FirstEnergy

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April 29, 2022

VIA E-FILING

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

Re: Joint 2021 Annual Reliability Report – Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company; Docket No. M-2016-2522508

Dear Secretary Chiavetta,

Pursuant to 52 Pa. Code § 57.195(a) and (b), enclosed for filing is the Joint 2021 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,

Tori L. Giesler

kbw
Enclosures

c: As Per Certificate of Service
D. Searfoorce – Bureau of Technical Utility Services (via electronic mail)
J. Van Zant – Bureau of Technical Utility Services (via electronic mail)
Derek Ruhl - PaPUC 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 2021 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 2021 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 2021 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. In 2021, the Companies were able to maintain a focus on safe and reliable electric service while continuing to protect their employees and customers from exposure to COVID-19. A large portion of non-physical workers were able to work remotely using technology to perform their responsibilities safely. For those employees not able to work remotely, additional hygiene and social distancing measures were taken when COVID-19 cases would increase. This included items such as smaller reporting groups, remote reporting locations, additional vehicles, hand sanitizing or hand washing stations, extra personal protective equipment (*i.e.* masks and gloves), and more frequent surface cleaning. From the physical field employees up to and including top management, the Companies are committed to operating 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 Company's 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.
- In 2021 the Companies started using Resistograph technology. Poles showing incipient decay or poles that are thirty-five years old or older will be inspected by the use of a Resistograph. The Resistograph is a sophisticated electronically controlled drill that provides increased accuracy, when compared to manual drilling, in measuring the relative density of wood in timber structures. Driven by a drill motor, a long, thin needle is inserted into the wood pole in order to assess its density, structural integrity, and shell thickness.

- Vegetation Management
  - Routine cycle 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.[2] The Companies are limited in their ability to legally address all forms of off-right-of-way ("ROW") tree management; however, priority off-ROW trees are identified when significantly encroaching the corridor and removed when customer consent is obtained or easement rights permit.
  - Portions of a circuit that experience high customer interruption minutes due to vegetation-caused outages may be targeted to include the removal of certain healthy limbs which overhang primary conductors based on tree species and condition.
  - 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")

[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, 2021 through December 31, 2022 on October 1, 2019, which was deemed approved pursuant to 52 Pa. Code § 57.198(i).

[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.

  - 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. In January 2020, the Commission approved the Companies' respective second LTIIP ("LTIIP II"). LTIIP II, which spans the five-year period of 2020 through 2024, focuses on two areas: asset health 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.
- Summer Readiness
    - Summer is the time when most electric utilities experience the highest system loads and most damaging storms. In order to prepare for this period of the year, the Companies perform summer readiness activities such as capacitor inspections, substation inspections, transmission system reliability and capability review, and post-storm reviews to identify and disseminate lessons learned after significant events.
- 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 have 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 2021, 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 the impact of 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 2021 Joint Reliability Report, shows that seven of twelve reliability indices in 2021 were at or better than the Commission's twelve-month standards with one of the indices being better than benchmark.

2021 (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	1.35	1.26	1.52	1.84	1.12	1.34	1.00	1.05	1.26	1.26
CAIDI	117	140	173	117	141	141	101	121	129	170	204	192
SAIDI	135	194	233	148	213	277	113	162	129	179	257	242
MAIFI[4]			0.670			0.547			0.013			
Customers Served[5]	573,243			580,180			166,590			722,422		
Number of Sustained Interruptions	12,819			14,397			3,217			12,734		
Customers Affected	772,644			1,065,004			166,681			910,590		
Customer Minutes	133,405,906			160,524,900			21,565,551			174,483,152		
Number of Customer Momentary Interruptions	380,297			397,501			104,828					

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

[5] 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.*[6]

Major Events

FirstEnergy Company	Customers Affected	Time and Duration of the Event		Cause of the Event	Commission Approval Status
Penn Power	18,666	Duration	60 hours, 25 minutes	High Winds and Rain	Approved April 13, 2021
		Start Date/Time	March 26, 2021 0529		
		End Date/Time	March 28, 2021 1754		
Penelec	61,821	Duration	105 hours 11 minutes	Thunderstorms	Approved December 28, 2021
		Start Date/Time	July 6, 2021 1229		
		End Date/Time	July 10, 2021 2140		
Met-Ed	61,317	Duration	113 hours 19 minutes	Hurricane Ida	Approved October 21, 2021
		Start Date/Time	September 1, 2021 0724		
		End Date/Time	September 6, 2021 0043		

[6] 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	**2019**	**2020**	**2021**
Met-Ed	SAIFI	1.54	1.27	1.35
	CAIDI	164	150	173
	SAIDI	253	190	233
	MAIFI	0.80	0.63	0.67
	Customer Minutes	143,334,631	108,430,636	133,405,906
	Customers Affected	874,452	724,138	772,644
	Minutes of Interruption	4,506,031	3,869,429	4,541,905
	Customers Served[7]	566,218	569,922	573,243
Penelec	SAIFI	1.72	1.58	1.84
	CAIDI	147	136	151
	SAIDI	252	214	277
	MAIFI	.73	0.55	0.66
	Customer Minutes	146,082,071	124,129,511	160,524,900
	Customers Affected	995,121	914,716	1,065,004
	Minutes of Interruption	4,292,985	4,054,877	5,118,308
	Customers Served	579,647	579,765	580,180
Penn Power	SAIFI	1.38	0.97	1.00
	CAIDI	129	185	129
	SAIDI	178	179	129
	MAIFI	0.14	0.01	0.63
	Customer Minutes	29,151,703	29,576,002	21,565,551
	Customers Affected	226,745	159,907	166,681
	Minutes of Interruption	1,157,569	1,456,058	1,011,334
	Customers Served	164,199	165,229	166,590

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

Historic 12-Month Rolling Reliability Indices				
	Index	**2019**	**2020**	**2021**
West Penn	SAIFI	1.19	1.12	1.26
	CAIDI	165	216	192
	SAIDI	196	241	242
	Customer Minutes	140,292,539	173,878,127	174,483,152
	Customers Affected	851,338	806,924	910,590
	Minutes of Interruption	4,667,135	5,912,584	4,909,228
	Customers Served	717,331	720,861	722,128

See tables below for the three-year standard results:

Three-Year Rolling Year-End 2021	**Met-Ed**		**Penelec**	
	Three-Year Standard	Three-Year Actual	Three-Year Standard	Three-Year Actual
SAIFI	1.27	1.39	1.39	1.71
CAIDI	129	162	129	144
SAIDI	163	226	179	248

Three-Year Rolling Year-End 2021	**Penn Power**		**West Penn**	
	Three-Year Standard	Three-Year Actual	Three-Year Standard	Three-Year Actual
SAIFI	1.23	1.12	1.16	1.19
CAIDI	111	148	187	191
SAIDI	136	162	217	226

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				
2021 12-Month Rolling	**Met-Ed**			
Cause	**Customer Minutes**	**Number of Sustained Interruptions**	**Customers Affected**	**% Based on Customer Minutes**
Trees off ROW - tree	66,428,817	3,270	222,068	49.79%
Equipment failure	23,254,228	2,624	168,806	17.43%
Vehicle	8,712,215	327	50,151	6.53%
Unknown	6,494,991	1,258	61,582	4.87%
Trees off ROW - limb	5,580,609	618	25,684	4.18%
Line failure	5,076,907	738	31,974	3.81%
Forced outage	4,331,424	501	74,896	3.25%
Lightning	3,682,207	312	19,435	2.76%
Animal	2,530,052	1,399	36,659	1.90%
Wind	1,690,137	111	10,016	1.27%
Human error - company	1,323,913	66	42,073	0.99%
Trees on ROW	1,151,608	115	3,981	0.86%
Trees - sec/service	942,455	570	1,791	0.71%
Object contact with line	640,352	65	5,974	0.48%
Human error - non-company	593,405	52	3,979	0.44%
Bird	338,532	627	3,943	0.25%
Overload	319,089	39	7,236	0.24%
Previous lightning	93,978	22	345	0.07%
UG dig-up	84,590	32	583	0.06%
Other electric utility	54,105	9	547	0.04%
Customer equipment	33,474	32	179	0.03%
Other utility - non-electric	17,543	7	512	0.01%
Contamination	14,355	1	145	0.01%
Ice	13,674	13	56	0.01%
Fire	2,444	6	24	0.00%
Vandalism	802	5	5	0.00%
Total	**133,405,906**	**12,819**	**772,644**	**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, 2021, 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 is limited in its ability to legally address all forms of off-right-of-way ("ROW") tree management. However, Met-Ed 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. 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 continues its program to mitigate trees subject to damage from the Emerald Ash Borer.

To reduce the likelihood of equipment failure outages, Met-Ed follows inspection and maintenance ("I&M") programs[8] 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 equipment at the location had previously been damaged warranting consideration of remedial actions. Remedial actions could include modifying attachment height for communications, installing a taller pole, relocating the pole, or installing sectionalizing equipment to minimize customer impact.

[8] 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. The Companies submitted their Biennial Inspection, Maintenance, Repair and Replacement Plan for the period January 1, 2021 through December 31, 2022 on October 1, 2019, which was deemed approved pursuant to 52 Pa. Code § 57.198(i).

Outages by Cause – Penelec

Outage by Cause				
2021 12-Month Rolling	**Penelec**			
Cause	**Customer Minutes**	**Number of Sustained Interruptions**	**Customers Affected**	**% Based on Customer Minutes**
Trees off ROW - tree	65,134,922	2,490	284,057	40.58%
Equipment failure	29,926,345	2,597	242,696	18.64%
Line failure	12,864,067	1,416	110,631	8.01%
Forced outage	9,417,228	1,230	83,675	5.87%
Unknown	7,736,493	1,716	94,935	4.82%
Trees off ROW - limb	6,752,862	790	42,228	4.21%
Lightning	5,636,708	423	43,758	3.51%
Vehicle	5,101,216	326	35,946	3.18%
Wind	4,058,060	1,193	15,581	2.53%
Animal	3,853,926	205	37,130	2.40%
Other electric utility	2,669,422	155	17,884	1.66%
Ice	1,700,384	108	4,667	1.06%
Human error - company	1,366,571	854	19,901	0.85%
Trees - sec/service	1,081,080	475	3,601	0.67%
Bird	904,733	86	11,053	0.56%
Human error - non-company	816,243	49	5,182	0.51%
UG dig-up	354,579	63	1,387	0.22%
Trees on ROW	349,220	49	1,372	0.22%
Overload	344,105	19	3,291	0.21%
Customer equipment	142,381	22	2,308	0.09%
Object contact with line	107,018	36	497	0.07%
Switching Error	92,779	6	2,764	0.06%
Contamination	57,975	13	292	0.04%
Previous lightning	26,886	12	32	0.02%
Fire	18,213	45	106	0.01%
Other utility - non-electric	9,890	5	18	0.01%
Vandalism	1,594	14	12	0.00%
Total	**160,524,900**	**14,397**	**1,065,004**	**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, 2021 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 is limited in its ability to legally address all forms of off-ROW 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. In response to damage caused by the Emerald Ash Borer, a program to proactively remove ash trees off rights-of-way was completed in 2019. Beyond 2019, any additional ash trees are addressed under Penelec's hazardous tree maintenance process.

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.

Outages by Cause – Penn Power

Outage by Cause				
2021 12-Month Rolling	**Penn Power**			
Cause	**Customer Minutes**	**Number of Sustained Interruptions**	**Customers Affected**	**% Based on Customer Minutes**
Trees off ROW - tree	12,738,012	765	60,449	59.07%
Line failure	1,588,545	267	9,728	7.37%
Lightning	1,516,946	317	9,423	7.03%
Equipment failure	1,085,321	303	12,107	5.03%
Vehicle	1,062,017	80	8,028	4.92%
Trees off ROW - limb	910,066	181	6,777	4.22%
Unknown	714,846	147	23,034	3.31%
Animal	559,618	445	7,873	2.59%
Forced outage	397,180	83	8,170	1.84%
Bird	352,031	405	3,907	1.63%
Human error - company	217,440	27	14,915	1.01%
Trees - sec/service	189,996	140	449	0.88%
Human error - non-company	167,342	23	1,111	0.78%
Object contact with line	30,045	7	258	0.14%
UG dig-up	20,559	10	264	0.10%
Trees on ROW	7,631	3	103	0.04%
Ice	3,705	1	13	0.02%
Overload	3,132	2	61	0.01%
Previous lightning	776	7	7	0.00%
Customer equipment	239	3	3	0.00%
Vandalism	104	1	1	0.00%
Total	**21,565,551**	**3,217**	**166,681**	**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, 2021 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 is limited in its ability to legally address all forms of off-ROW 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 and line failure outages, 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.

Outages by Cause – West Penn

Outage by Cause				
2021 12-Month Rolling	**West Penn**			
Cause	**Customer Minutes**	**Number of Sustained Interruptions**	**Customers Affected**	**% Based on Customer Minutes**
Trees off ROW - tree	85,733,317	3,341	286,176	49.14%
Equipment failure	18,275,944	1,872	124,086	10.47%
Line failure	16,805,645	1,315	93,858	9.63%
Unknown	15,793,726	1,632	101,640	9.05%
Vehicle	9,940,311	328	70,047	5.70%
Trees on ROW	7,862,058	491	37,938	4.51%
Forced outage	5,171,949	615	68,136	2.96%
Trees off ROW - limb	4,545,063	270	36,272	2.60%
Wind	2,434,405	113	9,242	1.40%
Animal	2,331,052	1,412	35,973	1.34%
Human error - non-company	1,232,083	60	5,891	0.71%
Lightning	1,219,552	220	5,622	0.70%
Bird	750,421	480	8,778	0.43%
Other electric utility	679,103	21	2,591	0.39%
Human error - company	528,952	44	16,486	0.30%
Trees - sec/service	425,925	432	826	0.24%
Ice	259,958	7	1,112	0.15%
Overload	233,331	7	3,723	0.13%
Object contact with line	92,951	11	856	0.05%
UG dig-up	74,381	32	582	0.04%
Fire	51,019	7	488	0.03%
Customer equipment	38,781	13	248	0.02%
Other utility - non-electric	2,393	4	12	0.00%
Contamination	414	2	2	0.00%
Vandalism	238	3	3	0.00%
Previous Lightning	180	2	2	0.00%
Total	**174,483,152**	**12,734**	**910,590**	**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, 2021, 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 is legally limited in its ability to address all forms of off-ROW 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 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.

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		Met-Ed		Penelec		Penn Power		West Penn	
2021		Planned	Completed	Planned	Completed	Planned	Completed	Planned	Completed
Forestry	Transmission (Miles)	288.35	288.35	485.79	485.78[9]	137.78	137.91	167.08	167.08
	Distribution (Miles)	2,925	2,925	3,703	3,703	1,162	1,162	4,675	4,687
Transmission	Aerial Patrols	2	2	2	2	2	2	2	2
	Groundline	1167	1480	3,049	3,579	484	623	2,072	2,677
Substation	Substation Inspections Class A	418	418	784	784	148	148	950	950
	Substation Inspections Class B	418	418	784	784	148	148	950	950
	Substation Inspections Class C	1,672	1,672	3,136	3,136	592	592	3,800	3,800
	Transformers	148	148	419	419	14	14	347	347
	Breakers	78	78	433	433	9	9	388	388
	Relay Schemes	276	276	259	259	22	22	106	106
Distribution	Capacitors	4,767	4,777	8,667	8,667	984	1,011	1,312	1,312
	Poles	28,001	38,894	41,584	46,964	10,960	9,829[10]	49,815	50,203
	Reclosers	1,200	1,299	2,586	2,592	966	969	4,020	4,020
	Radio-Controlled Switches	1,308	1,355	2,646	2,647	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.

[9] Transmission miles trimmed decreased by 0.01 miles due to a mapping change.

[10] Inspection start was delayed until mid-year, therefore, 10.3% of the 2021 wood pole inspections carried into 2022. The inspections were completed on 2/17/2022.

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 - 2021 ($)					
Transmission					
Category		**2021 Actuals**	**2021 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	0	0	N/A	
561	Load Dispatching	100,183	83,851	19%	1
562	Station Expenses	8,027	0	100%	2
563	Overhead Lines Expenses	45,612	46,000	-0.84%	
565	Transmission of Electricity by Others	12,516,231	9,654,000	30%	3
566	Miscellaneous Transmission Expenses	(79,634)	(29,899)	166.35%	4
567	Rents	0	50,637	-100%	5
568	Maintenance Supervision and Engineering	4,499	0	100%	6
569	Maintenance of Structures	208	0	100%	
570	Maintenance of Station Equipment	346,210	106,269	226%	7
571	Maintenance of Overhead Lines	61,003	0	100%	7
572	Transmission-Maintenance of Underground Lines	0	0	N/A	
573	Maintenance of Miscellaneous Transmission Plant	0	0	N/A	
575	Market Administration, Monitoring & Compliance Services	0	0	N/A	
Transmission Total		**$13,002,339**	**$9,910,858**		
Distribution					
Category		**2021 Actuals**	**2021 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	344,466	191,692	80%	8
581	Load Dispatching	187,219	241,073	-22%	9
582	Station Expenses	1,084,444	1,119,815	-3%	
583	Overhead Line Expenses	476,754	223,000	114%	10
584	Underground Line Expenses	0	0	N/A	
586	Meter Expenses	670,013	655,148	2%	
587	Customer Installations Expenses	0	0	N/A	
588	Miscellaneous Distribution Expenses	7,614,670	6,234,111	22%	11
589	Rents	600,961	475,926	26%	12
590	Maintenance Supervision and Engineering	613,564	665,511	-8%	
591	Maintenance of Structures	(22,241)	81,644	-127%	13
592	Maintenance of Station Equipment	5,348,676	4,856,629	10%	14
593	Maintenance of Overhead Lines	54,903,779	43,863,296	25%	11
594	Maintenance of Underground Lines	2,730,069	1,660,312	64%	7
595	Maintenance of Line Transformer	189,920	0	100%	14
596	Maintenance of Street Lighting and Signal Systems	914,776	565,238	62%	7
597	Maintenance of Meters	1,711,253	2,453,820	-30%	15
598	Maintenance of Miscellaneous Distribution Plant	666,717	1,705,457	-61%	16
Distribution Total		**$78,035,040**	**$64,992,673**		
Met-Ed Total		**$91,037,379**	**$74,903,531**		

Variance Explanations (Variances 10% or greater)	
1	Over budget due to the increase in load studies associated with new commercial and residential business.
2	Over budget due to substation telecommunication repairs being greater than planned.
3	Over budget due to PJM Transmission Enhancement and Ancillary Services costs being greater than planned.
4	Over budget due to Information Technology (IT) related costs associated with communications being greater than planned.
5	Under budget due to rent expense being less than planned.
6	Over budget due to environmental permits and labor being greater than planned.
7	Over budget due to internal labor costs being greater than planned.
8	Over budget due to contractor and telecommunication equipment being greater than planned.
9	Under budget due to the number of load studies being less than planned.
10	Over budget due to internal labor and equipment costs being greater than planned.
11	Over budget due to internal labor and contractor usage being greater than planned.
12	Over budget due to affiliated rent from transmission control center and joint use rental expense being greater than planned.
13	Under budget due to contractors being less than planned.
14	Over budget due to materials and internal labor being greater than planned.
15	Under budget due to internal labor costs associated with meter work being less than planned.
16	Under budget due to internal labor and material costs being less than planned.

Penelec T&D O&M - 2021 ($)					
Transmission					
	Category	**2021 Actuals**	**2021 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	0	0	N/A	
561	Load Dispatching	332,219	229,196	45%	1
562	Station Expenses	192,190	208,261	-8%	
563	Overhead Lines Expenses	235,827	208,635	13%	2
564	Transmission-Underground Line Expenses	95	0	100%	
565	Transmission of Electricity by Others	33,561,745	33,165,600	1%	
566	Miscellaneous Transmission Expenses	(803)	0	100%	
567	Rents	0	422,815	-100%	3
568	Maintenance Supervision and Engineering	80,186	(0)	-100%	4
569	Maintenance of Structures	0	0	N/A	
570	Maintenance of Station Equipment	356,212	0	100%	4
571	Maintenance of Overhead Lines	125,507	0	100%	5
572	Transmission-Maintenance of Underground Lines	0	0	N/A	
573	Maintenance of Miscellaneous Transmission Plant	0	0	N/A	
575	Market Administration, Monitoring & Compliance Services	0	0	N/A	
Transmission Total		**$34,883,177**	**$34,234,507**		
Distribution					
	Category	**2021 Actuals**	**2021 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	54,599	913,025	-94%	6
581	Load Dispatching	283,916	315,159	-10%	7
582	Station Expenses	464,018	0	100%	4
583	Overhead Line Expenses	177,366	91,827	93%	8
584	Underground Line Expenses	1,149,222	970,299	18%	9
586	Meter Expenses	1,111,185	1,016,003	9%	
587	Customer Installations Expenses	0	0	N/A	
588	Miscellaneous Distribution Expenses	9,773,873	8,874,450	10%	10
589	Rents	3,259,026	1,856,532	76%	11
590	Maintenance Supervision and Engineering	688,375	727,862	-5%	
591	Maintenance of Structures	0	0	N/A	
592	Maintenance of Station Equipment	5,973,219	7,399,141	-19%	12
593	Maintenance of Overhead Lines	38,596,636	41,540,622	-7%	
594	Maintenance of Underground Lines	1,381,230	135,761	917%	13
595	Maintenance of Line Transformer	160,870	0	100%	4
596	Maintenance of Street Lighting and Signal Systems	1,426,368	1,261,662	13%	14
597	Maintenance of Meters	2,834,093	4,111,789	-31%	12
598	Maintenance of Miscellaneous Distribution Plant	232,866	302,508	-23%	15
Distribution Total		**$67,566,861**	**$69,516,641**		
Penelec Total		**$102,450,038**	**$103,751,148**		

Variance Explanations (Variances 10% or greater)	
1	Over budget due to higher PJM reimbursable services settling to load dispatching.
2	Over budget due to license, permits, and regulatory items being greater than planned.
3	Under budget due to leases/rentals being less than planned.
4	Over budget due to labor requirements being greater than planned.
5	Over budget due to higher contractor costs and labor requirements being greater than planned.
6	Under budget due to engineering contractors, direct purchases, license, permits, and regulations, and labor requirements being less than planned.
7	Under budget due to labor requirements being less than planned.
8	Over budget due to telecom equipment service being greater than planned.
9	Over budget due to transformer maintenance being greater than planned.
10	Over budget due to material, fleet, and labor requirements being greater than planned.
11	Over budget due to outside services/contractors and right of way easements being greater than planned.
12	Under budget due to fleet costs charged to O&M and labor costs being less than planned.
13	Over budget due to transportation and labor requirements being greater than planned.
14	Over budget due to transportation requirements being greater than planned.
15	Under budget due to capitalization of tools being greater than planned.

Penn Power T&D O&M - 2021 ($)					
Transmission					
Category		**2021 Actuals**	**2021 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	1,919	1,473	30%	1
561	Load Dispatching	33,010	6,567	403%	1
562	Station Expenses	1,592	(345)	-562%	2
563	Overhead Lines Expenses	1,507	(600)	-351%	3
565	Transmission of Electricity by Others	4,466,828	4,249,620	5%	
566	Miscellaneous Transmission Expenses	0	0	N/A	
567	Rents	0	0	N/A	
568	Maintenance Supervision and Engineering	16,139	13,568	19%	4
569	Maintenance of Structures	14,990	7,747	93%	5
570	Maintenance of Station Equipment	2,449	3,047	-20%	6
571	Maintenance of Overhead Lines	5,796	87,267	-93%	6
572	Transmission-Maintenance of Underground Lines	0	0	N/A	
573	Maintenance of Miscellaneous Transmission Plant	(321)	0	100%	
575	Market Administration, Monitoring & Compliance Services	0	0	N/A	
Transmission Total		**$4,543,909**	**$4,368,345**		
Distribution					
Category		**2021 Actuals**	**2021 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	0	0	N/A	
581	Load Dispatching	1,435	0	100%	7
582	Station Expenses	56,742	0	100%	8
583	Overhead Line Expenses	175,722	0	100%	9
584	Underground Line Expenses	1,003,603	506,660	98%	10
586	Meter Expenses	72,788	70,669	3%	
587	Customer Installations Expenses	0	0	N/A	
588	Miscellaneous Distribution Expenses	1,271,110	445,027	186%	11
589	Rents	37,736	330,437	-89%	12
590	Maintenance Supervision and Engineering	177,855	186,982	-5%	
591	Maintenance of Structures	0	0	N/A	
592	Maintenance of Station Equipment	965,756	1,271,581	-24%	6
593	Maintenance of Overhead Lines	13,293,220	13,770,610	-3%	
594	Maintenance of Underground Lines	331,948	65,072	410%	13
595	Maintenance of Line Transformer	30,525	0	100%	1
596	Maintenance of Street Lighting and Signal Systems	86,260	26,586	224%	14
597	Maintenance of Meters	547,693	600,788	-9%	
598	Maintenance of Miscellaneous Distribution Plant	162,285	49,185	230%	15
Distribution Total		**$18,214,677**	**$17,323,597**		
Penn Power Total		**$22,758,586**	**$21,691,943**		

Variance Explanations (Variances 10% or greater)	
1	Over budget due to labor being greater than planned.
2	Under budget due to labor and telecom expense being greater than planned.
3	Under budget due to labor being greater than planned.
4	Over budget due to contractor expense being greater than planned.
5	Over budget due to communication equipment expense being greater than planned.
6	Under budget due to material and contractor expense being less than planned.
7	Over budget due to material costs being greater than planned.
8	Over budget due to telecom expense being greater than planned.
9	Over budget due to material and contractor expense being greater than planned.
10	Over budget due to lease expense being greater than planned.
11	Over budget due to material, contractor, and general expenses being greater than planned.
12	Under budget due to lease payments being less than planned.
13	Over budget due to labor and contractors being greater than planned.
14	Over budget due to labor, material, and contractor costs being greater than planned.
15	Over budget due to labor and utility expense being greater than planned.

West Penn Power T&D O&M - 2021 ($)					
Transmission					
	Category	**2021 Actuals**	**2021 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	68,736	52,457	31%	1
561	Load Dispatching	1,163,093	1,222,531	-5%	
562	Station Expenses	2,123,134	524,643	305%	1
563	Overhead Lines Expenses	521,640	23,969	2076%	2
565	Transmission of Electricity by Others	76,089,028	60,074,862	27%	3
566	Miscellaneous Transmission Expenses	750,789	910,255	-18%	4
567	Rents	1,087,169	671,982	62%	5
568	Maintenance Supervision and Engineering	921,720	696,411	32%	2
569	Maintenance of Structures	31,243	24,893	26%	6
570	Maintenance of Station Equipment	4,705,416	3,122,870	51%	7
571	Maintenance of Overhead Lines	11,097,101	9,689,966	15%	8
572	Transmission-Maintenance of Underground Lines	4,314	0	100%	9
573	Maintenance of Miscellaneous Transmission Plant	373,379	318,456	17%	10
575	Market Administration, Monitoring & Compliance Services	157	0	100%	
Transmission Total		**$98,936,918**	**$77,333,295**		
Distribution					
	Category	**2021 Actuals**	**2021 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	(199,960)	21,992	-1009%	11
581	Load Dispatching	1,863,371	2,094,610	-11%	12
582	Station Expenses	1,200,729	818,109	47%	13
583	Overhead Line Expenses	765,009	1,189,458	-36%	14
584	Underground Line Expenses	1,844,861	1,375,000	34%	15
586	Meter Expenses	1,048,158	1,544,436	-32%	16
587	Customer Installations Expenses	0	0	N/A	
588	Miscellaneous Distribution Expenses	15,745,131	13,307,246	18%	17
589	Rents	0	0	N/A	
590	Maintenance Supervision and Engineering	967,030	1,178,550	-18%	18
591	Maintenance of Structures	0	0	N/A	
592	Maintenance of Station Equipment	9,633,295	7,735,477	25%	19
593	Maintenance of Overhead Lines	40,976,647	44,180,141	-7%	
594	Maintenance of Underground Lines	1,280,436	941,187	36%	20
595	Maintenance of Line Transformer	248,928	0	100%	21
596	Maintenance of Street Lighting and Signal Systems	1,003,585	856,169	17%	22
597	Maintenance of Meters	1,751,521	2,167,883	-19%	23
598	Maintenance of Miscellaneous Distribution Plant	114,390	178,955	-36%	24
Distribution Total		**$78,243,133**	**$77,589,213**		
West Penn Power Total		**$177,180,051**	**$154,922,509**		

Variance Explanations (Variances 10% or greater)	
1	Over budget due to internal labor and contractor costs being greater than planned.
2	Over budget due to internal labor, contractors, and other costs being greater than planned.
3	Over budget due to PJM Ancillary Service Transmission Enhancement "Schedule 12" charges being greater than planned.
4	Under budget due to internal labor, contractors, materials, and other costs being less than planned.
5	Over budget due to lease/rental costs for Transmission Control Centers Wadsworth and Akron Control Center being greater than planned.
6	Over budget due to Information Technology (IT) labor costs being greater than planned.
7	Over budget due to contractor, lease, employee expenses, and other costs being greater than planned.
8	Over budget due to internal labor, material, and contractor costs for tree-trimming being greater than planned.
9	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.
10	Over budget due to contractor, material, and employee expense costs being greater than planned.
11	Under budget due to internal labor, material, and employee expenses being less than planned.
12	Under budget due to internal labor, employee expense, and contractor costs being less than planned.
13	Over budget due to internal labor, lease, transportation, and other costs being greater than planned.
14	Under budget due to contractor costs being less than planned.
15	Over budget due to contractor costs and construction overheads administration and general being greater than planned.
16	Under budget due to internal labor and material costs being less than planned.
17	Over budget due to internal labor, contractor, material, and transportation costs being greater than planned.
18	Under budget due to internal labor, and employee expense being less than planned.
19	Over budget due to internal labor, employee expense, contractor, transportation, lease, and all other 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 material costs being greater than planned.
22	Over budget due to internal labor, material, and transportation costs being greater than planned.
23	Under budget due to internal labor and transportation costs being less than planned.
24	Under budget due to contractor, material, and all other costs being less 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 – 2021 ($)					
Category	**2021 Actuals**	**2021 Budget**	**Annual Budget**	**Variance %**	**Notes**
Capacity	11,277,464	19,641,678	19,641,678	-43%	1
Condition	7,928,155	14,262,983	14,262,983	-44%	2
Facilities	5,996,287	4,599,326	4,599,326	30%	3
Forced	43,202,649	39,772,118	39,772,118	9%	
Meter Related	2,633,742	1,853,704	1,853,704	42%	4
New Business	22,037,384	16,807,022	16,807,022	31%	5
Other	5,856,818	8,765,923	8,765,923	-33%	6
Reliability	37,581,268	39,760,817	39,760,817	-5%	
Street Light	704,961	1,112,376	1,112,376	-37%	7
Tools & Equip	2,832,493	1,222,115	1,222,115	132%	8
Vegetation Mgt.	13,666,078	16,535,002	16,535,002	-17%	9
Met-Ed Total	**$153,717,299**	**$164,333,062**	**$164,333,062**		

Penelec T&D Capital – 2021 ($)					
Category	**2021 Actuals**	**2021 Budget**	**Annual Budget**	**Variance %**	**Notes**
Capacity	250,414	1,137,596	1,137,596	-78%	10
Condition	10,155,952	9,374,740	9,374,740	8%	
Facilities	3,196,863	1,842,946	1,842,946	73%	11
Forced	60,754,588	55,493,013	55,493,013	9%	
Meter Related	2,244,591	821,818	821,818	173%	4
New Business	14,684,378	12,826,889	12,826,889	14%	5
Other	7,518,835	18,317,725	18,317,725	-59%	12
Reliability	34,161,913	36,441,024	36,441,024	-6%	
Street Light	3,246,433	4,041,894	4,041,894	-20%	13
Tools & Equip	510,475	3,359,782	3,359,782	-85%	14
Vegetation Mgt.	14,769,808	17,411,516	17,411,516	-15%	15
Penelec Total	**$151,494,251**	**$161,068,943**	**$161,068,943**		

Penn Power T&D Capital – 2021 ($)					
Category	**2021 Actuals**	**2021 Budget**	**Annual Budget**	**Variance %**	**Notes**
Capacity	526,072	42,247	42,247	1145%	16
Condition	787,016	1,630,032	1,630,032	-52%	17
Facilities	1,504,038	2,878,281	2,878,281	-48%	18
Forced	8,240,768	7,429,486	7,429,486	11%	19
Meter Related	768,255	589,262	589,262	30%	20
New Business	5,539,500	6,128,800	6,128,800	-10%	21
Other	2,362,583	1,709,483	1,709,483	38%	22
Reliability	21,702,054	19,993,080	19,993,080	9%	
Street Light	438,054	639,087	639,087	-31%	23
Tools & Equip	665,033	116,581	116,581	470%	24
Vegetation Mgt.	2,561,965	3,893,721	3,893,721	-34%	15
Penn Power Total	**$45,095,337**	**$45,050,062**	**$45,050,062**		

West Penn Power T&D Capital – 2021 ($)					
Category	**2021 Actuals**	**2021 Budget**	**Annual Budget**	**Variance %**	**Notes**
Capacity	51,142,697	31,422,982	31,422,982	63%	11
Condition	14,587,612	18,983,127	18,983,127	-23%	25
Facilities	8,415,867	2,065,361	2,065,361	307%	26
Forced	58,115,864	53,911,936	53,911,936	8%	
Meter Related	1,927,341	1,372,184	1,372,184	40%	4
New Business	23,337,571	31,349,040	31,349,040	-26%	27
Other	(4,139,731)	11,759,971	11,759,971	-135%	28
Reliability	37,881,590	36,991,154	36,991,154	2%	
Street Light	1,737,228	2,299,815	2,299,815	-24%	29
Tools & Equip	4,724,388	3,229,737	3,229,737	46%	30
Vegetation Mgt.	22,636,841	27,755,805	27,755,805	-18%	31
West Penn Power Total	**$220,367,269**	**$221,141,112**	**$221,141,112**		

Variance Explanations (Variances 10% or greater)	
1	Under budget due to delays in construction and work scope for new substations.
2	Under budget due to unscheduled overhead and underground repairs being less than planned.
3	Over budget due to timing of several facilities projects.
4	Over budget due to meter and smart meter exchanges greater than planned
5	Over budget due to new commercial and residential business requests being greater than planned.
6	Under budget due to lower smart meter expenses and less labor then planned.
7	Under budget due to streetlight replacements being less than planned.
8	Over budget due to mobile data terminal purchases and customer system improvement initiatives being greater than planned.
9	Under budget due to planned vegetation management being less than planned.
10	Under budget due to East Towanda-115kV Bus Conversion being less than planned.
11	Over budget due to timing differences in several construction projects.
12	Under budget due to joint use make ready work being less than planned. Investment category contains an Emergent Projects budget placeholder which contributes to the underrun. Actual costs occur in other investment categories such as Failures and New Business.
13	Under budget due to LED conversion and new LED project being less than planned.
14	Under budget due to PA state radio project being less than planned.
15	Under budget due to vegetation management planned distribution being less than planned.
16	Over budget due to labor, materials, and overhead expense being greater than planned.
17	Under budget due to labor expense being less than planned.
18	Under budget due to contractor expense being less than planned.
19	Over budget due to forced failures and storm expense being greater than planned.
20	Over budget due to material expense being greater than planned.
21	Under budget due to material expenses being less than planned.
22	Over budget due to contractor expenses being greater than planned.
23	Under budget due to labor and overheads being less than planned.
24	Over budget due to material, contractors, and overheads being greater than planned.
25	Under budget due to transmission condition projects contractor, labor, and material spend being less than planned.
26	Over budget due to facility contractor projects being done at numerous locations being greater than planned.
27	Under budget due to commercial and industrial new business being less than planned.
28	Under budget due to remittance of a damage claim on transmission assets at Cranberry Wylie Ridge 500kV.
29	Under budget due to new streetlight installs labor, materials, and contractors being less than planned.
30	Over budget due to contractor expenses being greater than planned.
31	Under budget due to distribution and transmission vegetation management spend being less 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 – 2022 Goals / Objectives

T&D Inspection & Maintenance Programs - 2022				
Program/Project	**Met-Ed**	**Penelec**	**Penn Power**	**West Penn**
Forestry				
Transmission (Miles)	258.79	441.62	61.75	308.61
Distribution (Miles)	2,905	3,780	1,113	4,606
Transmission				
Aerial Patrols	2	2	2	2
Groundline (Poles)	0	3,102	0	642
Substation				
Substation Inspections Class A	418	782	148	938
Substation Inspections Class B	418	782	148	938
Substation Inspections Class C	1,672	3,128	592	3,752
Transformers	137	397	11	343
Breakers	71	346	12	379
Relay Schemes	218	177	26	44
Distribution				
Capacitors	4,823	8,681	963	1,316
Poles	45,000	41,584	10,802	55,344
Reclosers	1,355	2,588	985	4,077
Radio-Controlled Switches (2 / year)	1,450	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.

2021 T&D O&M Budget[11]

Met-Ed T&D O&M - Annual 2022 ($)		
Transmission		
Category		**Annual Budget**
560	Operation Supervision & Engineering	0
561	Load Dispatching	86,033
563	Overhead Line Expenses	33,112
565	Transmission of Electricity by Others	9,654,000
566	Miscellaneous Transmission Expenses	(21,334)
567	Rents	50,637
568	Maintenance Supervision and Engineering	(0)
569	Maintenance of Structures	0
570	Maintenance of Station Equipment	106,418
571	Maintenance of Overhead Lines	0
573	Maintenance of Miscellaneous Transmission Plant	0
575	Market Administration, Monitoring & Compliance Services	0
Transmission Total		**$9,908,866**
Distribution		
Category		**Annual Budget**
580	Operation Supervision & Engineering	219,140
581	Load Dispatching	242,073
582	Station Expenses	474,651
583	Overhead Line Expenses	237,277
584	Underground Line Expenses	0
586	Meter Expenses	676,445
588	Miscellaneous Distribution Expenses	6,355,935
589	Rents	497,655
590	Maintenance Supervision and Engineering	680,780
591	Maintenance of Structures	83,644
592	Maintenance of Station Equipment	6,756,386
593	Maintenance of Overhead Lines	44,032,142
594	Maintenance of Underground Lines	2,823,132
595	Maintenance of Line Transformers	0
596	Maintenance of Street Lighting and Signal Systems	246,884
597	Maintenance of Meters	3,152,579
598	Maintenance of Miscellaneous Distribution Plant	2,426,181
Distribution Total		**$68,904,905**
Met-Ed Total		**$78,813,770**

[11] Budgets are subject to change.

Penelec T&D O&M - Annual 2022 ($)		
Transmission		
Category		**Annual Budget**
560	Operation Supervision & Engineering	0
561	Load Dispatching	234,301
562	Station Expenses	208,444
563	Overhead Line Expenses	208,818
565	Transmission of Electricity by Others	33,165,600
566	Miscellaneous Transmission Expenses	0
567	Rents	422,815
568	Maintenance Supervision and Engineering	0
569	Maintenance of Structures	0
570	Maintenance of Station Equipment	0
571	Maintenance of Overhead Lines	0
573	Maintenance of Miscellaneous Transmission Plant	0
575	Market Administration, Monitoring & Compliance Services	0
Transmission Total		**$34,239,978**
Distribution		
Category		**Annual Budget**
580	Operation Supervision & Engineering	900,204
581	Load Dispatching	315,612
583	Overhead Line Expenses	91,827
584	Underground Line Expenses	970,299
586	Meter Expenses	1,033,104
588	Miscellaneous Distribution Expenses	8,762,948
589	Rents	1,849,197
590	Maintenance Supervision and Engineering	744,555
592	Maintenance of Station Equipment	7,507,546
593	Maintenance of Overhead Lines	42,625,469
594	Maintenance of Underground Lines	169,587
596	Maintenance of Street Lighting and Signal Systems	1,275,148
597	Maintenance of Meters	4,041,931
598	Maintenance of Miscellaneous Distribution Plant	309,871
Distribution Total		**$70,597,297**
Penelec Total		**$104,837,275**

Penn Power T&D O&M - Annual 2022 ($)		
Transmission		
Category		**Annual Budget**
560	Operation Supervision & Engineering	1,507
561	Load Dispatching	6,715
562	Station Expenses	(345)
563	Overhead Line Expenses	(600)
565	Transmission of Electricity by Others	4,249,620
566	Miscellaneous Transmission Expenses	0
568	Maintenance Supervision and Engineering	13,611
569	Maintenance of Structures	170
570	Maintenance of Station Equipment	3,047
571	Maintenance of Overhead Lines	88,716
575	Market Administration, Monitoring & Compliance Services	0
Transmission Total		**$4,362,441**
Distribution		
Category		**Annual Budget**
580	Operation Supervision & Engineering	0
582	Station Expenses	0
584	Underground Line Expenses	509,901
586	Meter Expenses	71,193
588	Miscellaneous Distribution Expenses	492,933
589	Rents	330,437
590	Maintenance Supervision and Engineering	191,267
592	Maintenance of Station Equipment	1,252,488
593	Maintenance of Overhead Lines	13,184,266
594	Maintenance of Underground Lines	70,346
596	Maintenance of Street Lighting and Signal Systems	26,801
597	Maintenance of Meters	618,332
598	Maintenance of Miscellaneous Distribution Plant	(37,222)
Distribution Total		**$16,710,743**
Penn Power Total		**$21,073,184**

West Penn Power T&D O&M - Annual 2022 ($)		
Transmission		
Category		**Annual Budget**
560	Operation Supervision & Engineering	53,707
561	Load Dispatching	1,253,078
562	Station Expenses	1,312,501
563	Overhead Line Expenses	24,133
565	Transmission of Electricity by Others	60,074,862
566	Miscellaneous Transmission Expenses	931,051
567	Rents	671,982
568	Maintenance Supervision and Engineering	822,079
569	Maintenance of Structures	13,751
570	Maintenance of Station Equipment	3,087,471
571	Maintenance of Overhead Lines	9,843,725
573	Maintenance of Miscellaneous Transmission Plant	317,400
575	Market Administration, Monitoring & Compliance Services	0
Transmission Total		**$78,405,739**
Distribution		
Category		**Annual Budget**
580	Operation Supervision & Engineering	37,989
581	Load Dispatching	2,152,855
582	Station Expenses	845,173
583	Overhead Line Expenses	1,224,329
584	Underground Line Expenses	1,375,000
586	Meter Expenses	1,649,799
588	Miscellaneous Distribution Expenses	13,317,745
590	Maintenance Supervision and Engineering	1,211,307
592	Maintenance of Station Equipment	8,262,087
593	Maintenance of Overhead Lines	45,294,879
594	Maintenance of Underground Lines	1,180,965
595	Maintenance of Line Transformers	0
596	Maintenance of Street Lighting and Signal Systems	832,557
597	Maintenance of Meters	2,238,996
598	Maintenance of Miscellaneous Distribution Plant	136,687
Distribution Total		**$79,760,367**
West Penn Power Total		**$158,166,106**

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.

2021 T&D Capital Budget[12]

Met-Ed T&D Capital - Annual 2022 ($)	
Category	**Annual Budget**
Capacity	10,130,266
Condition	13,201,403
Facilities	78,509
Forced	41,352,480
Meter Related	1,220,265
New Business	19,520,780
Other	11,809,561
Reliability	61,484,571
Street Light	741,648
Tools & Equip	1,480,642
Vegetation Management	16,936,082
Met-Ed Total	**$177,956,208**

Penelec T&D Capital - Annual 2022 ($)	
Category	**Annual Budget**
Capacity	0
Condition	9,361,442
Facilities	81,246
Forced	54,411,120
Meter Related	871,605
New Business	12,690,370
Other	28,394,402
Reliability	44,486,093
Street Light	3,212,819
Tools & Equip	2,304,300
Vegetation Management	17,436,485
Penelec Total	**$173,249,881**

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

Penn Power T&D Capital - Annual 2022 ($)	
Category	**Annual Budget**
Capacity	2,161
Condition	651,221
Facilities	24,835
Forced	10,609,555
Meter Related	628,161
New Business	8,105,637
Other	3,784,979
Reliability	11,819,638
Street Light	678,858
Tools & Equip	255,119
Vegetation Management	2,890,784
Penn Power Total	**$39,450,948**

West Penn Power T&D Capital - Annual 2022 ($)	
Category	**Annual Budget**
Capacity	6,066,404
Condition	16,547,775
Facilities	98,453
Forced	39,781,136
Meter Related	1,408,225
New Business	27,378,885
Other	13,064,903
Reliability	63,035,232
Street Light	2,352,817
Tools & Equip	3,140,666
Vegetation Management	25,861,448
West Penn Power Total	**$198,735,944**

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 2021, the Companies made no significant revisions to their Inspection and Maintenance practices.

ATTACHMENT A

Worst Performing Circuits – Remedial Actions

Met-Ed				
Substation	**Circuit**	**District**	**Customers**	**Outages**
No Bangor	00826-3	Easton	3,258	178
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	4.02	Trees Off Row-Tree	73%	1Q 2021
SAIDI	706.90	Equipment Failure	11%	2Q 2021
SAIFI	1.95	Line Failure	5%	3Q 2021
CAIDI	362	All Other	12%	4Q 2021
Customer Minutes	2,303,091			
Customers Affected	6,369			
Remedial Action Planned or Taken			**Status**	**Progress**
Construct circuit tie Phase 1			Complete	May-21
Overhead circuit inspection			Complete	Aug-21
Construct circuit tie Phase 2			Complete	Aug-21
Construct circuit tie Phase 3			Complete	Aug-21
Mainline 34.5 kV forestry aerial patrol			Complete	Jul-21
On cycle tree trimming			To be completed 2022	0%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Huffs Church	00600-1	Boyertown	1,603	145
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	3.52	Trees Off Row-Tree	78%	1Q 2021
SAIDI	1,259.35	Trees Off Row-Limb	11%	2Q 2021
SAIFI	2.81	Trees - Sec/Service	3%	3Q 2021
CAIDI	449	All Other	8%	4Q 2021
Customer Minutes	2,018,740			
Customers Affected	4,497			
Remedial Action Planned or Taken			**Status**	**Progress**
On cycle tree trimming			Complete	Dec-20
Install Supervisory Control and Data Acquisition (SCADA) switch			Complete	Apr-21
Repair/Replace high priority items from overhead circuit inspection			Complete	Apr-21
Targeted forestry inspection			Complete	Aug-21
Targeted forestry inspection (Maryann Drive)			Complete	Sep-21
Targeted tree trimming (Maryann Drive)			Complete	Nov-21
Targeted forestry inspection			To be completed 2022	0%

Met-Ed				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Lynnville	00737-1	Hamburg	1,075	158
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.91	Trees Off Row-Tree	84%	1Q 2021
SAIDI	1,549.88	Equipment Failure	3%	2Q 2021
SAIFI	3.86	Unknown	3%	3Q 2021
CAIDI	402	All Other	9%	4Q 2021
Customer Minutes	1,666,117			
Customers Affected	4,147			
Remedial Action Planned or Taken			**Status**	**Progress**
Targeted forestry inspection			Complete	Nov-20
Target tree trimming (Sousley Rd)			Complete	Aug-21
Install Supervisory Control and Data Acquisition (SCADA)			To be completed 2022	50%
Targeted forestry inspection			To be completed 2022	0%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Flying Hills	00777-1	Reading	1,789	59
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.25	Trees Off Row-Tree	64%	1Q 2021
SAIDI	721.89	Vehicle	19%	2Q 2021
SAIFI	2.88	Trees On Row	5%	3Q 2021
CAIDI	251	All Other	11%	4Q 2021
Customer Minutes	1,291,458			
Customers Affected	5,155			
Remedial Action Planned or Taken			**Status**	**Progress**
Install TripSaver Recloser #1			Complete	Dec-20
Install TripSaver Recloser #2			Complete	Dec-20
Install TripSaver Recloser #3			Complete	Dec-20
Repair/Replace high priority items from overhead circuit inspection			Complete	May-21
Install Supervisory Control and Data Acquisition (SCADA) switch (4 devices)			To be completed 2022	75%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Mountain	00744-4	Dillsburg	1,794	109
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.97	Trees Off Row-Tree	67%	1Q 2021
SAIDI	630.34	Vehicle	15%	2Q 2021
SAIFI	2.62	Forced Outage	11%	3Q 2021
CAIDI	241	All Other	7%	4Q 2021
Customer Minutes	1,130,837			
Customers Affected	4,695			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair/Replace high priority items from overhead circuit inspection			Complete	Feb-21
On cycle tree trimming			To be Completed 2022	0%
Circuit Rehabilitation Zone 2			To be Completed 2022	25%

Met-Ed				
Substation	**Circuit**	**District**	**Customers**	**Outages**
W Boyertown	00715-1	Boyertown	1,696	60
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.68	Trees Off Row-Tree	65%	1Q 2021
SAIDI	567.78	Human Error - Company	19%	2Q 2021
SAIFI	2.96	Unknown	7%	3Q 2021
CAIDI	192	All Other	10%	4Q 2021
Customer Minutes	962,956			
Customers Affected	5,019			
Remedial Action Planned or Taken			**Status**	**Progress**
Mainline recloser upgrade and circuit coordination improvements			Complete	Jan-21
Overhead circuit inspection			Complete	Apr-21
On cycle tree trimming			Complete	Jul-21
Targeted tree trimming investigation			Complete	Oct-21
Targeted forestry inspections (Old State Rd & Long Lane)			To be completed 2022	0%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Violet Hill	00527-4	York	1,271	25
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.64	Trees Off Row-Tree	30%	1Q 2021
SAIDI	737.65	Trees Off Row-Limb	29%	2Q 2021
SAIFI	4.98	Unknown	16%	3Q 2021
CAIDI	148	All Other	25%	4Q 2021
Customer Minutes	937,557			
Customers Affected	6,332			
Remedial Action Planned or Taken			**Status**	**Progress**
On cycle tree trimming			Complete	May-21
Joint Planning meeting with AEC for Potential SCADA/Sectionalizing devices			Complete	Sep-21
Install additional Supervisory Control and Data Acquisition (SCADA) (3 Devices)			To be completed 2022	0%
Circuit Rehabilitation from AEC Metering Point up to upstream recloser			To be completed 2022	0%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Pleasantville	00142-1	Boyertown	819	80
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.54	Trees Off Row-Tree	67%	1Q 2021
SAIDI	1,078.30	Human Error - Company	15%	2Q 2021
SAIFI	3.93	Equipment Failure	4%	3Q 2021
CAIDI	275	All Other	14%	4Q 2021
Customer Minutes	883,131			
Customers Affected	3,216			
Remedial Action Planned or Taken			**Status**	**Progress**
Targeted forestry inspections (Haas Ln & Mine Rd)			Complete	Jun-21
Targeted tree trimming (Haas Ln)			Complete	Jul-21
Targeted tree trimming investigation			Complete	Nov-21
Targeted tree trimming			Complete	Dec-21
Overhead circuit inspection			Complete	Jan-22

Met-Ed				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Swatara Hill	00763-2	Lebanon	1,539	63
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.12	Trees Off Row-Tree	54%	1Q 2021
SAIDI	417.93	Equipment Failure	23%	2Q 2021
SAIFI	2.53	Forced Outage	11%	3Q 2021
CAIDI	165	All Other	11%	4Q 2021
Customer Minutes	643,198			
Customers Affected	3,901			
Remedial Action Planned or Taken			**Status**	**Progress**
Install Supervisory Control and Data Acquisition (SCADA) device #1			Complete	Aug-21
Install Supervisory Control and Data Acquisition (SCADA) device #2			Complete	Aug-21
Install Supervisory Control and Data Acquisition (SCADA) device #3			Complete	Aug-21
Targeted forestry inspection			Complete	Nov-21
On cycle tree trimming			To be completed 2022	0%
Substation	**Circuit**	**District**	**Customers**	**Outages**
No Bangor	00813-3	Easton	1,325	35
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.11	Trees Off Row-Tree	41%	1Q 2021
SAIDI	481.89	Human Error -Non-Company	30%	2Q 2021
SAIFI	1.62	Vehicle	12%	3Q 2021
CAIDI	297	All Other	18%	4Q 2021
Customer Minutes	638,510			
Customers Affected	2,149			
Remedial Action Planned or Taken			**Status**	**Progress**
Mainline 34.5 kV forestry aerial patrol			Complete	Jul-21
Repair priority items from thermovision inspection			Complete	Oct-21
Overhead circuit inspection			Complete	Nov-21
Replace backlog poles (8 poles)			Complete	Dec-21

Penelec				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Madera	00166-22	Philipsburg	1,385	61
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	5.87	Trees Off Row-Tree	97%	1Q 2021
SAIDI	2,457.94	Equipment Failure	1%	2Q 2021
SAIFI	5.27	Lightning	1%	3Q 2021
CAIDI	466.78	All Other	1%	4Q 2021
Customer Minutes	3,404,251			
Customers Affected	7,293			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Mar-21
Repair damage caused by trees during a storm			Complete	May-21
Repair damage caused by trees during a storm			Complete	Aug-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Grover	00527-63	Towanda	1,053	88
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	4.85	Equipment Failure	36%	1Q 2021
SAIDI	2,670.50	Trees Off Row-Limb	31%	2Q 2021
SAIFI	7.02	Trees Off Row-Tree	15%	3Q 2021
CAIDI	380.31	All Other	18%	4Q 2021
Customer Minutes	2,812,034			
Customers Affected	7,394			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Jan-21
Install advanced Dx protective devices			Complete	May-21
Targeted circuit rehabilitation			Complete	Jun-21
Repair equipment failure			Complete	Jun-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Dubois	00137-23	Dubois	3,072	135
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	4.58	Trees Off Row-Tree	87%	1Q 2021
SAIDI	865.65	Forced Outage	6%	2Q 2021
SAIFI	2.95	Unknown	2%	3Q 2021
CAIDI	293.00	All Other	5%	4Q 2021
Customer Minutes	2,659,283			
Customers Affected	9,076			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Mar-21
Repair damage caused by trees during a storm			Complete	Apr-21
Repair damage caused by trees during a storm			Complete	Aug-21
Install advanced Dx protective devices			Complete	Aug-21

Penelec				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Russell Hill	00282-65	Montrose	1,005	75
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	3.73	Trees Off Row-Tree	43%	1Q 2021
SAIDI	2,155.87	Wind	38%	2Q 2021
SAIFI	3.97	Equipment Failure	14%	3Q 2021
CAIDI	543.02	All Other	6%	4Q 2021
Customer Minutes	2,166,652			
Customers Affected	3,990			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Mar-21
Repair damage caused by wind			Complete	Apr-21
Repair damage caused by trees during a storm			Complete	May-21
Install advanced Dx protective devices			Complete	Jun-21
Repair equipment failure			Complete	Oct-21
Repair damage caused by wind			Complete	Dec-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Saxton Sub	00625-73	Altoona	861	35
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	3.42	Trees Off Row-Tree	81%	1Q 2021
SAIDI	2,304.08	Equipment Failure	9%	2Q 2021
SAIFI	5.76	Vehicle	6%	3Q 2021
CAIDI	400.20	All Other	3%	4Q 2021
Customer Minutes	1,983,810			
Customers Affected	4,957			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Jan-21
Repair equipment failure			Complete	Feb-21
Repair damage caused by trees			Complete	Aug-21
Repair damage caused by trees during a storm			Complete	Sep-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Falls	00297-65	Montrose	757	31
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.95	Trees Off Row-Tree	88%	1Q 2021
SAIDI	2,260.06	Ice	4%	2Q 2021
SAIFI	3.76	Unknown	3%	3Q 2021
CAIDI	600.30	All Other	5%	4Q 2021
Customer Minutes	1,710,862			
Customers Affected	2,850			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by ice			Complete	Jan-21
Repair damage caused by trees during a storm			Complete	Mar-21
Repair damage caused by trees during a storm			Complete	Jul-21

Penelec				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Marienville	00328-51	Oil City	1,206	47
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.54	Trees Off Row-Tree	90%	1Q 2021
SAIDI	1,219.81	Lightning	5%	2Q 2021
SAIFI	2.69	Line Failure	2%	3Q 2021
CAIDI	453.76	All Other	3%	4Q 2021
Customer Minutes	1,471,086			
Customers Affected	3,242			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Mar-21
Install advanced Dx protective devices			Complete	Oct-21
Repair Damage caused by trees			Complete	Dec-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Revloc	00069-72	Altoona	560	6
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.06	Trees Off Row-Tree	94%	1Q 2021
SAIDI	2,130.06	Trees Off Row-Limb	6%	2Q 2021
SAIFI	4.04	Lightning	1%	3Q 2021
CAIDI	527.34	All Other	0%	4Q 2021
Customer Minutes	1,192,833			
Customers Affected	2,262			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Feb-21
Repair damage caused by trees during a storm			Complete	Mar-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Tiffany	00435-65	Montrose	1,623	57
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.05	Trees Off Row-Tree	34%	1Q 2021
SAIDI	733.77	Lightning	33%	2Q 2021
SAIFI	4.78	Line Failure	16%	3Q 2021
CAIDI	153.47	All Other	17%	4Q 2021
Customer Minutes	1,190,908			
Customers Affected	7,760			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by lightning			Complete	Jun-21
Repair damage caused by trees during a storm			Complete	Jul-21
Circuit inspection			Complete	Oct-21

Penelec				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Warren South	00220-41	Warren	2,730	82
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.99	Trees Off Row-Tree	58%	1Q 2021
SAIDI	423.21	Forced Outage	12%	2Q 2021
SAIFI	3.23	Line Failure	10%	3Q 2021
CAIDI	130.86	All Other	20%	4Q 2021
Customer Minutes	1,155,371			
Customers Affected	8,829			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Jul-21
Repaired line failure			Complete	Nov-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Piney	00523-51	Oil City	1,503	82
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.92	Trees Off Row-Tree	36%	1Q 2021
SAIDI	741.59	Equipment Failure	18%	2Q 2021
SAIFI	6.26	Line Failure	14%	3Q 2021
CAIDI	118.45	All Other	32%	4Q 2021
Customer Minutes	1,114,604			
Customers Affected	9,410			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair line failure			Complete	Mar-21
Repaired equipment failure			Complete	Dec-21
Targeted circuit rehabilitation			To be Completed 2022	35%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Tunkhannock	00533-65	Montrose	1,245	80
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.79	Trees Off Row-Tree	45%	1Q 2021
SAIDI	833.97	Unknown	24%	2Q 2021
SAIFI	3.72	Equipment Failure	14%	3Q 2021
CAIDI	224.01	All Other	1%	4Q 2021
Customer Minutes	1,038,294			
Customers Affected	4,635			
Remedial Action Planned or Taken			**Status**	**Progress**
Restore recloser operation of unknown cause			Complete	Jun-21
Install advanced Dx protective devices			Complete	Jun-21
Repair damage caused by trees during a storm			Complete	Oct-21

Penelec				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Fallen Timbers	00995-22	Philipsburg	755	26
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.77	Trees Off Row-Tree	43%	1Q 2021
SAIDI	1,362.30	Line Failure	30%	2Q 2021
SAIFI	6.47	Trees Off Row-Limb	22%	3Q 2021
CAIDI	210.59	All Other	6%	4Q 2021
Customer Minutes	1,028,536			
Customers Affected	4,884			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Mar-21
Repair damage caused by trees during a storm			Complete	May-21
Repair line failure			Complete	May-21
Repair line failure			Complete	Nov-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
N Meshoppen Tran	00534-65	Montrose	844	82
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.71	Trees Off Row-Tree	71%	1Q 2021
SAIDI	1,176.95	Lightning	15%	2Q 2021
SAIFI	2.11	Equipment Failure	5%	3Q 2021
CAIDI	558.37	All Other	9%	4Q 2021
Customer Minutes	993,349			
Customers Affected	1,779			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Jan-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Rolling Meadows	00310-31	Erie	4,031	48
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.68	Human Error - Company	51%	1Q 2021
SAIDI	242.50	Line Failure	24%	2Q 2021
SAIFI	2.57	Equipment Failure	9%	3Q 2021
CAIDI	94.21	All Other	15%	4Q 2021
Customer Minutes	977,503			
Customers Affected	10,376			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by human error-company			Complete	Mar-21
Repair line failure			Complete	Sep-21
Repair line failure			Complete	Dec-21

Penelec				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Cranberry	00350-51	Oil City	1,072	29
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.67	Line Failure	44%	1Q 2021
SAIDI	904.76	Trees Off Row-Tree	33%	2Q 2021
SAIFI	4.65	Equipment Failure	12%	3Q 2021
CAIDI	194.68	All Other	12%	4Q 2021
Customer Minutes	969,898			
Customers Affected	4,982			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Mar-21
Repair equipment failure			Complete	Jun-21
Repair line failure			Complete	Oct-21
Repair line failure			Complete	Dec-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Springboro	00237-52	Meadville	2,756	84
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.66	Equipment Failure	30%	1Q 2021
SAIDI	349.85	Line Failure	30%	2Q 2021
SAIFI	2.80	Trees Off Row-Tree	17%	3Q 2021
CAIDI	125.01	All Other	22%	4Q 2021
Customer Minutes	964,190			
Customers Affected	7,713			
Remedial Action Planned or Taken			**Status**	**Progress**
Circuit inspection			Complete	May-21
Repair equipment failure			Complete	Aug-21
Install advanced Dx protective devices			Complete	Oct-21
Repair line failure			Complete	Oct-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Madera	00165-22	Philipsburg	1,516	34
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.59	Equipment Failure	54%	1Q 2021
SAIDI	608.05	Lightning	22%	2Q 2021
SAIFI	3.49	Trees Off Row-Tree	18%	3Q 2021
CAIDI	174.06	All Other	6%	4Q 2021
Customer Minutes	921,811			
Customers Affected	5,296			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair equipment failure			Complete	Mar-21
Repair line failure			Complete	Jun-21
Repair damage caused by trees during a storm			Complete	Oct-21

Penelec				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Meshoppen	00283-65	Montrose	386	16
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.33	Trees Off Row-Tree	64%	1Q 2021
SAIDI	1,997.55	Unknown	15%	2Q 2021
SAIFI	2.83	Forced Outage	8%	3Q 2021
CAIDI	706.09	All Other	14%	4Q 2021
Customer Minutes	771,055			
Customers Affected	1,092			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees			Complete	Mar-21
Restore fuse operation of unknown cause			Complete	Jan-21
Repair damage caused by trees during a storm			Complete	May-21
Circuit inspection			Complete	Jun-21
Repair damage caused by trees			Complete	Oct-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Wyalusing Sub	00532-62	Towanda	748	66
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.18	Ice	39%	1Q 2021
SAIDI	914.45	Trees Off Row-Tree	33%	2Q 2021
SAIFI	4.95	Equipment Failure	11%	3Q 2021
CAIDI	184.72	All Other	17%	4Q 2021
Customer Minutes	684,011			
Customers Affected	3,703			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by ice			Complete	Jan-21
Repair damage caused by trees during a storm			Complete	Mar-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Spangler Sub	00052-72	Altoona	1,495	16
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.17	Trees Off Row-Tree	73%	1Q 2021
SAIDI	455.27	Trees Off Row-Limb	26%	2Q 2021
SAIFI	3.09	Equipment Failure	1%	3Q 2021
CAIDI	147.36	All Other	1%	4Q 2021
Customer Minutes	680,636			
Customers Affected	4,619			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Mar-21
Repair damage caused by trees during a storm			Complete	Dec-21

Penelec				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Greenwood	00041-71	Altoona	1,214	20
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.15	Wind	47%	1Q 2021
SAIDI	549.27	Trees Off Row-Tree	43%	2Q 2021
SAIFI	2.16	Forced Outage	8%	3Q 2021
CAIDI	254.41	All Other	3%	4Q 2021
Customer Minutes	666,815			
Customers Affected	2,621			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by wind			Complete	Mar-21
Repair damage caused by trees during a storm			Complete	May-21
Circuit inspection			Complete	Oct-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Blairsville East	00080-13	Indiana	1,518	32
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.08	Trees Off Row-Tree	69%	1Q 2021
SAIDI	413.48	Vehicle	16%	2Q 2021
SAIFI	4.32	Equipment Failure	8%	3Q 2021
CAIDI	95.74	All Other	7%	4Q 2021
Customer Minutes	627,658			
Customers Affected	6,556			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by a vehicle			Complete	Mar-21
Targeted circuit rehabilitation			Complete	May-21
Repair damage caused by trees during a storm			Complete	Jul-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Natl Forge Sw Sta	00577-41	Warren	1,103	58
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.05	Trees Off Row-Tree	75%	1Q 2021
SAIDI	550.93	Unknown	17%	2Q 2021
SAIFI	3.45	Equipment Failure	6%	3Q 2021
CAIDI	159.87	All Other	3%	4Q 2021
Customer Minutes	607,671			
Customers Affected	3,801			
Remedial Action Planned or Taken			**Status**	**Progress**
Install advanced Dx protective devices			Complete	Apr-21
Repair damage caused by trees during a storm			Complete	Jun-21
Circuit inspection			Complete	Sep-21
Repair damage caused by trees during a storm			Complete	Dec-21

Penelec				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Crown	00519-51	Oil City	645	69
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.03	Trees Off Row-Tree	70%	1Q 2021
SAIDI	922.07	Equipment Failure	11%	2Q 2021
SAIFI	2.74	Trees Off Row-Limb	6%	3Q 2021
CAIDI	336.96	All Other	13%	4Q 2021
Customer Minutes	594,732			
Customers Affected	1,765			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Mar-21
Repair damage caused by trees during a storm			Complete	Jun-21
On cycle tree trimming			Complete	Dec-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Philipsburg	00162-22	Philipsburg	2,713	60
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	0.89	Trees Off Row-Tree	60%	1Q 2021
SAIDI	189.87	Line Failure	21%	2Q 2021
SAIFI	1.69	Equipment Failure	8%	3Q 2021
CAIDI	112.20	All Other	11%	4Q 2021
Customer Minutes	515,127			
Customers Affected	4,591			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Mar-21
Repair line failure			Complete	Nov-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
N Meshoppen Tran	00530-65	Montrose	497	31
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	0.88	Trees Off Row-Tree	72%	1Q 2021
SAIDI	1,029.54	Equipment Failure	11%	2Q 2021
SAIFI	4.88	Trees Off Row-Limb	6%	3Q 2021
CAIDI	211.09	All Other	11%	4Q 2021
Customer Minutes	511,679			
Customers Affected	2,424			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees during a storm			Complete	Mar-21
Repair equipment failure			Complete	Oct-21
Repair damage caused by trees during a storm			Complete	Dec-21

Penelec				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Shawville	00151-21	Clearfield	2,248	34
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	0.80	Equipment Failure	41%	1Q 2021
SAIDI	205.82	Trees Off Row-Tree	25%	2Q 2021
SAIFI	3.43	Lightning	20%	4Q 2021
CAIDI	59.97	All Other	14%	
Customer Minutes	462,680			
Customers Affected	7,715			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees			Complete	Mar-21
Repair equipment damage			Complete	Mar-21
Repair damage caused by lightning			Complete	Aug-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
East Towanda	00525-62	Towanda	654	47
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	0.80	Trees Off Row-Tree	43%	1Q 2021
SAIDI	706.94	Unknown	26%	2Q 2021
SAIFI	1.78	Wind	13%	3Q 2021
CAIDI	396.52	All Other	18%	4Q 2021
Customer Minutes	462,340			
Customers Affected	1,166			
Remedial Action Planned or Taken			**Status**	**Progress**
Restore fuse operation of unknown cause			Complete	Jan-21
Repair damage caused by wind			Complete	Mar-21
Repair damage caused by trees during a storm			Complete	Jul-21
Repair damage caused by trees during a storm			Complete	Dec-21

Penn Power
Penn Power had no circuits that appeared on the Worst Performing Circuit list all four quarters of 2021.

West Penn Power				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Avella	W Middletown	Washington	1,057	90
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	5	Trees off ROW	64%	Q1 2021
SAIDI	3,444	Vehicle	11%	Q2 2021
SAIFI	7.3	Line Failure	10%	Q3 2021
CAIDI	472	All Other	15%	Q4 2021
Customer Minutes	3,639,856			
Customers Affected	7,713			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by a tree during a storm			Complete	Mar-21
On cycle tree trimming			Complete	Jun-21
Repair damage caused by a tree during a storm			Complete	Jun-21
Repair damage caused by a vehicle			Complete	Jul-21
Repair damage caused by wind during a storm			Complete	Oct-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Rutan	Bristoria	Jefferson	1126	88
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.4	Trees off ROW	61%	Q1 2021
SAIDI	1,509	Unknown	20%	Q2 2021
SAIFI	2.62	Line Failure	13%	Q3 2021
CAIDI	575	All Other	6%	Q4 2021
Customer Minutes	1,699,465			
Customers Affected	2,955			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair line failure			Complete	Mar-21
Restore unknown outage during a storm			Complete	Jun-21
Repair damage caused by a tree during a storm			Complete	Aug-21
Restore unknown outage			Complete	Dec-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Karns City	Kaylor	Butler	1,152	38
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.1	Trees off ROW	87%	Q1 2021
SAIDI	1,310	Line Failure	10%	Q2 2021
SAIFI	2.69	Unknown	1%	Q3 2021
CAIDI	486	All Other	2%	Q4 2021
Customer Minutes	1,508,698			
Customers Affected	3,104			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by a tree during a storm			Complete	Mar-21
Zone 1 Infrared Inspection			Complete	Jun-21
Repair damage caused by a tree during a storm			Complete	Apr-21
Repair line failure			Complete	Sep-21
Restore unknown outage			Complete	Oct-21

West Penn Power				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Vandergrift	Grifflo Park	Arnold	2735	56
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2	Trees off ROW	85%	Q1 2021
SAIDI	522	Human Error-Company	8%	Q2 2021
SAIFI	3.8	Trees on ROW	6%	Q3 2021
CAIDI	159	All Other	1%	Q4 2021
Customer Minutes	1,427,354			
Customers Affected	8,983			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by a tree during a storm			Complete	Mar-21
On cycle tree trimming			Complete	Jun-21
Repair damage caused by a tree during a storm			Complete	Jun-21
Repair damage caused by a tree during a storm			Complete	Aug-21
Repair damage caused by a tree			Complete	Oct-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Waterville	Waterville	State College	357	37
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.9	Trees off ROW	51%	Q1 2021
SAIDI	3,837	Other Electric Utility	47%	Q2 2021
SAIFI	12.18	Unknown	1%	Q3 2021
CAIDI	315	All Other	1%	Q4 2021
Customer Minutes	1,369,831			
Customers Affected	4,347			
Remedial Action Planned or Taken			**Status**	**Progress**
Restore outage caused by other electric utility during a storm			Complete	Mar-21
Restore outage caused by other electric utility			Complete	Jun-21
Repair damage caused by a tree during a storm			Complete	Jul-21
Repair damage caused by a tree			Complete	Dec-21
Overhead circuit inspection			To be Completed 2022	0%

West Penn Power				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Thomas	Thomas	Boyce	1,348	49
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.9	Trees off ROW	51%	Q1 2021
SAIDI	1002	Vehicle	27%	Q2 2021
SAIFI	3.45	Unknown	17%	Q3 2021
CAIDI	291	All Other	5%	Q4 2021
Customer Minutes	1,351,235			
Customers Affected	4,650			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by a tree during a storm			Complete	Mar-21
Forced outage to repair damage during a storm			Complete	Jun-21
Repair damage caused by a vehicle during a storm			Complete	Jul-21
Repair damage caused by a tree during a storm			Complete	Dec-21
Overhead circuit inspection			To be Completed 2022	0%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Piney Fork	Gillhall	Charleroi	2,200	16
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.8	Line Failure	41%	Q1 2021
SAIDI	596	Vehicle	36%	Q2 2021
SAIFI	1.78	Trees off ROW	12%	Q3 2021
CAIDI	334	All Other	11%	Q4 2021
Customer Minutes	1,311,384			
Customers Affected	3,924			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by a tree during a storm			Complete	Feb-21
Zone 1 Infrared Inspection			Complete	May-21
Repair damage caused by a tree during a storm			Complete	Jun-21
Repair line failure			Complete	Aug-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Franklin	Rogersville	Jefferson	832	71
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.4	Trees off ROW	90%	Q1 2021
SAIDI	1,225	Unknown	4%	Q2 2021
SAIFI	3.5	Equipment Failure	4%	Q3 2021
CAIDI	350	All Other	2%	Q4 2021
Customer Minutes	1,018,794			
Customers Affected	2,915			
Remedial Action Planned or Taken			**Status**	**Progress**
Restore unknown outage during a storm			Complete	Mar-21
Repair damage caused by a tree			Complete	May-21
Repair equipment failure			Complete	Aug-21
Repair damage caused by a tree			Complete	Nov-21

West Penn Power				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Smith	Francis Mine	Washington	1,436	50
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1	Trees off ROW	83%	Q1 2021
SAIDI	511	Trees on ROW	9%	Q2 2021
SAIFI	2.45	Line Failure	4%	Q3 2021
CAIDI	209	All Other	4%	Q4 2021
Customer Minutes	734,383			
Customers Affected	3,521			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by a tree during a storm			Complete	Mar-21
Repair damage caused by a tree during a storm			Complete	Jun-21
On cycle tree trimming			Complete	Aug-21
Repair damage caused by a tree			Complete	Sep-21
Repair line failure			Complete	Nov-21
Substation	**Circuit**	**District**	**Customers**	**Outages**
Weedville	Weedville	St Marys	1435	35
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1	Trees off ROW	71%	Q1 2021
SAIDI	490	Human Error - Non-Company	17%	Q2 2021
SAIFI	2.85	Trees on ROW	5%	Q3 2021
CAIDI	172	All Other	7%	Q4 2021
Customer Minutes	702,789			
Customers Affected	4,088			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by a tree during a storm			Complete	Mar-21
Repair damage caused by a tree			Complete	May-21
Forced outage to repair damage during a storm			Complete	Jul-21
Repair damage caused by a tree			Complete	Dec-21
On cycle tree trimming			Complete	Dec-21

West Penn Power				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Driftwood	Driftwood	St Marys	870	28
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	0.9	Human Error - Non-Company	73%	Q1 2021
SAIDI	764	Trees off ROW	20%	Q2 2021
SAIFI	1.79	Line Failure	6%	Q3 2021
CAIDI	427	All Other	1%	Q4 2021
Customer Minutes	664,245			
Customers Affected	1,557			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by wind during a storm			Complete	Mar-21
Repair damage caused by Human Error Non-Company			Complete	Apr-21
Repair damage caused by a tree			Complete	Sep-21
Repair line failure			Complete	Oct-21

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Joint 2021 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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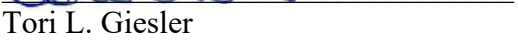

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