complete	Dec-17
Pemberton	00096-82	*Performance was driven by trees off ROW (96%).*		
		Repair damage caused by trees	Complete	Jan-17
		Repair damage caused by trees during a storm	Complete	Mar-17
		Repair damage caused by trees during a storm	Complete	Aug-17

Penelec				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
North Warren	00207-41	*Performance was driven by trees off ROW (59%) and line failure (27%).*		
		Repair line failure	Complete	Feb-17
		Repair damage caused by trees during a storm	Complete	Mar-17
		Repair damage caused by trees during a storm	Complete	Jun-17
		Replace substation recloser	To be completed 2018	0%
Blairsville East	00081-13	*Performance was driven by trees off ROW (55%), line failure (22%) and animal contact (20%).*		
		Repair line failure	Complete	Feb-17
		Circuit inspection	Complete	May-17
		Repair damage caused by trees	Complete	May-17
		Repair damage caused by trees	Complete	Jul-17
Summit Hall	00500-31	*Performance was driven by line failure (50%) and trees off ROW (47%).*		
		Repair line failure	Complete	Mar-17
		Repair damage caused by trees during a storm	Complete	Mar-17
		Repair damage caused by trees during a storm	Complete	Aug-17
N Meshoppen Tran	00437-65	*Performance was driven by vehicle accident (66%) and line failure (25%).*		
		Repair line failure	Complete	Jan-17
		Repair damage caused by vehicle	Complete	Feb-17
		Repair damage caused by vehicle	Complete	Jun-17
Somerset	00030-12	*Performance was driven by trees off ROW (50%) and equipment failure (36%).*		
		Repair damage caused by trees during a storm	Complete	Feb-17
		Repair damage caused by trees during a storm	Complete	Feb-17
		Repair equipment failure	Complete	Apr-17
		Repair line failure	Complete	Jun-17
		On cycle tree trimming	Complete	Dec-17
		Porcelain cutout replacement	To be completed 2018	0%

Penn Power				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work**	**Progress of Remedial Work or Date Completed**
Stoneboro	W-132	*Performance was driven by trees on/off ROW (86%) and line failure (10%).*		
		Repair line failure	Complete	Mar-17
		Repair damage caused by trees during a storm	Complete	May-17
		Patrol entire circuit for Off ROW hazard trees (mid-cycle addition to 2018 tree trimming cycle).	To be completed 2018	0%
Perry	W-156	*Performance was driven by trees on/off ROW (69%), line failure (11%) and animal (8%).*		
		Reliability job to install fuses	Complete	Jan-17
		Repair damage caused by animal contact	Complete	Apr-17
		Repair damage caused by trees during a storm	Complete	May-17
		Repair line failure	Complete	Jun-17
		Repair damage caused by tree	Complete	Jul-17
		Patrol entire circuit for Off ROW hazard trees (mid-cycle addition to 2018 tree trimming cycle).	To be completed 2018	0%
Seneca	W701	*Performance was driven by vehicle (83%) and trees on/off ROW (10%).*		
		Repair damage caused by tree	Complete	Mar-17
		Repair damage caused by a vehicle	Complete	Mar-17
		Repair damage cause by tree	Complete	Aug-17

West Penn				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Rutan	Bristoria	*Performance was driven by trees off ROW (79%).*		
		Repair damage caused by a tree during a storm	Complete	Feb-17
		Repair damage caused by a tree during a storm	Complete	Mar-17
		Repair damage caused by a tree during a storm	Complete	May-17
		Repair equipment failure during a storm	Complete	Jun-17
		Repair equipment failure during a storm	Complete	Jun-17
		Repair damage caused by a tree during a storm	Complete	Jul-17
		Repair damage caused by a tree during a storm	Complete	Aug-17
		Repair damage caused by a tree	Complete	Oct-17
		Repair damage caused by a vehicle accident	Complete	Nov-17
		Repair damage caused by a tree	Complete	Dec-17
		On cycle tree trimming	Complete	Dec-17
Smith	Florence	*Performance was driven by trees off ROW (44%), unknown (24%), and trees on ROW (19%).*		
		Repair damage caused by a tree	Complete	Jan-17
		Repair damage caused by a tree during a storm	Complete	Mar-17
		Repair damage caused by a tree	Complete	May-17
		Repair damage caused by a tree	Complete	May-17
		Repair line failure	Complete	Jun-17
		Repair damage caused by a tree during a storm	Complete	Jul-17
		Restore unknown outage	Complete	Oct-17
		Restore unknown outage during a storm	Complete	Nov-17
		Repair damage caused by a tree during a storm	Complete	Dec-17
		Zone 2 Ash Removal	Complete	Dec-17

West Penn				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
North Fayette	Beechcliff	*Performance was driven by equipment failure (53%), trees off ROW (14%), and trees on ROW (12%).*		
		Repair damage caused by a tree during a storm	Complete	Mar-17
		Repair equipment failure during a storm	Complete	Mar-17
		Repair equipment failure	Complete	Apr-17
		Line rehabilitation	Complete	May-17
		Repair damage caused by a tree during a storm	Complete	Jul-17
		Repair damage caused by a tree during a storm	Complete	Jul-17
		Repair line failure	Complete	Aug-17
		Repair equipment failure	Complete	Dec-17
Cooperstown	Twin Willows	*Performance was driven by trees off ROW (82%).*		
		Restore unknown outage during a storm	Complete	Mar-17
		Repair damage caused by a tree	Complete	Apr-17
		Repair damage caused by a tree during a storm	Complete	May-17
		Repair damage caused by a tree during a storm	Complete	Jul-17
		Repair damage caused by a tree	Complete	Sep-17
		Repair damage caused by a tree during a storm	Complete	Nov-17
		Repair damage caused by a tree during a storm	Complete	Dec-17
		On cycle tree trimming	Complete	Dec-17
Mateer	Dime Rd	*Performance was driven by equipment failure (53%) and trees off ROW (37%).*		
		Repair equipment failure	Complete	Jan-17
		Repair damage caused by a tree during a storm	Complete	Feb-17
		Repair damage caused by a tree	Complete	Mar-17
		Repair damage caused by a tree during a storm	Complete	Mar-17
		Repair damage caused by a tree	Complete	Apr-17
		Repair damage caused by a tree during a storm	Complete	Jun-17
		Repair equipment failure	Complete	Jul-17
		Repair damage caused by a tree during a storm	Complete	Aug-17
		Repair equipment failure	Complete	Sep-17
		Repair damage caused by a tree	Complete	Oct-17
		Repair damage caused by a tree during a storm	Complete	Nov-17
		Zone 2 Ash removal	Complete	Dec-17

West Penn				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Piney Fork	Stoltz	*Performance was driven by trees off ROW (66%) and animal (20%).*		
		Restore unknown outage	Complete	Mar-17
		Repair damage caused by a tree during a storm	Complete	Mar-17
		Repair damage caused by a tree during a storm	Complete	Jun-17
		Repair line failure	Complete	Jul-17
		On cycle tree trimming	Complete	Sep-17
Franklin	Rogersville	*Performance was driven by trees off ROW (38%), unknown (22%), and line failure (18%).*		
		Restore unknown outage during a storm	Complete	Feb-17
		Repair damage caused by a tree during a storm	Complete	Feb-17
		Line rehabilitation	Complete	Mar-17
		Overhead circuit inspection	Complete	Apr-17
		Repair damage caused by a tree during a storm	Complete	Jun-17
		Restore unknown outage during a storm	Complete	Jun-17
		Repair damage caused by a tree during a storm	Complete	Jul-17
		Repair damage caused by a tree during a storm	Complete	Jul-17
		Repair line failure	Complete	Aug-17
		Restore unknown outage during a storm	Complete	Nov-17
		Repair damage caused by a tree during a storm	Complete	Dec-17
Harwick	Harmar	*Performance was driven by trees off ROW (60%), equipment failure (16%), and vehicle (14%).*		
		Repair damage caused by a tree during a storm	Complete	Feb-17
		Overhead circuit inspection	Complete	Apr-17
		Repair damage caused by a tree	Complete	Jul-17
		Repair equipment failure during a storm	Complete	Jul-17
		Repair damage caused by a tree during a storm	Complete	Aug-17
		Repair damage caused by a tree during a storm	Complete	Nov-17
		Repair damage caused by a vehicle accident	Complete	Dec-17

West Penn				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Fort Palmer	West Fairfield	*Performance was driven by trees off ROW (63%) and human error non-company (15%).*		
		Repair damage caused by a tree during a storm	Complete	Mar-17
		Repair damage caused by a tree during a storm	Complete	Mar-17
		Repair damage caused by a tree during a storm	Complete	Mar-17
		Repair damage caused by a tree	Complete	Apr-17
		Repair equipment failure during a storm	Complete	Jun-17
		Repair damage caused by a tree during a storm	Complete	Jul-17
		Repair damage caused by a tree during a storm	Complete	Dec-17
		On cycle tree trimming	Complete	Nov-17
Smithton	Smithton	*Performance was driven by trees off ROW (65%) and line failure (22%).*		
		Repair damage caused by a tree during a storm	Complete	Feb-17
		Repair damage caused by a tree	Complete	Feb-17
		Restore unknown outage during a storm	Complete	Mar-17
		Repair damage caused by a vehicle accident	Complete	Apr-17
		Repair damage caused by a tree during a storm	Complete	Jun-17
		Repair damage caused by a tree during a storm	Complete	Jul-17
		Repair line failure	Complete	Oct-17
		On cycle tree trimming	Complete	Dec-17
Driftwood	Driftwood	*Performance was driven by trees of ROW (44%) and line failure (36%).*		
		Repair equipment failure	Complete	Jan-17
		Repair line failure during a storm	Complete	Feb-17
		Repair damage caused by a tree	Complete	Mar-17
		Repair damage caused by a tree during a storm	Complete	Mar-17
		Forced outage to repair a pole	Complete	May-17
		Repair damage caused by a tree during a storm	Complete	Aug-17
		Repair damage caused by human error non-company	Complete	Dec-17

West Penn				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Westraver	Pittsburgh Coal	*Performance was driven by line failure (67%) and trees off ROW (30%).*		
		Repair damage caused by a tree during a storm	Complete	Jan-17
		Forced outage to repair regulator during a storm	Complete	Feb-17
		Repair line failure	Complete	Mar-17
		Repair line failure	Complete	Jun-17
		Repair line failure	Complete	Jun-17
		Line rehabilitation	Complete	Jun-17
		Repair damage caused by a tree during a storm	Complete	Aug-17
		Repair damage caused by a tree	Complete	Sep-17
Krendale	Unionville	*Performance was driven by trees off ROW (82%) and unknown (14%).*		
		Restore unknown outage during a storm	Complete	Feb-17
		Repair damage caused by a tree during a storm	Complete	Feb-17
		Restore unknown outage during a storm	Complete	Mar-17
		Repair damage caused by a tree during a storm	Complete	Mar-17
		Zone 2 Ash Removal	Complete	Apr-17
		Repair damage caused by a tree during a storm	Complete	Apr-17
		Repair damage caused by a tree	Complete	Oct-17
		Restore unknown outage during a storm	Complete	Nov-17

ATTACHMENT B

FirstEnergy's Compliance with Terms of the March 30, 2015 Management Audit Order & Corrective Action Plan

On March 30, 2015, the Commission issued an order directing Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company to prepare and file a revised implementation plan relating to specific topics addressed in the report issued by the Commission's Bureau of Audits on February 12, 2015.[25] More specifically, Ordering Paragraphs 3 and 4 refer to reliability and worst performing circuits, respectively.

In a tentative order issued on August 20, 2015 accepting the Implementation Plans, the Companies were ordered to report progress for Ordering Paragraphs 3 and 4 on an annual basis in the Annual Reliability Report filed under 52 Pa. Code § 57.195.[26]

See Attachment B for the 2017 progress report for Ordering Paragraphs 3 and 4.

---

[25] Implementation Plans for the Focused Management Audit of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company can Docket Nos. D-2013-2365991, D-2013-2365992, D-2013-2365993, D-2013-2365994.
[26] Additionally, in the tentative order, it allowed Penn Power and Penelec to consider the Annual Reliability Report as the fourth quarter CAP update. In a letter dated January 6, 2017 from Paul Diskin, Director, Technical Utility Services, Penn Power is no longer required to provide quarterly CAP updates. Please note that Penelec's 2017 projects related to its Reliability and Worst Performing Circuit Plans are the same as Penelec's 2017 projects related to its CAP.

Attachment B

Met-Ed Projects 2017											
Project Description	Plan Type	Start Date *(Actual/Projected)*	Original Projected Completion Date	Updated Projected Completion Date	Actual Completion Date	Percent Complete	Potential SAIFI Reliability Benefit	Potential CAIDI Reliability Benefit	Potential SAIDI Reliability Benefit	Actual Project Cost	Comments
776-1 Create Circuit Tie to 754-1 Circuit	WPC	January 2017	December 2017		December 21, 2017	100%	0.0010		0.118	$ 572,756.00	
756-1 Create Additional Circuit Tie within 756-1	WPC	January 2017	December 2017		December 20, 2017	100%	0.0010		0.118	$ 814,726.00	
789-1 Extend Single Phase at 2 Locations to Eliminate 2 Off Road Line Sections	WPC	January 2017	December 2017		December 28, 2017	100%	0.0005		0.059	$ 317,368.00	
895-3 Create Circuit Tie to 816-3 Circuit	WPC	January 2017	December 2017		December 19, 2017	100%	0.0010		0.118	$ 911,759.00	
764-2 Create Tie to 763-2 Circuit	WPC	January 2017	December 2017		December 27, 2017	100%	0.0010		0.118	$ 221,283.00	
Targeted Mainline Rehabilitation (5 Circuits)	WPC	January 2017	December 2017		December 28, 2018	100%	0.0004		0.040	$ 1,893,211.00	
Targeted Mainline Rehabilitation (6 Circuits)	WPC	January 2017	December 2017		December 28, 2018	100%	0.0004		0.040		
Porcelain Cutout Replacement (5 Circuits)	WPC	January 2017	December 2017		December 11, 2017	100%	0.0004		0.040	$ 510,106.00	
SCADA (New Installations & Retrofits - 5 Circuits)	WPC	January 2017	December 2017		December 28, 2018	100%	0.0166		2.785	$ 745,509.00	
Forestry - Enhanced Tree Trimming & Danger Tree Removal (5 Circuits)	WPC	January 2017	December 2017		December 23, 2018	100%	0.0070		0.919		
Forestry - Enhanced Tree Trimming & Danger Tree Removal (6 Circuits)	WPC	January 2017	December 2017		December 23, 2018	100%	0.0070		0.919	$ 4,295,615.00	
Forestry - Enhanced Tree Trimming & Danger Tree Removal (5 Circuits)	WPC	January 2017	December 2017		December 23, 2018	100%	0.0070		0.919		

Penelec Projects 2017

Transmission Projects (Project Lead: Engineering Project Manager)

Project Description	Plan Type	Start Date (Actual/Projected)	Original Projected Completion Date	Updated Projected Completion Date	Actual Completion Date	Percent Complete	Potential SAIFI Reliability Benefit	Potential CAIDI Reliability Benefit	Potential SAIDI Reliability Benefit	Actual Project Cost	Comments
Transmission Improvement Study - REMOVED	Reliability	January 2017	December 2017							$ 12,011,250	See the Company's response to VII-1 for the explanation for removal of this project.

Distribution Lines Projects (Project Lead: Engineering Project Manager)

Project Description	Plan Type	Start Date (Actual/Projected)	Original Projected Completion Date	Updated Projected Completion Date	Actual Completion Date	Percent Complete	Potential SAIFI Reliability Benefit	Potential CAIDI Reliability Benefit	Potential SAIDI Reliability Benefit	Actual Project Cost	Comments
Create Circuit Ties and Loops (Salix/Scalp Substations) - NEW	WPC	January 2017	December 2017		July 24, 2017	100%	0.0030		0.59	$ 661,444	Project to replace the Philipsburg Mod Sub project.
Protection/coordination work on 00052-72	Reliability	February 2017	May 2017		May 19, 2017	100%	0.0005		0.06	$ 60,568	
Finish protection/coordination work on 00611-63 - NEW	Reliability	January 2017	December 2017		February 1, 2017	100%	0.0005		0.06	$ 39,108	
Finish protection/coordination work on 00278-65 - NEW	Reliability	January 2017	December 2017		November 21, 2017	100%	0.0005		0.06	$ 3,477	
Finish protection/coordination work on 00048-31 - NEW	Reliability	January 2017	December 2017		February 6, 2017	100%	0.0005		0.06	$ 12,393	
Finish protection/coordination work on 00120-13 - NEW	Reliability	January 2017	December 2017		March 8, 2017	100%	0.0008		0.07	$ 2,271	
Finish protection/coordination on 00427-34 - NEW	Reliability	January 2017	December 2017		June 8, 2017	100%	0.0005		0.06	$ 13,527	
Cutout Replacement on 00787-65	Reliability	July 2017	October 2017		April 19, 2017	100%	0.0010		0.12	$ 15,768	
Grover 00527-63 Line Rehabilitation 13 miles	WPC	June 2017	November 2017		August 10, 2017	100%	0.0004		0.04	$ 1,295,242	
Erie West 00237-31 Line Rehabilitation 10 miles	WPC	June 2017	October 2017		July 17, 2017	100%	0.0002		0.02	$ 465,630	
Rolling Meadows 00310-31 Line Rehabilitation 10 miles	WPC	June 2017	October 2017		July 17, 2017	100%	0.0008		0.09	$ 432,803	
Russell Hill 00282-65 Line Rehabilitation - NEW	WPC	January 2017	December 2017		December 21, 2017	100%	0.0020		0.18	$ 2,040,555	Project to replace the Philipsburg Mod Sub project.
Finish protection/coordination work on 00094-13 - REMOVED	Reliability	March 2017	June 2017				0.0005		0.06		Project completed in previous years. Replaced with Circuit 00120-13
Finish protection/coordination on 00528-31 - REMOVED	Reliability	January 2017	December 2017				0.0005		0.06		Project completed in previous years. Replaced with Circuit 00427-34
Finish protection/coordination work on 00312-31 - REMOVED	Reliability	March 2017	June 2017				0.0005		0.06		Subsequent data analysis performed during the design phase of this project determined a lower reliability benefit than originally calculated. The funds targeted to this project have been reallocated.
Finish protection/coordination work on 00297-65 - REMOVED	Reliability	March 2017	June 2017				0.0005		0.06		Subsequent data analysis performed during the design phase of this project determined a lower reliability benefit than originally calculated. The funds targeted to this project have been reallocated.
Finish protection/coordination on 00558-63 - REMOVED	Reliability	March 2017	June 2017				0.0003		0.04		Subsequent data analysis performed during the design phase of this project determined a lower reliability benefit than originally calculated. The funds targeted to this project have been reallocated.
Finish protection/coordination work on 00017-12 - REMOVED	Reliability	March 2017	June 2017				0.0001		0.01		Subsequent data analysis performed during the design phase of this project determined a lower reliability benefit than originally calculated. The funds targeted to this project have been reallocated.

Porcelain Cutout Replacement (Project Lead: Engineering Project Manager)

Project Description	Plan Type	Start Date (Actual/Projected)	Original Projected Completion Date	Updated Projected Completion Date	Actual Completion Date	Percent Complete	Potential SAIFI Reliability Benefit	Potential CAIDI Reliability Benefit	Potential SAIDI Reliability Benefit	Actual Project Cost	Comments
34kV 3 Phase Priority 3 circuit fist cutout replacement (78 circuits)	Reliability	January 2017	December 2017		September 28, 2017	100%	0.0028		0.33	$ 1,521,007	
Starrucca 00744-65 Porcelain cutout replacement	WPC	June 2017	September 2017		May 11, 2017	100%	0.0001		0.01	$ 180,438	

12kV and below Substation Isolation SCADA (Project Lead: Engineering Project Manager)

Project Description	Plan Type	Start Date (Actual/Projected)	Original Projected Completion Date	Updated Projected Completion Date	Actual Completion Date	Percent Complete	Potential SAIFI Reliability Benefit	Potential CAIDI Reliability Benefit	Potential SAIDI Reliability Benefit	Actual Project Cost	Comments
Doris - Install SCADA	Reliability	April 2017	May 2017		May 1, 2017	100%	0.0010		0.11	$ 121,048	
Loretto - Install SCADA	Reliability	May 2017	June 2017		July 1, 2017	100%	0.0009		0.11	$ 288,256	
Blairsville - Install SCADA	Reliability	August 2017	September 2017		September 29, 2017	100%	0.0007		0.08	$ 93,912	

Penelec Projects 2017

12kV and below Substation Isolation SCADA (Project Lead: Engineering Project Manager)

Project Description	Plan Type	Start Date (Actual/Projected)	Original Projected Completion Date	Updated Projected Completion Date	Actual Completion Date	Percent Complete	Potential SAIFI Reliability Benefit	Potential CAIDI Reliability Benefit	Potential SAIDI Reliability Benefit	Actual Project Cost	Comments
Summit Hall - Install SCADA	Reliability	August 2017	September 2017		September 30, 2017	100%	0.0007		0.08	$ 66,133	
Meyersdale - Install SCADA	Reliability	November 2017	December 2017		December 6, 2017	100%	0.0006		0.07	$ 154,887	
Ehrenfeld Jackson - Install SCADA	Reliability	August 2017	September 2017		October 20, 2017	100%	0.0006		0.07	$ 182,957	
Smithfield - Install SCADA	Reliability	September 2017	October 2017		October 9, 2017	100%	0.0008		0.07	$ 110,754	
Sankertown - Install SCADA	Reliability	October 2017	November 2017		May 1, 2017	100%	0.0005		0.06	$ 132,443	
Conemaugh Boro - Install SCADA	Reliability	June 2017	July 2017		June 13, 2017	100%	0.0005		0.06	$ 115,447	
Franklin Boro - Install SCADA	Reliability	August 2017	September 2017		August 16, 2017	100%	0.0005		0.06	$ 169,629	
Powell - Install SCADA - NEW	WPC	January 2017	December 2017		August 8, 2017	100%	0.0013		0.27	$ 288,712	Project to replace the Philipsburg Mod Sub project.
Samual Rea Car Shop - Install SCADA - NEW	WPC	January 2017	December 2017		December 7, 2017	100%	0.0004		0.26	$ 113,333	Project to replace the Philipsburg Mod Sub project.
Buffalo Road - Install SCADA - NEW	WPC	January 2017	December 2017		August 4, 2017	100%	0.0020		0.20	$ 345,646	Project to replace the Philipsburg Mod Sub project.
Claysburg - Install SCADA - NEW	WPC	January 2017	December 2017		December 7, 2017	100%	0.0012		0.19	$ 150,713	Project to replace the Philipsburg Mod Sub project.
St Benedict - Install SCADA - NEW	WPC	January 2017	December 2017		December 7, 2017	100%	0.0014		0.19	$ 138,259	Project to replace the Philipsburg Mod Sub project.
Lake Como - Install SCADA - NEW	WPC	January 2017	December 2017		October 19, 2017	100%	0.0024		0.24	$ 328,844	Project to replace the Philipsburg Mod Sub project.
Marienville - Install SCADA - NEW	WPC	August 2017	September 2017		September 28, 2017	100%	0.0013		0.12	$ 69,794	Project to replace the Philipsburg Mod Sub project.
Brookville West - Install SCADA - NEW	Reliability	January 2017	December 2017		November 1, 2017	100%	0.0006		0.07	$ 67,466	
Gallitzin - Install SCADA - NEW	Reliability	January 2017	December 2017		August 25, 2017	100%	0.0006		0.07	$ 176,504	
McConnellstown - Install SCADA - REMOVED	Reliability	July 2017	August 2017				0.0007		0.08		Subsequent data analysis performed during the design phase of this project determined a lower reliability benefit than originally calculated. The funds targeted to this project have been reallocated.
Sugar Hill - Install SCADA - REMOVED	Reliability	May 2017	June 2017				0.0009		0.11		Subsequent data analysis performed during the design phase of this project determined a lower reliability benefit than originally calculated. The funds targeted to this project have been reallocated.

Forestry (Project Lead: Forestry Manager)

Description	Plan Type	Start Date (Actual/Projected)	Original Projected Completion Date	Updated Projected Completion Date	Actual Completion Date	Percent Complete	Potential SAIFI Reliability Benefit	Potential CAIDI Reliability Benefit	Potential SAIDI Reliability Benefit	Actual Project Cost	Comments
Enhanced tree removal (additional 11 trees per mile - 1,800 total miles)	Reliability	January 2017	December 2017		December 29, 2017		0.0120	0.00	1.40	$ 2,857,969	
Accelerated Off ROW tree removal zone 1 & 2 on high tree SAIFI 34.5kV (404 miles)	Reliability	January 2017	December 2017		June 7, 2017		0.0130	1.37	3.52		
Accelerated Off ROW tree removal zone 1 & 2 on high tree SAIFI (101 miles)	Reliability	January 2017	December 2017		June 12, 2017		0.0070	0.74	1.90	$ 773,291	
Accelerated Off ROW tree removal zone 1 & 2 on high tree SAIFI 34.5kV (363 miles)	Reliability	January 2017	December 2018	December 2017	December 18, 2017		0.0080	0.63	1.63		
Accelerated Off ROW tree removal zone 1 & 2 on high tree SAIFI (43 miles)	Reliability	January 2017	December 2018	December 2017	December 18, 2017		0.0008	0.09	0.23		

Substation (Project Lead: Substation Manager)

Description	Plan Type	Start Date (Actual/Projected)	Original Projected Completion Date	Updated Projected Completion Date	Actual Completion Date	Percent Complete	Potential SAIFI Reliability Benefit	Potential CAIDI Reliability Benefit	Potential SAIDI Reliability Benefit	Actual Project Cost	Comments
Philipsburg 00162-22 Mod Sub - REMOVED	WPC	January 2017	December 2017				0.0055		0.6423		Per discussions with Comission Staff, this project has been removed and is replaced with the additional projects noted in this attachment.
Cap and Pin Insulator Replacement - 15 Substations - NEW	WPC	January 2017	December 2017		December 21, 2017	100%	0.6200			$ 2,078,822	Project to replace the Philipsburg Mod Sub project.

Attachment B

Penn Power Projects 2017											
Forestry (Project Lead: Forestry Manager)											
Project Description	**Plan Type**	**Start Date** *(Actual/Projected)*	**Original Projected Completion Date**	**Updated Projected Completion Date**	**Actual Completion Date**	**Percent Complete**	**Potential SAIFI Reliability Benefit**	**Potential CAIDI Reliability Benefit**	**Potential SAIDI Reliability Benefit**	**Actual Project Cost**	**Comments**
Enhanced Tree Removal (485 miles)	Reliability	January 2017	December 2017		December 30, 2017	100%	0.017	1.685	4.056	$ 5,945,849.00	
Enhanced Tree Removal (200 miles)	Reliability	January 2017	December 2018	December 2017	December 30, 2017	100%	0.007	0.696	1.675		
Distribution Line Projects (Project Lead: Line General Manager)											
Project Description	**Plan Type**	**Start Date** *(Actual/Projected)*	**Original Projected Completion Date**	**Updated Projected Completion Date**	**Actual Completion Date**	**Percent Complete**	**Potential SAIFI Reliability Benefit**	**Potential CAIDI Reliability Benefit**	**Potential SAIDI Reliability Benefit**	**Actual Project Cost**	**Comments**
Install Circuit Ties, Loops, or Sources (29 miles and 2 Subs)	Reliability	January 2017	December 2017		December 31, 2017	100%		0.769	0.991	$ 11,311,639.00	
Transmission Projects (Project Lead: Line General Manager)											
Project Description	**Plan Type**	**Start Date** *(Actual/Projected)*	**Original Projected Completion Date**	**Updated Projected Completion Date**	**Actual Completion Date**	**Percent Complete**	**Potential SAIFI Reliability Benefit**	**Potential CAIDI Reliability Benefit**	**Potential SAIDI Reliability Benefit**	**Actual Project Cost**	**Comments**
Install 13 SCADA MOAB switches	Reliability	January 2017	December 2017		December 30, 2017	100%		0.400	0.560	$ 925,731.77	
69 kV Line Rehab (24 miles)	Reliability	January 2017	December 2017		November 1, 2017	100%	0.023	0.894	2.838	$ 20,005,168.00	

Attachment B

West Penn Projects 2017											
Project Description	Plan Type	Start Date *(Actual/Projected)*	Original Projected Completion Date	Updated Projected Completion Date	Actual Completion Date	Percent Complete	Potential SAIFI Reliability Benefit	Potential CAIDI Reliability Benefit	Potential SAIDI Reliability Benefit	Actual Project Cost	Comments
Hardware and Coordination Rehabilitation	WPC	January 2017	December 2017		December 8, 2017	100%	0.004		0.180	$ 640,788.81	
Emerald Ash Borer Mitigation	Reliability	January 2017	December 2017		December 30, 2017	100%				$ 8,513,591.33	
Subtransmission Modernization and Automation	Reliability	January 2017	December 2017		December 27, 2017	100%	0.005		0.603	$ 4,131,663.87	
Enhanced Overcurrent Protection and SCADA Control	Reliability	January 2017	December 2017		December 22, 2017	100%	0.004		0.066	$ 3,093,063.84	
Targeted Circuit Rehabilitation	Reliability	January 2017	December 2017		December 8, 2017	100%	0.008		0.090	$ 4,458,062.56	
Replace Underground Getaways installed prior to 1988	Reliability	January 2017	December 2017		December 21, 2017	100%	0.001		0.070	$ 268,796.54	This category will contain an additional three projects, which were deferred from 2016.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Joint 2017 Annual Reliability Report –	:	
Metropolitan Edison Company,	:	
Pennsylvania Electric Company and	:	
Pennsylvania Power Company	:	

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true and correct copy of the foregoing document upon the individuals listed below, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

Service by first class mail, as follows:

John R. Evans
Office of Small Business Advocate
Suite 1102, Commerce Building
300 North Second Street
Harrisburg, PA 17101

Richard Kanaskie
Bureau of Investigation & Enforcement
Pennsylvania Public Utility Commission
P.O. Box 3265
Reading, PA 17105-3265

Tanya McCloskey
Office of Consumer Advocate
555 Walnut Street – 5th Floor
Harrisburg, PA 17101-1923

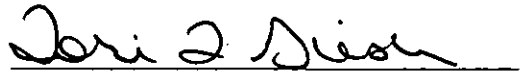
Scott Rubin
Utility Workers Union of America
333 Oak Lane
Bloomsburg, PA 17815-2036

Service by electronic mail, as follows:

David Dulick, General Counsel
David Dulick@ccsenergy.com

Rich Geosits, Manager, Power Delivery
Rich Geosits@ccsenergy.com

Dated: April 30, 2018



Tori L. Giesler
Attorney No. 207742
FirstEnergy Service Company
2800 Pottsville Pike
P.O. Box 16001
Reading, Pennsylvania 19612-6001
(610) 921-6203
tgiesler@firstenergycorp.com

Counsel for Metropolitan Edison Company,
Pennsylvania Electric Company,
Pennsylvania Power Company and
West Penn Power Company

Extremely Urgent

This envelope is for use with the following serv

Visit ups… -742-5… to schec… hear you

Domestic S…

- To qualify … correspon… ntain … weigh 8 o… d must … those liste… r than

Internationa…

- The UPS Ex… commerci… value. Certa… electronic media as documents. Visit ups.com/importexport to verify if your shipment is classified as a document
- To qualify for the Letter rate, the UPS Express Envelope must weigh 8 oz. or le… UPS Express Envelopes weighing more than 8 oz. will be billed by weight.

Note: Express Envelopes are not recommended for shipments of electronic me… containing sensitive personal information or breakable items. Do not send cash or cash equivalent.

RXCTUZP PAHARRSBURG MAY 01 05:04:33 2018
1ZAE1440135729
1500 9464
54B - RDL
P:SILVER S:BBLUE I:39D
HARRISBURG PA 17120-1008
FL 2
400 NORTH ST
PUBLIC UTILITY COMMISSION

MAIL ROOM
(610) 921-6633
AE-1440
2800 POTTSVILLE PIKE
READING PA 19605-2459

LTR 1 OF 1

SHIP TO:
ROSEMARY CHIAVETTA, SECRETARY
PA PUBLIC UTILITY COMMISSION
2ND FLOOR
COMMONWEALTH KEYSTONE BUILDING
400 NORTH STREET
HARRISBURG PA 17120-0079

PA 171 9-20

…S NEXT DAY AIR SAVER 1P

…CKING #: 1Z AE1 440 13 5729 9464

…LLING: P/P

…EF 1:503303
…EF 2:TORI GEISLER-REAP-37

WS 20.0.20 LP2844 99.0A 04/2018

SEE NOTICE ON REVERSE regarding UPS Terms, and notice of limitation of liability. Where allowed by law, shipper authorizes UPS to act as forwarding agent for export control and customs purposes. If exported from the US, shipper certifies that the commodities, technology or software were exported from the US in accordance with the Export Administration Regulations. Diversion contrary to law is prohibited.

CMPC

To: CHIAVETA, R. PUC

Agency: PUC

Floor:

External Carrier: UPS 1 DAY AIR

5/1/2018 10:50:50 AM

1ZAE14401357299464