FirstEnergy

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April 30, 2020

VIA E-FILING

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

Re: Joint 2019 Annual Reliability Report – Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company

Dear Secretary Chiavetta,

Pursuant to 52 Pa. Code § 57.195(a) and (b), enclosed for filing is the Joint 2019 Annual Reliability Report ("Joint Report") of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company (collectively, the "Companies").

Please contact me if you have any questions.

Sincerely,

Teresa K. Harrold

kbw
Enclosures

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

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

Joint 2019 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 2019 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 2019 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.*

The Companies serve more than two million Pennsylvania customers and their service territory covers more than 20,000 square miles. From the physical field employees up to and including top management, the Companies endeavor to operate their distribution systems in a manner that results in safe, reasonable, and cost-effective reliable service for their customers. Methods to improve the efficiency, adequacy and reliability of the distribution system are a continual focus and every employee has an investment in each of the Companies' respective reliability metrics. The Companies utilize core programs to support cost-effective and reliable service. These programs include, but are not limited to:

- Inspection and Maintenance ("I&M")
    - The Distribution Inspection & Maintenance Practices[1] are designed to assist in determining the need for, and prioritization of, the repair or replacement of distribution system components and facilities.
- Vegetation Management
    - Routine cycle tree trimming removes selected incompatible trees within the clearing zone corridor, removes certain defective limbs that are overhanging

[1] Pursuant to 52 Pa. Code § 57.198(a), every two years an electric distribution company shall file with the Commission a biennial plan for the periodic inspection, maintenance, repair and replacement of its facilities. The Companies submitted their Biennial Inspection, Maintenance, Repair and Replacement Plan for the period January 1, 2019 through December 31, 2020 on September 29, 2017, which was deemed approved pursuant to 52 Pa. Code § 57.198(i).

primary conductors, controls selected incompatible brush, and removes off right-of-way priority trees.[2]

- Enhanced tree trimming complements the routine cycle tree trimming by removing healthy limbs overhanging primary conductors on areas where it's determined to be beneficial.
- In response to damage caused by the Emerald Ash Borer, a program to proactively remove Ash Trees off right-of-way was implemented.
- Post-storm circuit patrols target the areas with high tree-related outages. Circuit patrols identify trees damaged in 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.

- Customers Experiencing Multiple Interruptions ("CEMI")
  - The CEMI program is aimed to reduce frequent or repeated outages for affected clusters of customers or frequently operated devices.
- Load Forecasting and Distribution Planning
  - The load forecasting application is used to estimate future substation and circuit loading based upon historical load data and the planning criteria guidelines are then used to provide a consistent approach for planning the safe, reliable, orderly, and economic expansion of the distribution system.
- Circuit Protection
  - Circuit protection practices are aimed at achieving safety and security for the public and employees, maximizing service reliability to customers, minimizing damage to distribution equipment, and establishing a consistent process and set of application standards for distribution circuit protection.
- Long-Term Infrastructure Improvement Plans ("LTIIP")
  - The Companies first began to execute their respective LTIIP programs in 2016. These plans include expenditures and programs designed to adequately maintain and improve the efficiency, safety, adequacy and reliability of the distribution system. Most recently, the Companies each filed a second LTIIP ("LTIIP II") spanning the period of 2020 to 2024. LTIIP II focuses on two areas: asset health

[2] 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.

and outage exposure. Asset health focuses on maintaining the system in a state of good repair while outage exposure focuses on minimizing the impact of customer outages. LTIIP II includes initiatives and expenditures within these two focus areas that are designed to maximize sustained reliability over the long-term.

In addition to the reliability programs above, the Companies also utilize various strategies to efficiently respond to customer and equipment outages. These include, but are not limited to:

- Minimizing Outage Impact
    - The Companies incorporate design philosophies that support grid operation resulting in maximized reliability. These philosophies include instantaneous breaker tripping on select circuits, circuit sectionalizing devices, and remote device operation (such as supervisory control and data acquisition) to minimize the impact of an outage when possible.
- Storm Exercises
    - Each Company performs an annual storm exercise. A well-designed exercise provides a low-risk environment to test and validate capabilities, familiarize personnel with plans, procedures, roles, and responsibilities, and foster meaningful interaction and communication across internal and external organizations.
- Smart Meters
    - The Companies have completed mass deployment of smart meters to customers across Pennsylvania. Smart meter installation is a step toward a more modernized electric system that will enable automated meter readings. Smart meters also assist during outage restoration periods, especially when there are a significant number of single customer outages, by allowing the Companies to ping the meter to determine if a customer's service has been restored.
- Incident Command System ("ICS")
    - The Companies are beginning to utilize a more formalized ICS structure, which is designed to enable effective and efficient incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organization. By expanding the use of ICS, the Companies' incident response ability is improved, and reliability is enhanced by

utilizing a common system for incident response personnel (both intrastate and interstate).

To support best industry practices, the Companies participate in various external organizations such as the Electric Power Research Institute, the Institute of Electrical and Electronics Engineers, and the Energy Association of Pennsylvania, which focus on topics like reliability, power quality, regulatory issues, distribution planning, vegetation management, risk mitigation, distributed energy resources and more. Lastly, to ensure continuous improvement, the Companies formed a team comprised of reliability engineers to perform an internal review of reliability projects, expenditures, and performance, and to develop an overarching strategy for long-term reliability maintenance and improvement.

In 2019, the Companies had varying performance in regard to the twelve-month standards for System Average Interruption Duration Index ("SAIDI"), System Average Interruption Frequency Index ("SAIFI"), and Customer Average Interruption Duration Index ("CAIDI"). The primary drivers impacting reliability performance were: 1) weather (primarily minor storms); 2) tree-related outages, specifically off right-of-way trees, [3] occurring during inclement weather; and 3) line and equipment failures. The Companies are using the strategies and tools, as laid out above, to address these outage causes and continue to make improvements to reliability performance.

[3] The Companies' options under the law are strictly limited when it comes to all forms of off right-of-way tree management, with the sole solution it is legally permitted to undertake being the identification of priority off right-of-way trees that are dead, dying, diseased, leaning, and significantly encroaching the corridor. The Companies are very active in pursuing this option, where available.

Reliability Results

The table below, taken from the 4th Quarter 2019 Joint Reliability Report, shows that three of twelve reliability indices in 2019 were better than the Commission's twelve-month standards with one of the indices being better than benchmark.

4Q 2019 (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	1.54	1.26	1.52	1.72	1.12	1.34	1.38	1.05	1.26	1.19
CAIDI	117	140	164	117	141	147	101	121	129	170	204	165[4]
SAIDI	135	194	253	148	213	252	113	162	178	179	257	196
MAIFI[5]			0.804			0.726			0.140			
Customers Served[6]	566,218			579,647			164,199			717,331		
Number of Sustained Interruptions	12,887			13,772			3,380			13,043		
Customers Affected	874,452			995,121			226,745			851,338		
Customer Minutes	143,334,631			146,082,071			29,151,703			140,292,539		
Number of Customer Momentary Interruptions	456,276			423,658			23,028					

[4] West Penn's CAIDI achieved benchmark performance or better.

[5] MAIFI values are not available for West Penn.

[6] 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.*[7]

Major Events

FirstEnergy Company	Customers Affected	Time and Duration of the Event		Cause of the Event	Commission Approval Status
Penelec	106,374	Duration	108 hours, 21 minutes	High Winds	Approved May 9, 2019
		Start Date/Time	February 24, 2019 0338		
		End Date/Time	February 28, 2019 1559		
Penn Power	36,177	Duration	108 hours, 3 minutes	High Winds	Approved May 9, 2019
		Start Date/Time	February 24, 2019 0042		
		End Date/Time	February 28, 2019 1245		
West Penn	177,394	Duration	128 hours, 31 minutes	High Winds	Approved May 24, 2019
		Start Date/Time	February 24, 2019 0359		
		End Date/Time	March 1, 2019 2230		
Penelec	64,234	Duration	58 hours, 31 minutes	Winter Storm	Approved December 23, 2019
		Start Date/Time	October 31, 2019 1236		
		End Date/Time	November 2, 2019 2307		

[7] 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	**2017**	**2018[8]**	**2019**
Met-Ed	SAIFI	1.47	1.16	1.54
	CAIDI	147	127	164
	SAIDI	217	147	253
	MAIFI	1.29	1.71	0.80
	Customer Minutes	121,882,261	83,342,649	143,334,631
	Customers Affected	827,461	656,391	874,452
	Minutes of Interruption	3,469,122	2,868,213	4,506,031
	Customers Served[9]	561,039	565,359	566,218
Penelec	SAIFI	1.73	1.71	1.72
	CAIDI	138	114	147
	SAIDI	239	195	252
	MAIFI	3.76	2.82	.73
	Customer Minutes	138,523,052	113,145,011	146,082,071
	Customers Affected	1,001,129	993,665	995,121
	Minutes of Interruption	3,540,860	3,461,761	4,292,985
	Customers Served[10]	580,349	580,198	579,647
Penn Power	SAIFI	1.06	1.10	1.38
	CAIDI	150	138	129
	SAIDI	160	152	178
	MAIFI	0.89	0.22	0.14
	Customer Minutes	26,001,026	24,939,341	29,151,703
	Customers Affected	173,036	180,247	226,745
	Minutes of Interruption	1,196,734	1,009,636	1,157,569
	Customers Served[11]	162,868	163,633	164,199

[8] The Met-Ed major event exclusion filed on September 5, 2018 and the West Penn major event exclusion filed on October 8, 2018 were both approved on November 14, 2019. The 2018 reliability statistics have been updated to reflect these exclusions.
[9] Represents the average number of customers served during the reporting period.
[10] Represents the average number of customers served during the reporting period.
[11] Represents the average number of customers served during the reporting period.

Historic 12-Month Rolling Reliability Indices				
	Index	**2017**	**2018[8]**	**2019**
West Penn	SAIFI	1.29	1.12	1.19
	CAIDI	166	162	165
	SAIDI	214	182	196
	Customer Minutes	152,701,813	130,058,930	140,292,539
	Customers Affected	919,673	802,100	851,338
	Minutes of Interruption	4,589,540	4,400,773	4,667,135
	Customers Served[12]	714,821	716,367	717,331

The tables below show that three of twelve reliability indices in 2019 were better than the Commission's three-year standards.

Three-Year Rolling Year-End 2019	**Met-Ed**		**Penelec**	
	Three-Year Standard	Three-Year Actual	Three-Year Standard	Three-Year Actual
SAIFI	1.27	1.39	1.39	1.72
CAIDI	129	146	129	133
SAIDI	163	206	179	229

Three-Year Rolling Year-End 2019	**Penn Power**		**West Penn**	
	Three-Year Standard	Three-Year Actual	Three-Year Standard	Three-Year Actual
SAIFI	1.23	1.18	1.16	1.20
CAIDI	111	139	187	164
SAIDI	136	163	217	197

[12] 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 2019 12-Month Rolling	**Met-Ed**			
Cause	**Customer Minutes**	**Number of Sustained Interruptions**	**Customers Affected**	**% Based on Customer Minutes**
Trees off ROW - tree	65,742,622	2,610	249,931	45.87%
Equipment failure	26,519,737	2,666	224,316	18.50%
Vehicle	11,430,891	338	54,622	7.97%
Unknown	6,324,950	1,387	53,772	4.41%
Line failure	6,839,920	952	43,388	4.77%
Trees off ROW - limb	6,781,523	661	37,114	4.73%
Forced outage	4,065,355	463	65,896	2.84%
Lightning	3,409,037	401	24,185	2.38%
Trees on ROW	3,201,987	363	11,293	2.23%
Animal	1,969,281	1,472	22,408	1.37%
Wind	1,275,128	113	6,490	0.89%
Human error - company	981,761	81	35,698	0.68%
Overload	851,898	70	10,270	0.59%
Object contact with line	807,797	70	6,426	0.56%
Trees - sec/service	747,370	567	1,506	0.52%
Bird	684,093	428	5,196	0.48%
Ice	588,481	35	1,609	0.41%
Human error - non-company	504,634	87	5,762	0.35%
UG dig-up	348,215	39	2,547	0.24%
Customer equipment	171,056	40	11,389	0.12%
Other electric utility	32,420	7	169	0.02%
Previous lightning	24,533	20	64	0.02%
Contamination	14,828	3	134	0.01%
Other utility - non-electric	12,774	4	215	0.01%
Fire	3,707	4	46	0.00%
Vandalism	633	6	6	0.00%
Total	**143,334,631**	**12,887**	**874,452**	**100%**

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, 2019, and associated actions designed to address these outage causes.

To address outages caused by trees, Met-Ed performs cycle-based tree trimming and enhanced tree trimming in select locations. Enhanced tree trimming removes healthy limbs overhanging primary conductors. Met-Ed's options under the law are strictly limited when it comes to all forms of off right-of-way tree management. However, Met-Ed is legally permitted to identify priority off-right-of-way ("ROW") trees that are dead, dying, diseased, leaning, and significantly encroaching the corridor and remove those trees when customer consent is obtained or easement rights permit. Met-Ed is very active in pursuing this option, where available. Trees identified as a potential cause of a future outage are removed to prevent an interruption of electrical service to Met-Ed's customers. Met-Ed increased its focus on off-ROW tree removals in the third and fourth quarter of 2019. Met-Ed continues its program to mitigate trees subject to damage from the Emerald Ash Borer.

To reduce the likelihood of equipment-caused outages, Met-Ed 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.

Met-Ed reviews vehicle caused outages to determine if it is a repeat location warranting remedial action, which could include modifying attachment height for communications, installing a taller pole, relocating the pole or installing sectionalizing equipment to minimize customer impact.

Outages by Cause – Penelec

Outage by Cause				
4th Quarter 2019 12-Month Rolling	**Penelec**			
Cause	**Customer Minutes**	**Number of Sustained Interruptions**	**Customers Affected**	**% Based on Customer Minutes**
Trees off ROW - tree	51,010,144	1,954	231,638	34.92%
Equipment failure	25,382,977	2,816	254,638	17.38%
Line failure	22,958,925	1,860	172,480	15.72%
Unknown	10,029,375	1,631	63,614	6.87%
Lightning	8,578,606	717	66,604	5.87%
Vehicle	6,282,161	324	34,588	4.30%
Forced outage	5,859,407	1,049	63,052	4.01%
Wind	3,640,062	36	6,646	2.49%
Animal	3,416,929	1,327	27,198	2.34%
Trees off ROW - limb	2,422,040	330	20,063	1.66%
Human error - non-company	1,445,043	93	9,189	0.99%
Object contact with line	1,128,103	35	5,525	0.77%
Bird	1,059,277	345	11,733	0.73%
Trees - sec/service	984,026	812	3,082	0.67%
Other electric utility	752,257	104	2,513	0.51%
Trees on ROW	425,381	106	3,654	0.29%
Human error - company	241,366	56	13,493	0.17%
Overload	238,673	32	1,993	0.16%
Customer equipment	111,696	20	2,512	0.08%
UG dig-up	71,764	52	322	0.05%
Previous lightning	12,646	35	74	0.01%
Vandalism	12,438	12	256	0.01%
Other utility - non-electric	5,592	3	30	0.00%
Fire	4,650	9	54	0.00%
Ice	3,875	7	27	0.00%
Switching Error	3,125	1	125	0.00%
Contamination	1,533	6	18	0.00%
Total	**146,082,071**	**13,772**	**995,121**	**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, 2019 and the associated actions designed to address these outage causes.

To reduce outages caused by trees, Penelec performs cycle-based tree trimming which 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-ROW priority trees. Penelec's options under the law are strictly limited when it comes to all forms of off right-of-way tree management. However, Penelec is legally permitted to identify priority off-ROW trees that are dead, dying, diseased, leaning, and significantly encroaching the corridor and remove those trees when customer consent is obtained or easement rights permit. Penelec is very active in pursuing this option, where available. Trees identified as a potential cause of a future outage are removed to prevent an interruption of electrical service to Penelec's customers. Penelec increased its focus on off-ROW tree removals in the third and fourth quarter of 2019. Penelec continues its program to mitigate trees subject to damage from the Emerald Ash Borer.

To reduce the likelihood of outages caused by equipment and line failure, 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.

Penelec reviews vehicle caused outages to determine if it is a repeat location warranting remedial action, which could include modifying attachment height for communications, installing a taller pole, relocating the pole or installing sectionalizing equipment to minimize customer impact.

Outages by Cause – Penn Power

Outage by Cause				
4th Quarter 2019 12-Month Rolling	**Penn Power**			
Cause	**Customer Minutes**	**Number of Sustained Interruptions**	**Customers Affected**	**% Based on Customer Minutes**
Trees off ROW - tree	14,685,584	919	85,047	50.38%
Equipment failure	3,386,523	369	40,412	11.62%
Vehicle	2,052,413	99	16,922	7.04%
Animal	1,913,773	413	19,484	6.56%
Line failure	1,669,941	300	11,047	5.73%
Lightning	1,257,674	278	6,958	4.31%
Unknown	1,073,824	147	21,627	3.68%
Trees off ROW - limb	972,660	136	5,187	3.34%
Forced outage	619,256	80	6,582	2.12%
Bird	483,477	332	4,873	1.66%
Human error - non-company	448,302	21	3,824	1.54%
Trees - sec/service	195,566	156	586	0.67%
Trees on ROW	123,061	9	362	0.42%
Overload	77,413	23	1,847	0.27%
Wind	50,035	3	109	0.17%
Previous lightning	40,309	45	288	0.14%
Human error - company	34,425	11	227	0.12%
UG dig-up	28,191	16	282	0.10%
Object contact with line	27,708	6	1,047	0.10%
Ice	7,936	1	16	0.03%
Customer equipment	3,026	12	12	0.01%
Vandalism	330	2	2	0.00%
Fire	276	2	4	0.00%
Total	**29,151,703**	**3,380**	**226,745**	**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, 2019 and the associated actions designed to address these outage causes.

To address outages caused by trees, Penn Power performs tree trimming which 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-ROW priority trees. Penn Power's options under the law are strictly limited when it comes to all forms of off right-of-way tree management. However, Penn Power is legally permitted to identify priority off-ROW trees that are dead, dying, diseased, leaning, and significantly encroaching the corridor and remove those trees when customer consent is obtained or easement rights permit. Penn Power is very active in pursuing this option, where available. Trees identified as a potential cause of a future outage are removed to prevent an interruption of electrical service to Penn Power's customers. In addition, Penn Power performs enhanced trimming to circuits that experience high customer interruption minutes due to vegetation, which removes limbs overhanging primary conductors.

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

Penn Power reviews vehicle caused outages to determine if it is a repeat location warranting remedial action, which could include modifying attachment height for communications, installing a taller pole, relocating the pole or installing sectionalizing equipment to minimize customer impact.

Outages by Cause – West Penn

Outage by Cause				
4th Quarter 2019 12-Month Rolling	**West Penn**			
Cause	**Customer Minutes**	**Number of Sustained Interruptions**	**Customers Affected**	**% Based on Customer Minutes**
Trees off ROW - tree	60,036,547	3,343	252,993	42.79%
Equipment failure	20,490,398	2,231	139,896	14.61%
Line failure	17,304,671	1,403	92,942	12.33%
Vehicle	9,251,688	372	78,552	6.59%
Unknown	8,800,166	1,824	79,057	6.27%
Trees on ROW	4,430,614	535	21,169	3.16%
Trees off ROW - limb	4,418,019	234	32,451	3.15%
Forced outage	3,842,805	635	63,131	2.74%
Wind	2,274,642	81	7,870	1.62%
Animal	1,976,577	1,239	22,158	1.41%
Lightning	1,537,810	178	11,651	1.10%
Human error - non-company	1,500,349	73	11,523	1.07%
Ice	1,150,377	21	2,139	0.82%
Other electric utility	795,905	15	1,163	0.57%
Bird	736,394	331	7,849	0.52%
Human error - company	578,984	53	19,423	0.41%
Trees - sec/service	263,628	366	931	0.19%
Customer equipment	247,982	10	2,159	0.18%
Vandalism	215,824	5	558	0.15%
Overload	146,090	19	2,273	0.10%
Fire	122,486	7	366	0.09%
Object contact with line	84,004	22	406	0.06%
UG dig-up	75,378	38	508	0.05%
Other utility - non-electric	8,840	5	84	0.01%
Switching error	2,225	2	85	0.00%
Previous Lightning	136	1	1	0.00%
Total	**140,292,539**	**13,043**	**851,338**	**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, 2019, and the associated actions designed to address these outage causes.

To reduce outages caused by trees, West Penn performs cycle-based tree trimming which 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-ROW priority trees. West Penn 's options under the law are strictly limited when it comes to all forms of off right-of-way tree management. However, West Penn is legally permitted to identify priority off-ROW trees that are dead, dying, diseased, leaning, and significantly encroaching the corridor and remove those trees when customer consent is obtained or easement rights permit. West Penn is very active in pursuing this option, where available. Trees identified as a potential cause of a future outage are removed to prevent an interruption of electrical service to West Penn's customers. West Penn increased its focus on off-ROW tree removals in the third and fourth quarter of 2019. West Penn continues its program to mitigate trees subject to damage from the Emerald Ash Borer.

To reduce the likelihood of equipment and line failures, 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.

West Penn reviews vehicle caused outages to determine if it is a repeat location warranting remedial action, which could include modifying attachment height for communications, installing a taller pole, relocating the pole or installing sectionalizing equipment to minimize customer impact.

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 2019		Met-Ed		Penelec		Penn Power		West Penn	
		Planned	Completed	Planned	Completed	Planned	Completed	Planned	Completed
Forestry	Transmission (Miles)	282.22	282.22	418.26[13]	384.88	171.19[14]	171.22	208.34	208.34
	Distribution (Miles)	2,845	2,845	3,953	3,953	1,141	1,142	4,480	4,480
Transmission	Aerial Patrols	2	2	2	2	2	2	2	2
	Groundline	890	1,314	981	2,904	122	151	1,547	2,109
Substation	Substation Inspections Class A	422	422	788	788	148	148	714	714
	Substation Inspections Class B	422	422	788	788	148	148	714	714
	Substation Inspections Class C	1,688	1,688	3,152	3,152	592	592	2,856	2,856
	Transformers	395	395	696	696	125	125	688	688
	Breakers	87	87	437	437	8	8	379	379
	Relay Schemes	114	114	146	146	18	18	185	185
Distribution	Capacitors	4,761	4,761	8,702	8,702	978	978	1,305	1,305
	Poles	28,000	37,466	41,584	41,755	10,657	11,091	45,074	45,138
	Reclosers	1,115[15]	1,108	2,581	2,585	863	864	3,911	3,911
	Radio-Controlled Switches	760	785	2,687	2,687	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.

[13] Transmission miles trimmed increased by 0.11 miles due to a mapping change.
[14] Transmission miles trimmed increased by 0.03 miles due to a mapping change.
[15] Seven reclosers were taken out of service.

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 - 2019 ($)					
Transmission					
Category		**2019 Actuals**	**2019 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	0	0	100%	
561	Load Dispatching	(31,630)	(150,250)	-79%	1
562	Station Expenses	12,040	0	100%	2
563	Overhead Lines Expenses	43,973	56,800	-23%	3
565	Transmission of Electricity by Others	8,852,729	8,436,000	5%	
566	Miscellaneous Transmission Expenses	(63,874)	(18,298)	249%	4
567	Rents	64,251	0	100%	5
568	Maintenance Supervision and Engineering	4,583	0	1091093%	6
569	Maintenance of Structures	208,762	29,209	615%	7
570	Maintenance of Station Equipment	791,917	4,500	17498%	8
571	Maintenance of Overhead Lines	114,390	0	100%	9
572	Transmission-Maintenance of Underground Lines	3,307	0	100%	10
573	Maintenance of Miscellaneous Transmission Plant	10,177	(4,790)	-312%	11
575	Market Administration, Monitoring & Compliance Services	(4)	0	100%	
Transmission Total		**10,010,621**	**8,353,172**		
Distribution					
Category		**2019 Actuals**	**2019 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	390,427	228,234	71%	12
581	Load Dispatching	218,026	231,996	-6%	
582	Station Expenses	597,484	912,328	-35%	13
583	Overhead Line Expenses	329,230	122,451	169%	14
584	Underground Line Expenses	652	0	100%	15
586	Meter Expenses	659,290	640,356	3%	
587	Customer Installations Expenses	0	0	100%	
588	Miscellaneous Distribution Expenses	7,228,134	6,404,140	13%	16
589	Rents	503,030	523,469	-4%	
590	Maintenance Supervision and Engineering	555,501	426,857	30%	17
591	Maintenance of Structures	6,102	2,790	119%	10
592	Maintenance of Station Equipment	5,428,253	7,292,017	-26%	18
593	Maintenance of Overhead Lines	51,204,245	34,016,659	51%	19
594	Maintenance of Underground Lines	2,247,149	2,229,571	1%	
595	Maintenance of Line Transformer	246,833	1,126,594	-78%	20
596	Maintenance of Street Lighting and Signal Systems	669,558	400,145	67%	10
597	Maintenance of Meters	1,603,159	2,348,044	-32%	18
598	Maintenance of Miscellaneous Distribution Plant	1,028,874	2,381,957	-57%	21
Distribution Total		**72,915,948**	**59,287,607**		
Met-Ed Total		**82,926,569**	**67,640,780**		

Variance Explanations (Variances 10% or greater)	
1	Under budget due to the number of load studies being less than planned.
2	Over budget due to substation drawing reviews being greater than planned.
3	Under budget due to annual right-of-way fees being less than planned.
4	Over budget due to PJM Ancillary Service being greater than planned.
5	Over budget due to higher than planned associated company lease / rentals for Wadsworth System Control and Data Center.
6	Over budget due to environmental labor and expenses being greater than planned.
7	Over budget due to labor and computer software/hardware maintenance expenses being greater than planned.
8	Over budget due to allocation of budget dollars between transmission and distribution expenses.
9	Over budget due to utilization of outside contractors for corrective maintenance work being greater than planned.
10	Over budget due to labor costs being greater than planned.
11	Over budget due to tool purchases being greater than planned.
12	Over budget due to use of contract labor and communication expenses being greater than planned.
13	Under budget due to fleet and materials spend being less than planned.
14	Over budget due to labor and equipment costs being greater than planned.
15	Current budgeting practices do not budget directly to FERC accounts. The Companies budget to different cost collectors, which settle to FERC accounts. Actual settlements to these FERC accounts are relatively immaterial amounts.
16	Over budget due to contractor and material costs being greater than planned.
17	Over budget due to contractor costs being greater than planned.
18	Under budget due to labor expenses being less than planned.
19	Over budget due to contract and internal labor maintenance costs being greater than planned.
20	Under budget due to contractor costs being less than planned.
21	Under budget due to contractor and materials costs being less than planned.

Penelec T&D O&M - 2019 ($)					
Transmission					
	Category	**2019 Actuals**	**2019 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	(58)	0	100%	
561	Load Dispatching	42,391	(224,895)	-119%	1
562	Station Expenses	225,678	157,082	44%	2
563	Overhead Lines Expenses	495,422	531,051	-7%	
565	Transmission of Electricity by Others	31,995,635	27,622,716	16%	3
566	Miscellaneous Transmission Expenses	(28,546)	0	100%	4
567	Rents	305,677	275,000	11%	5
568	Maintenance Supervision and Engineering	136,719	0	48827964%	2
569	Maintenance of Structures	297,520	31,485	845%	6
570	Maintenance of Station Equipment	399,109	288,560	38%	2
571	Maintenance of Overhead Lines	193,746	0	100%	2
572	Transmission-Maintenance of Underground Lines	639	0	100%	
573	Maintenance of Miscellaneous Transmission Plant	(2,400)	0	100%	4
575	Market Administration, Monitoring & Compliance Services	0	0	100%	
Transmission Total		**34,061,533**	**28,681,000**		
Distribution					
	Category	**2019 Actuals**	**2019 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	421,498	325,625	29%	7
581	Load Dispatching	420,098	311,134	35%	2
582	Station Expenses	541,314	0	100%	8
583	Overhead Line Expenses	119,107	91,827	30%	2
584	Underground Line Expenses	1,031,587	970,299	6%	
586	Meter Expenses	723,757	778,690	-7%	
587	Customer Installations Expenses	0	0	100%	
588	Miscellaneous Distribution Expenses	9,486,833	10,818,822	-12%	9
589	Rents	2,571,603	1,227,405	110%	7
590	Maintenance Supervision and Engineering	535,579	457,831	17%	7
591	Maintenance of Structures	0	0	100%	
592	Maintenance of Station Equipment	6,434,771	5,911,064	9%	
593	Maintenance of Overhead Lines	38,227,651	35,394,672	8%	
594	Maintenance of Underground Lines	1,533,165	146,475	947%	10
595	Maintenance of Line Transformer	215,659	241,662	-11%	11
596	Maintenance of Street Lighting and Signal Systems	1,123,862	2,912,376	-61%	12
597	Maintenance of Meters	2,700,913	4,200,560	-36%	12
598	Maintenance of Miscellaneous Distribution Plant	1,213,785	32,545	3630%	6
Distribution Total		**67,301,182**	**63,820,986**		
Penelec Total		**101,362,715**	**92,501,987**		

Variance Explanations (Variances 10% or greater)	
1	Over budget due to higher PJM reimbursable services settling to load dispatching.
2	Over budget due to higher labor requirements being greater than planned.
3	Over budget due to higher Network Integration Transmission Services (NITS) charges which is a result of more customers shopping than anticipated.
4	Under budget due to materials required for this work being less than planned.
5	Over budget due to higher than planned leases/rentals.
6	Over budget due to network costs and labor requirements 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 complete this work which was not budgeted to this FERC account.
9	Under budget due to lower than planned leases/rentals.
10	Over budget due to Outside Services/Contractors and higher labor requirements being greater than planned.
11	Under budget due to labor costs being less than planned.
12	Under budget due to fleet costs charged to O&M and labor costs being less than planned.

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

Penn Power T&D O&M - 2019 ($)					
Transmission					
	Category	**2019 Actuals**	**2019 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	1,716	1,325	30%	1
561	Load Dispatching	(2,061)	125,907	-102%	2
562	Station Expenses	520	(347)	-250%	1
563	Overhead Lines Expenses	0	(603)	-100%	1
565	Transmission of Electricity by Others	4,309,059	4,148,892	4%	
566	Miscellaneous Transmission Expenses	4,036	4,216	-4%	
567	Rents	0	0	100%	
568	Maintenance Supervision and Engineering	13,911	13,054	7%	
569	Maintenance of Structures	28,219	9,575	195%	3
570	Maintenance of Station Equipment	9,560	3,047	214%	4
571	Maintenance of Overhead Lines	29,794	89,459	-67%	5
572	Transmission-Maintenance of Underground Lines	0	0	100%	
573	Maintenance of Miscellaneous Transmission Plant	(854)	0	100%	1
575	Market Administration, Monitoring & Compliance Services	0	0	100%	
Transmission Total		**4,393,901**	**4,394,526**		
Distribution					
	Category	**2019 Actuals**	**2019 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	0	0	100%	
581	Load Dispatching	0	0	100%	
582	Station Expenses	69,920	0	100%	6
583	Overhead Line Expenses	123,642	0	100%	7
584	Underground Line Expenses	313,120	526,031	-40%	8
586	Meter Expenses	68,082	82,500	-17%	5
587	Customer Installations Expenses	0	0	100%	
588	Miscellaneous Distribution Expenses	617,263	782,612	-21%	9
589	Rents	454,761	330,437	38%	4
590	Maintenance Supervision and Engineering	147,559	114,777	29%	7
591	Maintenance of Structures	0	0	100%	
592	Maintenance of Station Equipment	976,923	308,743	216%	4
593	Maintenance of Overhead Lines	14,268,436	13,683,588	4%	
594	Maintenance of Underground Lines	255,373	49,513	416%	4
595	Maintenance of Line Transformer	35,586	50,939	-30%	4
596	Maintenance of Street Lighting and Signal Systems	65,101	20,957	211%	4
597	Maintenance of Meters	411,612	520,239	-21%	5
598	Maintenance of Miscellaneous Distribution Plant	298,004	56,497	427%	10
Distribution Total		**18,105,383**	**16,526,833**		
Penn Power Total		**22,499,283**	**20,921,358**		

Variance Explanations (Variances 10% or greater)	
1	Current budgeting practices do not budget directly to FERC accounts. The Companies budget to different cost collectors, which settle to FERC accounts. Actual settlements to these FERC accounts are relatively immaterial amounts.
2	Under budget due to Transmission Owner scheduling, system controls and dispatching service charges being lower than planned.
3	Over budget due to labor, utility and software costs being greater than planned.
4	Over budget due to labor costs being greater than planned.
5	Under budget due to labor being less than planned.
6	Over budget due to telecom expenses being greater than planned.
7	Over budget due to contractor expenses being greater than planned.
8	Under budget due to contractor expense being less than planned.
9	Under budget due to other than labor costs being less than planned.
10	Over budget due to labor and utility expenses being greater than planned.

West Penn Power T&D O&M - 2019 ($)					
Transmission					
	Category	**2019 Actuals**	**2019 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	51,758	47,984	8%	
561	Load Dispatching	979,064	987,631	-1%	
562	Station Expenses	617,323	119,757	415%	1
563	Overhead Lines Expenses	94,568	22,127	327%	2
565	Transmission of Electricity by Others	56,941,604	61,139,736	-7%	
566	Miscellaneous Transmission Expenses	771,624	388,389	99%	3
567	Rents	23,960	23,960	0%	
568	Maintenance Supervision and Engineering	835,748	617,028	35%	4
569	Maintenance of Structures	55,771	34,899	60%	5
570	Maintenance of Station Equipment	3,310,129	1,976,768	67%	6
571	Maintenance of Overhead Lines	9,018,901	8,948,508	1%	
572	Transmission-Maintenance of Underground Lines	6,824	0	100%	7
573	Maintenance of Miscellaneous Transmission Plant	96,355	0	100%	8
575	Market Administration, Monitoring & Compliance Services	52	0	100%	7
Transmission Total		**72,803,680**	**74,306,787**		
Distribution					
	Category	**2019 Actuals**	**2019 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	167,802	40,721	312%	9
581	Load Dispatching	1,807,721	2,032,520	-11%	10
582	Station Expenses	674,220	1,063,203	-37%	11
583	Overhead Line Expenses	1,057,294	1,001,275	6%	
584	Underground Line Expenses	1,462,176	1,300,000	12%	12
586	Meter Expenses	1,575,976	1,699,416	-7%	
587	Customer Installations Expenses	0	0	100%	
588	Miscellaneous Distribution Expenses	16,120,092	15,053,815	7%	
589	Rents	0	0	100%	
590	Maintenance Supervision and Engineering	787,635	775,543	2%	
591	Maintenance of Structures	0	0	100%	
592	Maintenance of Station Equipment	7,883,906	8,738,340	-10%	13
593	Maintenance of Overhead Lines	49,784,121	35,705,974	39%	14
594	Maintenance of Underground Lines	1,104,547	1,105,759	0%	
595	Maintenance of Line Transformer	133,062	303,198	-56%	15
596	Maintenance of Street Lighting and Signal Systems	847,372	663,079	28%	16
597	Maintenance of Meters	1,301,465	1,336,071	-3%	
598	Maintenance of Miscellaneous Distribution Plant	345,493	174,905	98%	17
Distribution Total		**85,052,881**	**70,993,818**		
West Penn Power Total		**157,856,560**	**145,300,605**		

Variance Explanations (Variances 10% or greater)	
1	Over budget due to internal labor, contractor, material, employee expenses, and transportation costs being greater than planned.
2	Over budget due to internal labor being greater than planned.
3	Over budget due to internal labor, benefits, employee expenses, contractors, and others cost being greater than planned.
4	Over budget due to internal labor, contractor, and other costs being greater than planned.
5	Over budget due to Information Technology (IT) labor and computer hardware and software costs being greater than planned.
6	Over budget due to internal labor, contractor, material, and transportation costs being greater than planned.
7	Current budgeting practices do not budget directly to FERC accounts. The Companies budget to different cost collectors, which settle to FERC accounts. Actual settlements to these FERC accounts are relatively immaterial amounts.
8	Over budget due to internal labor, contractor, material, and computer software maintenance costs being greater than planned.
9	Over budget due to benefits, contractor, material, and employee expenses being greater than planned.
10	Under budget due to internal labor, employee expense, contractor, and material costs being less than planned.
11	Under budget due to internal labor and transportation costs being less than planned.
12	Over budget due to contractor costs for underground locating work being greater than planned.
13	Under budget due to contractor and material costs being less than planned.
14	Over budget due to internal labor and contractor costs being greater than planned.
15	Under budget due to internal labor costs being less than planned.
16	Over budget due to internal labor and transportation costs being greater than planned.
17	Over budget due to internal labor, contractor and material costs being greater 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 – 2019 ($)				
Category	**2019 Actuals**	**2019 Budget**	**Variance %**	**Notes**
Capacity	8,342,511	18,816,849	-56%	1
Condition	21,687,834	20,865,773	4%	
Facilities	3,690,171	401,995	818%	2
Forced	55,214,159	47,374,775	17%	3
Meter Related	1,691,744	3,184,048	-47%	4
New Business	19,852,337	17,430,231	14%	5
Other	28,649,937	18,497,289	55%	6
Reliability	22,528,499	35,689,750	-37%	7
Street Light	674,816	1,355,698	-50%	8
Tools & Equip	3,878,070	1,367,255	184%	9
Vegetation Mgt.	23,960,161	11,676,319	105%	10
Penn Power Total	**190,170,240**	**176,659,981**		

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

Penelec T&D Capital – 2019 ($)				
Category	**2019 Actuals**	**2019 Budget**	**Variance %**	**Notes**
Capacity	619,074	9,232	6606%	11
Condition	12,754,019	8,025,004	59%	12
Facilities	2,527,575	612,343	313%	12
Forced	48,709,063	41,673,023	17%	13
Meter Related	1,862,795	1,199,288	55%	14
New Business	13,527,987	12,077,113	12%	15
Other	22,445,201	28,512,226	-21%	16
Reliability	22,930,943	24,395,291	-6%	
Street Light	2,532,293	4,152,570	-39%	17
Tools & Equip	3,924,706	4,733,828	-17%	18
Vegetation Mgt.	32,956,500	21,136,461	56%	19
Penn Power Total	**164,790,154**	**146,526,379**		

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

Penn Power T&D Capital – 2019 ($)				
Category	**2019 Actuals**	**2019 Budget**	**Variance %**	**Notes**
Capacity	1,050,249	233,499	350%	20
Condition	359,240	5,028,802	-93%	21
Facilities	20,939	23,425	-11%	22
Forced	11,946,985	6,794,376	76%	23
Meter Related	617,309	656,288	-6%	
New Business	5,998,987	5,984,260	0%	
Other	5,423,115	(3,181,698)	-270%	24
Reliability	22,152,171	29,697,638	-25%	25
Street Light	348,452	570,580	-39%	26
Tools & Equip	327,908	161,646	103%	27
Vegetation Mgt.	2,587,516	2,971,030	-13%	28
Penn Power Total	**50,832,869**	**48,939,848**		

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

West Penn Power T&D Capital – 2019 ($)				
Category	**2019 Actuals**	**2019 Budget**	**Variance %**	**Notes**
Capacity	13,164,231	(2,769,181)	-575%	29
Condition	22,233,111	21,879,413	2%	
Facilities	2,942,182	352,465	735%	30
Forced	54,795,208	48,992,024	12%	31
Meter Related	1,525,147	1,510,550	1%	
New Business	23,745,117	28,682,457	-17%	32
Other	35,816,907	44,082,329	-19%	33
Reliability	53,482,154	59,905,144	-11%	34
Street Light	1,805,016	1,839,136	-2%	
Tools & Equip	3,110,121	2,981,970	4%	
Vegetation Mgt.	35,077,565	26,926,912	30%	35
Penn Power Total	**247,696,758**	**234,383,219**		

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

Variance Explanations (Variances 10% or greater)	
1	Under budget due to delays in construction and work scope changes for new substations.
2	Over budget due to contractor and material spend for facility repairs/upgrades at various locations being greater than planned.
3	Over budget due to contractor spend for Pole Inspections/Replacements and LTIIP projects being greater than planned.
4	Under budget due to meter exchanges being less than planned.
5	Over budget due to contractor and material spend for new commercial service being greater than planned.
6	Over budget due to support costs being greater than planned.
7	Under budget due to capital spend delays in LTIIP projects.
8	Under budget due to contractor and material costs for LED streetlight replacements being less than planned.
9	Over budget due to timing of computer hardware purchases and vehicle / equipment purchases.
10	Over budget due to increased planned vegetation spend
11	Over budget due to capacity system improvements and adjustments to associated labor costs being greater than planned.
12	Over budget due to timing differences in several construction projects.
13	Over budget due to higher capitalized storm expenditures and timing differences in several construction projects.
14	Over budget due to meter and smart meter exchanges being greater than planned.
15	Over budget due to new commercial business being greater than planned.
16	Under budget due to lower support costs as well as emergent projects being less than planned.
17	Under budget due to LED new & conversion project and unscheduled distribution streetlighting repair being less than planned.
18	Under budget due to delay of PA state radio project.
19	Over budget due to vegetation management planned and unplanned distribution, and emerald ash borer project being greater than planned.
20	Over budget due to LTIIP related expenses being greater than planned.
21	Under budget due to unscheduled equipment repairs and replacements being less than planned.
22	Under budget due to facility repairs being less than planned.
23	Over budget due to storm related labor and contractor expenditures and LTIIP contractors being greater than planned.
24	Over budget due to damage claims and joint use costs being greater than planned.
25	Under budget due to LTIIP spending being less than planned.
26	Under budget due to lower unplanned streetlight repairs.
27	Over budget due to higher vehicle and tool purchases.
28	Under budget due to lower than planned vegetation trimming.
29	Over budget due to Transmission Emergent Contingency, Payroll Overhead Adjustment, Springdale Substation install 138kV breaker/relocate terminals, and Yukon Substation replacement 500-138kV Transformer being greater than planned.

Variance Explanations (Variances 10% or greater)	
30	Over budget due to more facilities repair work being done at numerous locations and Connellsville West Southern Distribution Center Reconfigure.
31	Over budget due to storm costs being greater than planned.
32	Under budget due to lower commercial new business.
33	Under budget due to Cranberry-Wylie ridge 500kV line repairs, overhead re-allocation between FEU/FET, and Joint Use costs being less than planned.
34	Under budget due to LTIIP, Niles & Farmer Valley-Potter Optical Ground Wire Fiber Expansion, Ronco Camera Installation and Karns City Substation - Install 138kV tie being less than planned.
35	Over budget due to planned distribution vegetation management and Vegetation Prescriptive Off-Cycle spend 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 – 2020 Goals / Objectives

T&D Inspection & Maintenance Programs - 2020				
Program/Project	**Met-Ed**	**Penelec**	**Penn Power**	**West Penn**
Forestry				
Transmission (Miles)	272.70	517.98	56.05	195.15
Distribution (Miles)	2,878	3,746	1,126	4,400
Transmission				
Aerial Patrols	2	2	2	2
Groundline (Poles)	1,895	1,511	79	772
Substation				
Substation Inspections Class A	418	784	148	950
Substation Inspections Class B	418	784	148	950
Substation Inspections Class C	1,672	3,137	592	3,800
Transformers	143	401	9	381
Breakers	74	338	12	369
Relay Schemes	58	180	32	100
Distribution				
Capacitors	4,758	8,683	978	1,315
Poles	36,000	41,584	11,027	38,373
Reclosers	1,233	2,591	930	3,947
Radio-Controlled Switches (2 / year)	1,010	2,652	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.

2020 T&D O&M Budget[16]

Met-Ed T&D O&M - Annual 2020 ($)		
Transmission		
Category		**Annual Budget**
560	Operation Supervision & Engineering	0
561	Load Dispatching	(149,211)
563	Overhead Line Expenses	46,000
565	Transmission of Electricity by Others	8,880,000
566	Miscellaneous Transmission Expenses	(32,629)
567	Rents	0
568	Maintenance Supervision and Engineering	(0)
569	Maintenance of Structures	19,095
570	Maintenance of Station Equipment	109,948
571	Maintenance of Overhead Lines	0
573	Maintenance of Miscellaneous Transmission Plant	(3,894)
575	Market Administration, Monitoring & Compliance Services	0
Transmission Total		**8,869,309**
Distribution		
Category		**Annual Budget**
580	Operation Supervision & Engineering	168,316
581	Load Dispatching	209,424
582	Station Expenses	395,722
583	Overhead Line Expenses	148,000
584	Underground Line Expenses	0
586	Meter Expenses	621,587
588	Miscellaneous Distribution Expenses	4,198,904
589	Rents	469,783
590	Maintenance Supervision and Engineering	459,618
591	Maintenance of Structures	(4,461)
592	Maintenance of Station Equipment	6,453,280
593	Maintenance of Overhead Lines	44,446,914
594	Maintenance of Underground Lines	2,196,709
595	Maintenance of Line Transformers	183,305
596	Maintenance of Street Lighting and Signal Systems	490,782
597	Maintenance of Meters	2,917,943
598	Maintenance of Miscellaneous Distribution Plant	1,952,187
Distribution Total		**65,308,012**
Met-Ed Total		**74,177,320**

[16] Budgets are subject to change.

Penelec T&D O&M - Annual 2020 ($)		
Transmission		
Category		**Annual Budget**
560	Operation Supervision & Engineering	0
561	Load Dispatching	(232,142)
562	Station Expenses	195,446
563	Overhead Line Expenses	195,820
565	Transmission of Electricity by Others	31,200,000
566	Miscellaneous Transmission Expenses	(0)
567	Rents	275,000
568	Maintenance Supervision and Engineering	0
569	Maintenance of Structures	20,583
570	Maintenance of Station Equipment	60,000
571	Maintenance of Overhead Lines	0
573	Maintenance of Miscellaneous Transmission Plant	0
575	Market Administration, Monitoring & Compliance Services	0
Transmission Total		**31,714,707**
Distribution		
Category		**Annual Budget**
580	Operation Supervision & Engineering	279,282
581	Load Dispatching	246,623
583	Overhead Line Expenses	91,827
584	Underground Line Expenses	970,299
586	Meter Expenses	694,595
588	Miscellaneous Distribution Expenses	6,775,939
589	Rents	1,506,486
590	Maintenance Supervision and Engineering	492,950
592	Maintenance of Station Equipment	6,268,188
593	Maintenance of Overhead Lines	42,994,587
594	Maintenance of Underground Lines	(8,479)
595	Maintenance of Line Transformers	160,155
596	Maintenance of Street Lighting and Signal Systems	1,236,957
597	Maintenance of Meters	4,214,354
598	Maintenance of Miscellaneous Distribution Plant	32,948
Distribution Total		**65,956,709**
Penelec Total		**97,671,416**

Penn Power T&D O&M - Annual 2020 ($)		
Transmission		
Category		**Annual Budget**
560	Operation Supervision & Engineering	1,408
561	Load Dispatching	6,278
562	Station Expenses	(346)
563	Overhead Line Expenses	(602)
565	Transmission of Electricity by Others	4,440,000
566	Miscellaneous Transmission Expenses	3,337
568	Maintenance Supervision and Engineering	13,103
569	Maintenance of Structures	5,838
570	Maintenance of Station Equipment	3,047
571	Maintenance of Overhead Lines	94,372
573	Maintenance of Miscellaneous Transmission Plant	0
575	Market Administration, Monitoring & Compliance Services	0
Transmission Total		**4,566,436**
Distribution		
Category		**Annual Budget**
580	Operation Supervision & Engineering	0
582	Station Expenses	0
584	Underground Line Expenses	494,414
586	Meter Expenses	66,187
588	Miscellaneous Distribution Expenses	760,811
589	Rents	250,000
590	Maintenance Supervision and Engineering	123,276
592	Maintenance of Station Equipment	796,177
593	Maintenance of Overhead Lines	15,394,375
594	Maintenance of Underground Lines	49,513
595	Maintenance of Line Transformers	41,570
596	Maintenance of Street Lighting and Signal Systems	20,957
597	Maintenance of Meters	588,624
598	Maintenance of Miscellaneous Distribution Plant	30,330
Distribution Total		**18,616,234**
Penn Power Total		**23,182,670**

West Penn Power T&D O&M - Annual 2020 ($)		
Transmission		
Category		**Annual Budget**
560	Operation Supervision & Engineering	50,927
561	Load Dispatching	1,030,305
562	Station Expenses	198,189
563	Overhead Line Expenses	16,761
565	Transmission of Electricity by Others	52,181,944
566	Miscellaneous Transmission Expenses	772,849
567	Rents	23,960
568	Maintenance Supervision and Engineering	739,655
569	Maintenance of Structures	22,815
570	Maintenance of Station Equipment	1,834,188
571	Maintenance of Overhead Lines	10,777,379
573	Maintenance of Miscellaneous Transmission Plant	144,888
575	Market Administration, Monitoring & Compliance Services	0
Transmission Total		**67,793,859**
Distribution		
Category		**Annual Budget**
580	Operation Supervision & Engineering	(38,358)
581	Load Dispatching	2,198,998
582	Station Expenses	858,331
583	Overhead Line Expenses	1,124,430
584	Underground Line Expenses	1,373,000
586	Meter Expenses	1,660,912
588	Miscellaneous Distribution Expenses	12,393,788
589	Rents	0
590	Maintenance Supervision and Engineering	822,373
591	Maintenance of Structures	0
592	Maintenance of Station Equipment	5,329,928
593	Maintenance of Overhead Lines	48,860,118
594	Maintenance of Underground Lines	951,989
595	Maintenance of Line Transformers	252,445
596	Maintenance of Street Lighting and Signal Systems	671,178
597	Maintenance of Meters	2,005,585
598	Maintenance of Miscellaneous Distribution Plant	131,498
Distribution Total		**78,596,216**
West Penn Power Total		**146,390,075**

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.

2020 T&D Capital Budget[17]

Met-Ed T&D Capital - Annual 2020 ($)	
Category	**Annual Budget**
Capacity	18,843,783
Condition	14,934,949
Facilities	599,219
Forced	35,985,578
Meter Related	2,613,158
New Business	17,856,375
Other	13,717,061
Reliability	38,878,438
Street Light	1,227,753
Tools & Equipment	1,056,666
Vegetation Management	16,611,837
Met-Ed Total	**162,324,819**

Penelec T&D Capital - Annual 2020 ($)	
Category	**Annual Budget**
Capacity	169,478
Condition	9,460,580
Facilities	780,231
Forced	41,183,474
Meter Related	1,073,505
New Business	12,277,430
Other	24,083,471
Reliability	50,406,842
Street Light	3,529,403
Tools & Equipment	4,998,948
Vegetation Management	16,744,604
Penelec Total	**164,707,966**

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

Penn Power T&D Capital - Annual 2020 ($)	
Category	**Annual Budget**
Capacity	896,804
Condition	848,917
Facilities	22,652
Forced	7,386,959
Meter Related	558,967
New Business	6,697,959
Other	3,397,203
Reliability	21,340,388
Street Light	590,450
Tools & Equipment	126,698
Vegetation Management	2,729,687
Penn Power Total	**44,596,684**

West Penn Power T&D Capital - Annual 2020 ($)	
Category	**Annual Budget**
Capacity	71,190,991
Condition	12,034,310
Facilities	534,507
Forced	39,790,997
Meter Related	760,290
New Business	28,322,170
Other	21,462,951
Reliability	54,925,716
Street Light	1,569,338
Tools & Equipment	2,260,973
Vegetation Management	27,386,787
West Penn Power Total	**260,239,031**

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 2019, 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**
Barto	00705-1	*Performance was driven by outages caused by trees off ROW (74%)*		
		Three-phase overhead inspection	Complete	Mar-19
		Targeted forestry inspection	Complete	May-19
		Enhanced tree trimming	Complete	Nov-19
		On cycle tree trimming	To be completed 2020	4%
		Overhead circuit inspection	To be completed 2020	0%
Bern Church	00789-1	*Performance was driven by trees off ROW (92%)*		
		Three-phase overhead inspection	Complete	Mar-19
		Replace mainline pole from inspection	Complete	Jun-19
		Replace mainline pole from inspection	Complete	Jun-19
		Targeted forestry inspection	Complete	Aug-19
		Enhanced Tree Trimming	Complete	Oct-19
Bernville	00786-1	*Performance was driven by trees off ROW (51%) and line and equipment failures (16%)*		
		Three-phase overhead inspection	Complete	Mar-19
		Targeted Mainline Circuit Rehabilitation Engineering Review	Complete	May-19
		Replace crossarm brace from thermovision inspection	Complete	May-19
		Replace line clamp from thermovision inspection	Complete	Jun-19
		Replace mainline crossarm braces from inspection	Complete	Sep-19
		Upgrade mainline recloser	Complete	Sep-19
		Install SCADA recloser	Complete	Aug- 19
		Install SCADA switch #1	Complete	Oct- 19
		Install SCADA switch #2	Complete	Oct- 19
		Replace crossarm brace from thermovision inspection	To be completed 2020	95%
		Replace crossarm brace from thermovision inspection	To be completed 2020	95%
		Targeted mainline circuit rehabilitation #1	To be completed 2020	50%
		Targeted mainline circuit rehabilitation #2	To be completed 2020	95%
		Targeted mainline circuit rehabilitation #3	To be completed 2020	50%

Met-Ed				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work**	**Progress of Remedial Work or Date Completed**
Birdsboro	00756-1	*Performance was driven by trees off ROW (87%)*		
		Overhead mainline circuit inspection	Complete	Mar-19
		Mainline Tie Recloser Upgrade	Complete	Mar-19
		Targeted forestry inspection	Complete	Mar-19
		Replace mainline poles	Complete	May-19
		Targeted tree trimming to improve reliability	Complete	Oct-19
		Replace mainline pole #1	Complete	Nov-19
		Replace mainline pole #2	Complete	Nov-19
		Replace mainline pole #3	Complete	Nov-19
		Replace mainline pole #4	Complete	Nov-19
		Replace mainline pole #5	Complete	Nov-19
		Replace mainline pole #6	Complete	Nov-19
		Install additional mainline switch	Complete	Dec-19
Carsonia	00764-1	*Performance was driven by trees off ROW (47%) and vehicle (33%)*		
		Targeted forestry inspection	Complete	Mar-19
		Targeted forestry inspection	Complete	Jun-19
		Overhead circuit inspection	Complete	Jun-19
		Engineering circuit tie addition review	Complete	Sep-19
		Mainline pole replacement	Complete	Oct-19
		Engineering circuit split review	Complete	Oct-19
		Engineering circuit tie additional review	Complete	Dec-19
Crossroads	00728-4	*Performance was driven by trees off ROW (37%) and vehicle (38%)*		
		Post storm patrol	Complete	Feb-19
		Lockout zone circuit inspection	Complete	Apr-19
		Install SCADA switch	Complete	Nov-19
		On cycle tree trimming	To be completed 2020	0%

Met-Ed				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work**	**Progress of Remedial Work or Date Completed**
Ferndale	00871-3	*Performance was driven by trees off ROW (63%) and equipment failure (16%)*		
		Three-phase overhead inspection	Complete	Feb-19
		On cycle tree trimming	To be completed 2020	0%
Flying Hills	00777-1	*Performance was driven by trees off ROW (76%) and vehicle (15%)*		
		Targeted forestry inspection	Complete	Mar-19
		Replace mainline underground cable in large residential development	Complete	May-19
		On cycle tree trimming	To be completed 2020	4%
		Overhead circuit inspection	To be completed 2020	0%
Huffs Church	00600-1	*Performance was driven by trees off ROW (76%) and vehicle (15%)*		
		Thermovision and overhead inspection	Complete	Jan-19
		Targeted forestry inspection	Complete	Feb-19
		Replace mainline guy wire from inspection	Complete	Mar-19
		Replace mainline pole from inspection	Complete	Jul-19
		Replace crossarm from inspection	Complete	Sep-19
		Repair mainline guy wire from inspection	Complete	Oct-19
		Replace mainline crossarm	Complete	Nov-19
		Engineering circuit tie addition review	Complete	Dec-19
		Enhanced Tree Trimming	Under review	0%
		On cycle tree trimming	To be completed 2020	0%
		Overhead circuit inspection	To be completed 2020	0%

Met-Ed				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work**	**Progress of Remedial Work or Date Completed**
Lickdale	00626-2	*Performance was driven by trees off ROW (41%) and vehicle (30%)*		
		Three-phase overhead inspection	Complete	Jan-19
		Repair/replace high priority items identified during inspection	Complete	Mar-19
		Install SCADA switch #1	Complete	Aug-19
		Install SCADA switch #2	Complete	Aug-19
		Install SCADA switch #3	Complete	Aug-19
		Install SCADA recloser #1	Complete	Aug-19
		GOAB Replacement	Complete	Dec-19
		Targeted Mainline Circuit Rehabilitation #1	To be completed 2020	50%
		Targeted Mainline Circuit Rehabilitation #2	To be completed 2020	50%
		Targeted Mainline Circuit Rehabilitation #3	To be completed 2020	50%
		Overhead circuit inspection	To be completed 2020	0%
Lynnville	00735-1	*Performance was driven by trees off ROW (60%) and vehicle (33%)*		
		Upgrade mainline recloser	Complete	Mar-19
		Replace line clamp from thermovision inspection #1	Complete	Apr-19
		Overhead circuit inspection	Complete	May-19
		Install SCADA switch #1	Complete	Sep-19
		Replace arrester from thermovision inspection	Complete	Oct- 19
		Install SCADA switch #2	Complete	Oct- 19
		Replace line clamp from thermovision inspection #2	Complete	Nov- 19
		Replace pole from thermovision inspection	Complete	Nov- 19
		Install SCADA switch #3	To be completed 2020	75%
Mountain	00744-4	*Performance was driven by trees off ROW (86%)*		
		Perform accelerated backbone and three phase circuit assessment	Complete	Mar-19
		Replace pole from inspection	Complete	Jun-19
		Replace pole from inspection	Complete	Aug-19
		Upgrade Zone 2 recloser to EMS radio controlled	Complete	Oct-19
		Enhanced tree trimming	Complete	Dec-19
		Overhead circuit inspection	To be completed 2020	0%

Met-Ed				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work**	**Progress of Remedial Work or Date Completed**
Mountain	00740-4	*Performance was driven by trees off ROW (83%) and equipment failures (8%)*		
		Perform accelerated backbone and three phase circuit assessment	Complete	Feb-19
		Install SCADA recloser #1	Complete	Nov-19
		Install SCADA recloser #2	Complete	Oct-19
		Enhanced tree removal	Complete	Dec-19
		Overhead circuit inspection	To be completed 2020	0%
N. Cornwall	00610-2	*Performance was driven by trees off ROW (68%)*		
		Three-phase overhead inspection	Complete	Jan-19
		Repair/replace high priority items identified during inspection	Complete	Oct-19
		Remove switch that limits backfeed capacity	Complete	Dec-19
		Porcelain cutout replacement in the lockout zone	Complete	Dec-19
		On cycle tree trimming	To be completed 2020	0%
Queen St	00522-4	*Performance was driven by trees off ROW (34%), wind (23%), unknown (22%), and equipment failure (15%)*		
		Post storm patrol	Complete	Feb-19
		Complete circuit protection study	Complete	Feb-19
		Complete engineering review for additional remote-control devices	Complete	Feb-19
		Repair equipment failure	Complete	Apr-19
		Targeted mainline inspection	Complete	Oct-19
		Enhanced tree removal	Complete	Dec-19
S Nazareth	00809-3	*Performance was driven by trees off ROW (68%), line failure (11%), and equipment failure (10%)*		
		Replace pole from inspection	Complete	Jan-19
		Three-phase overhead inspection	Complete	Feb-19
		Install SCADA recloser #1	Complete	Dec-19
		Install SCADA recloser #2	Complete	Dec-19
		Install SCADA recloser #3	Complete	Dec-19
		Install SCADA recloser #4	Complete	Dec-19
		Construct circuit tie	To be completed 2020	50%
		Targeted Mainline Circuit Rehabilitation	To be completed 2020	50%
		On cycle tree trimming	To be completed 2020	0%

Met-Ed				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work**	**Progress of Remedial Work or Date Completed**
Saylorsburg	00114-3	*Performance was driven by trees off ROW (46%) and vehicle (36%)*		
		On cycle tree trimming	Complete	Dec-19
		Thermovision and overhead inspection	Complete	Feb-19
Shawnee	00895-3	*Performance was driven by trees off ROW (59%) and equipment failure (15%)*		
		Three-phase overhead inspection	Complete	Jan-19
		Repair items identified during circuit inspection	Complete	Mar-19
		On cycle tree trimming	To be completed 2020	0%

Penelec				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Birmingham	00168-22	*Performance was driven by vehicle accident (55%), trees off ROW (19%), and line failure (10%)*		
		Repair damage caused by trees during a storm	Complete	Jan-19
		Repair damage caused by vehicle accident	Complete	Jan-19
		Repair damage caused by line failure	Complete	May-19
		Install advanced distribution protective devices	To be Completed 2020	0%
Brookville	00125-23	*Performance was driven by equipment failure (43%) and trees off ROW (38%)*		
		Repair damage caused by trees during a storm	Complete	Jan-19
		Repair equipment failure during a storm	Complete	Feb-19
		Repair equipment failure	Complete	Apr-19
		On cycle tree trimming	Complete	Nov-19
DuBois	00137-23	*Performance was driven by trees off ROW (71%) and equipment failure (15%)*		
		Repair damage caused by trees during a storm	Complete	Jan-19
		Repair damage caused by trees	Complete	Jun-19
		Targeted circuit rehabilitation	Complete	Aug-19
		On cycle tree trimming	Complete	Nov-19
		Install advanced distribution protective devices	To be Completed 2020	0%
		Circuit inspection	To be Completed 2020	0%
Grover	00527-63	*Performance was driven by non-company human error (53%), squirrel (25%), and trees off ROW (12%)*		
		Repair damage caused by non-company human error	Complete	Sep-19
		Repair damage caused by an squirrel	Complete	Dec-19
		Circuit inspection	To be Completed 2020	0%
Hilltop	00048-11	*Performance was driven by line failure (74%) and structure fire (24%)*		
		Repair line failure	Complete	Jan-19
		Forced outage due to structure fire	Complete	Jan-19

Penelec				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Logan	00700-81	*Performance was driven by trees off ROW (96%)*		
		Repair damage caused by trees	Complete	Mar-19
		Repair damage caused by trees during a storm	Complete	Apr-19
		Repair damage caused by trees during a storm	Complete	Aug-19
		Repair damage caused by trees	Complete	Dec-19
		Circuit inspection	To be Completed 2020	0%
Logan	00701-81	*Performance was driven by trees off ROW (44%), line failure (25%), and non-company human error (17%)*		
		Repair damage caused by non-company human error	Complete	May-19
		Reapir line failure	Complete	May-19
		Repair damage caused by trees during a storm	Complete	Aug-19
		Repair line failure	Complete	Oct-19
		Targeted circuit rehabilitation	To be Completed 2020	0%
Madera	00165-22	*Performance was driven by trees off ROW (85%)*		
		Repair damage caused by trees during a storm	Complete	Jan-19
		Repair damage caused by trees during a storm	Complete	Feb-19
		Repair damage caused by trees during a storm	Complete	May-19
		Install advanced distribution protective devices	Complete	Jan-19
		Circuit inspection	To be Completed 2020	0%
		On cycle tree trimming	To be Completed 2020	0%
Madera	00166-22	*Performance was driven by vehicle (57%), equipment failure (15%), and trees off ROW (15%)*		
		Repair equipment failure	Complete	Jan-19
		Repair damage caused by a vehicle	Complete	Feb-19
		Repair damage caused by a vehicle	Complete	Jul-19
		Repair damage caused by trees during a storm	Complete	Oct-19
		Install advanced distribution protective devices	To be Completed 2020	0%
		Circuit inspection	To be Completed 2020	0%

Penelec				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
McConnellstown	00099-82	*Performance was driven by breaker operation of primary contact (83%) and trees off ROW (14%)*		
		Restore breaker operation of primary contact	Complete	Jan-19
		Repair damage caused by trees	Complete	Aug-19
		Install advanced distribution protective devices	To be Completed 2020	0%
		Circuit inspection	To be Completed 2020	0%
Milroy	00128-81	*Performance was driven by breaker operation of unknown cause (52%) and trees off ROW (43%)*		
		Repair damage caused by trees during a storm	Complete	Jun-19
		Restore breaker operation of unknown cause	Complete	Aug-19
		Install advanced distribution protective devices	To be Completed 2020	0%
		Install new radio controlled switch	To be Completed 2020	0%
Philipsburg	00162-22	*Performance was driven by equipment failure (32%), trees off ROW (25%), and lightning (24%)*		
		Repair equipment failure	Complete	Jan-19
		Split large circuits	Complete	Apr-19
		Targeted circuit rehabilitation	Complete	Apr-19
		Repair damage caused by lightning	Complete	Aug-19
		Install advanced distribution protective devices	To be Completed 2020	0%
		Circuit inspection	To be Completed 2020	0%
Piney	00523-51	*Performance was driven by trees off ROW (51%) and equipment failure (45%)*		
		Repair equipment failure	Complete	Jun-19
		Repair equipment failure	Complete	Aug-19
		Circuit inspection	Complete	Sep-19
		Install new radio-controlled switch	To be Completed 2020	95%
		Install advanced distribution protective devices	To be Completed 2020	0%
		On cycle tree trimming	To be Completed 2020	0%
Revloc	00069-72	*Performance was driven by trees off ROW (100%)*		
		Repair damage caused by trees during a storm	Complete	Feb-19
		Repair damage caused by trees during a storm	Complete	May-19
		On cycle tree trimming	To be Completed 2020	0%

Penelec				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Russell Hill	00282-65	*Performance was driven by trees off ROW (87%)*		
		Repair damage caused by trees during a storm	Complete	Jan-19
		Repair damage caused by trees	Complete	Jan-19
		Repair damage caused by trees	Complete	Mar-19
		Repair damage caused by trees	Complete	Dec-19
Springboro	00237-52	*Performance was driven by trees off ROW (78%) and bird (12%)*		
		Repair damage caused by trees during a storm	Complete	Feb-19
		Repair damage caused by trees during a storm	Complete	Apr-19
		Repair damage caused by trees during a storm	Complete	Apr-19
		Repair damage caused by trees	Complete	Sep-19
		Repair damage caused by bird	Complete	Oct-19
		Targeted circuit rehabilitation	Complete	Dec-19
		Install advanced distribution protective devices	To be Completed 2020	0%
Thompson	00436-65	*Performance was driven by trees off ROW (33%), line failure (32%), and equipment failure (20%)*		
		Repair line failure	Complete	Mar-19
		Circuit inspection	Complete	May-19
		Repair equipment failure	Complete	Jul-19
		Repair line failure	Complete	Dec-19
		On cycle tree trimming	To be Completed 2020	0%
Timblin	00103-23	*Performance was driven by trees off ROW (45%), line failure (21%), and lightning (12%)*		
		Targeted circuit rehabilitation	Complete	May-19
		Repair damage caused by trees	Complete	Jun-19
		Repair line failure	Complete	Jan-19
		Repair damage caused by lightning	Complete	Aug-19
		On cycle tree trimming	Complete	Oct-19
		Install advanced distribution protective devices	To be Completed 2020	0%

Penelec				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Union City	00206-43	*Performance was driven by trees off ROW (26%), equipment failure (26%), and non company human error (12%)*		
		Repair damage caused by trees during a storm	Complete	Jan-19
		Repair equipment failure during a storm	Complete	Jan-19
		Repair line failure	Complete	Jan-19
		Install advanced distribution protective devices	Complete	Jan-19
		Targeted circuit rehabilitation	Complete	Jan-19
		Repair damage caused by non-company human error	Complete	Aug-19
		Install new radio-controlled switch	To be Completed 2020	95%
		Targeted circuit rehabilitation	To be Completed 2020	0%
		On cycle tree trimming	To be Completed 2020	0%
Warren South	00220-41	*Performance was driven by trees off ROW (77%) and eqipment failure (9%)*		
		Repair damage caused by trees	Complete	Jan-19
		Repair equipment failure	Complete	Jun-19
		On cycle tree trimming	Complete	Nov-19
		Install advanced distribution protective devices	To be Completed 2020	0%
		Circuit inspection	To be Completed 2020	0%

Penn Power				
Substation	**Circuit**	**Remedial Action Planned or Taken**	**Status of Remedial Work**	**Progress of Remedial Work or Date Completed**
Perry	W-156	*Performance was driven by equipment failure (58%), bird (22%) and trees off ROW (14%)*		
		Replace switch	Complete	Feb-19
		Repair damage from bird nest	Complete	Apr-19
		Repair damage from bird nest	Complete	Sep-19
		Repair damage caused by trees	Complete	Nov-19
Thompson Run	D550	*Performance was driven by trees off ROW (45%), equipment failure (40%), and line failure (11%)*		
		Repair damage caused by trees during a storm	Complete	Feb-19
		Repair damage caused by trees during a storm	Complete	Jun-19
		Replace crossarm	Complete	Jun-19
		Repair line failure during storm	Complete	Jul-19

West Penn Power				
Substation	**Substation**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Amity	Amity	*Performance driven by trees off ROW (81%)*		
		Repair damage caused by a tree during a storm	Complete	Jan-19
		Forced outage to repair damage during a storm	Complete	Mar-19
		Repair line failure	Complete	Apr-19
		Repair damage caused by a tree during a storm	Complete	Apr-19
		Overhead circuit inspection	Complete	Jul-19
		Repair damage caused by a tree during a storm	Complete	Jul-19
		Repair damage caused by a tree during a storm	Complete	Oct-19
Avella	W Middletown	*Performance driven by trees off ROW (78%) and line failure (13%)*		
		Repair damage caused by a tree during a storm	Complete	Jan-19
		Repair damage caused by a tree	Complete	Feb-19
		Repair line failure	Complete	Jun-19
		Repair damage caused by a tree during a storm	Complete	Jun-19
		Repair line failure during a storm	Complete	Jul-19
		Repair damage caused by a tree during a storm	Complete	Jul-19
		Restore unknown outage during a storm	Complete	Oct-19
Bedford Road	Rt 220 North	*Performance driven by trees off ROW (88%)*		
		On Cycle Tree Trimming	Complete	Jan-19
		Repair damage caused by a tree during a storm	Complete	Jan-19
		Restore unknown outage during a storm	Complete	May-19
		Repair damage caused by a tree during a storm	Complete	Jun-19
		Repair damage caused by a tree during a storm	Complete	Aug-19
		Forced outage to repair damage	Complete	Nov-19
		Repair damage caused by a tree during a storm	Complete	Nov-19

West Penn Power				
Substation	**Substation**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Bethlen	Darlington	*Performance driven by trees off ROW (69%) and unknown (13%)*		
		Repair damage caused by a tree	Complete	Jan-19
		Repair damage caused by a tree	Complete	Apr-19
		Repair damage caused by a tree	Complete	Jun-19
		Restore unknown outage	Complete	Jun-19
		Repair equipment failure during a storm	Complete	Jul-19
		Repair damage caused by a tree during a storm	Complete	Jul-19
		Repair damage caused by a tree	Complete	Oct-19
Flintstone	Chaneysville	*Performance driven by trees off ROW (79%) and Ice (14%)*		
		Repair damage caused by a tree during a storm	Complete	Jan-19
		Repair damage caused by a tree during a storm	Complete	Feb-19
		Repair damage caused by a tree during a storm	Complete	Apr-19
		Forced outage to repair damage during a storm	Complete	Jun-19
		Restore unknown outage	Complete	Jul-19
		Repair damage caused by a tree during a storm	Complete	Jul-19
		Repair damage caused by a tree	Complete	Oct-19
		Repair damage caused by ice during a storm	Complete	Dec-19
Fort Palmer	West Fairfield	*Performance driven by trees off ROW (76%) and line failure (15%)*		
		Repair damage caused by a tree during a storm	Complete	Feb-19
		Restore unknown outage	Complete	Mar-19
		Repair damage caused by a tree during a storm	Complete	May-19
		Zone 1 Infrared Inspection	Complete	Jul-19
		Repair line failure during a storm	Complete	Oct-19

West Penn Power				
Substation	**Substation**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Franklin	Rogersville	*Performance driven by trees off ROW (60%) and line failure (27%)*		
		Repair damage caused by a tree during a storm	Complete	Jan-19
		Repair damage caused by a tree during a storm	Complete	Jan-19
		Repair equipment failure	Complete	Jun-19
		Repair damage caused by a tree	Complete	Jun-19
		Repair line failure during a storm	Complete	Jul-19
		Repair damage caused by a tree during a storm	Complete	Jul-19
		Repair line failure	Complete	Dec-19
		Repair damage caused by a tree	Complete	Dec-19
		Zone 1 Infrared Inspection	To Be Completed 2020	0%
Kane	Russell City	*Performance driven by trees off ROW (74%) and line failure (21%)*		
		Repair line failure	Complete	Jan-19
		Repair damage caused by a tree during a storm	Complete	Jan-19
		Repair damage caused by a tree during a storm	Complete	May-19
		Repair damage caused by a tree	Complete	Aug-19
		Repair damage caused by a tree	Complete	Dec-19
		Zone 1 Infrared Inspection	To Be Completed 2020	0%
Rutan	Bristoria	*Performance driven by trees off ROW (66%) and line failure (15%)*		
		Repair line failure during a storm	Complete	Feb-19
		Repair equipment failure during a storm	Complete	Feb-19
		Repair damage caused by a tree	Complete	May-19
		Repair line failure during a storm	Complete	Jun-19
		Overhead circuit inspection	Complete	Jun-19
		Repair damage caused by a tree during a storm	Complete	Jul-19
		Restore unknown outage	Complete	Aug-19
		Forestry off cycle work	Complete	Sep-19
		Repair line failure	Complete	Nov-19

West Penn Power				
Substation	**Substation**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Smith	Florence	*Performance driven by trees off ROW (54%), forced outage (18%), and line failure (11%)*		
		Enhanced WPC remediation	To Be Completed 2019	0%
		Repair damage caused by a tree during a storm	Complete	Jan-19
		Restore unknown failure	Complete	May-19
		Repair damage caused by a tree during a storm	Complete	Jun-19
		Forced outage to repair damage	Complete	Jul-19
		Repair line failure during a storm	Complete	Jul-19
		Repair line failure during a storm	Complete	Nov-19
Smith	Francis Mine	*Performance driven by trees off ROW (81%)*		
		Repair damage caused by a tree	Complete	Mar-19
		Repair damage caused by a tree	Complete	Apr-19
		Repair damage caused by a tree during a storm	Complete	Jun-19
		Repair damage caused by a tree during a storm	Complete	Jul-19
		Zone 1 Infrared Inspection	Complete	Jul-19
		Repair equipment failure	Complete	Oct-19
St. Clair	Skyridge	*Performance driven by trees off ROW (93%)*		
		Repair equipment failure	Complete	Jan-19
		Repair damage caused by a tree during a storm	Complete	Jun-19
		Repair damage caused by a tree during a storm	Complete	Jul-19
		Repair damage caused by a tree during a storm	Complete	Sep-19
		Repair damage caused by a tree during a storm	Complete	Oct-19
		On Cycle Tree Trimming	To Be Completed 2020	0%

West Penn Power				
Substation	**Substation**	**Remedial Action Planned or Taken**	**Status of Remedial Work Completed**	**Progress of Remedial Work or Date Completed**
Waterville	Waterville	*Performance driven by other electric utility (57%) and trees off ROW (29%)*		
		Repair damage caused by a tree	Complete	Mar-19
		Restore outage caused by other electric utility	Complete	May-19
		Repair damage caused by a tree	Complete	Jun-19
		Restore outage caused by other electric utility during a storm	Complete	Jun-19
		Restore outage caused by other electric utility	Complete	Aug-19
		Repair damage caused by a tree during a storm	Complete	Dec-19
		On Cycle Tree Trimming	To Be Completed 2020	0%

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Joint 2019 Annual Reliability Report –	**:**
Metropolitan Edison Company,	**:**
Pennsylvania Electric Company,	**:**
Pennsylvania Power Company, and	**:**
West Penn 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 electronic mail, as follows:

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Dated: April 30, 2020

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