

M-2016-2522508

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February 1, 2019

VIA UNITED PARCEL SERVICE

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

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FEB - 1 2019

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

Re: Joint 4th Quarter 2018 Reliability Report – Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company – Public Version

Dear Secretary Chiavetta:

Pursuant to 52 Pa. Code § 57.195(d) and (e), enclosed for filing on behalf of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company (collectively, the “Companies”) are two copies of the Joint 4th Quarter 2018 Reliability Report – Public Version (“Joint Report”). Please date stamp the additional copy and return it in the postage-prepaid envelope provided.

On December 22, 2004, the Companies filed an Application for Protective Order at Docket No. L-00030161. The Application was granted, allowing the Companies to file proprietary versions of the quarterly reliability reports. The Proprietary Version of this Joint Report is being filed under separate cover.

Please feel free to contact me if you have any questions or need additional information regarding this matter.

Sincerely,



Tori L. Giesler

Enclosures

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



Joint 2018 4th Quarter Reliability Report

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

Pursuant to 52 Pa. Code § 57.195(d) and (e)

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PA PUBLIC UTILITIES BOARD
SECRETARY'S OFFICE

**Joint 4th Quarter 2018 Reliability Report –
Metropolitan Edison Company (“Met-Ed”),
Pennsylvania Electric Company (“Penelec”),
Pennsylvania Power Company (“Penn Power”), and
West Penn Power Company (“West Penn”)**

Section 57.195(e)(1): A description of each major event that occurred during the preceding quarter, including the time and duration of the event, the number of customers affected, the cause of the event and any modified procedures adopted in order to avoid or minimize the impact of similar events in the future.¹

Major Event(s)

FirstEnergy Company	Customers Affected	Time and Duration of the Event		Cause of the Event	Commission Approval Status
Penn Power	43,919	Duration	101 hours 41 minutes	Snow and Ice	Approved January 4, 2019
		Start Date/Time	11/15/18 1257		
		End Date/Time	11/19/18 1838		
West Penn	75,332	Duration	141 hours 14 minutes	Snow and Ice	Approved January 4, 2019
		Start Date/Time	11/15/18 1213		
		End Date/Time	11/21/18 0927		

¹ For purposes of this Joint Report, all reliability reporting is 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(e)(2): Rolling 12-month reliability index values (SAIFI, CAIDI, SAIDI, and if available MAIFI) for the EDC's service territory for the preceding quarter. The report shall include the data used in calculating the indices, namely the average number of customers served, the number of sustained customer interruptions, the number of customers affected, and the customer minutes of interruption. If MAIFI values are provided, the report shall also include the number of customer momentary interruptions.

Reliability Index Values

4Q 2018 (12-Mo Rolling)	Met-Ed ²			Penelec			Penn Power			West Penn ³		
	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	1.27	1.26	1.52	1.71	1.12	1.34	1.10	1.05	1.26	1.22
CAIDI	117	140	130	117	141	114	101	121	138	170	204	171
SAIDI	135	194	165	148	213	195	113	162	152	179	257	209
MAIFI ⁴			1.71			2.82			0.22			
Customers Served ⁵	565,359			580,198			163,633			716,367		
Number of Sustained Interruptions	11,367			13,771			3,382			13,689		
Customers Affected	718,902			993,665			180,247			874,505		
Customer Minutes	93,214,096			113,145,011			24,939,341			149,491,577		
Number of Customer Momentary Interruptions	963,949			1,637,726			36,404					

² Met-Ed filed a major event exclusion request on September 5, 2018 which was denied by the Pennsylvania Public Utility Commission in a Secretarial Letter dated September 25, 2018. Met-Ed filed a Petition for Appeal on October 5, 2018 and is currently awaiting a decision. Data from this appeal is included in the reliability information.

³ West Penn filed a major event exclusion request on October 8, 2018 which was denied by the Pennsylvania Public Utility Commission in a Secretarial Letter dated October 26, 2018. West Penn filed a Petition for Appeal on November 5, 2018 and is currently awaiting a decision. Data from this appeal is included in the reliability information.

⁴ MAIFI values are not available for West Penn.

⁵ Represents the average number of customers served during the reporting period.

Unique Events Occurring in 4Q 2018:

Met-Ed

- On October 20, 2018, rain and high winds, with recorded gusts up to approximately 40 miles per hour, resulted in outages impacting 3,012 customers (0.5% of Met-Ed's customers). Preliminary data indicates the reliability impact of the storm was approximately 1.1 minutes of SAIDI, 0.01 of SAIFI and an overall storm CAIDI of 214.1 minutes.
- On November 15, 2018, freezing rain, ice accumulation and up to seven inches of snow with wind gusts up to 40 miles per hour resulted in outages impacting 30,893 customers (5.5% of Met-Ed's customers). Preliminary data indicates the reliability impact of the storm was approximately 8.7 minutes of SAIDI, 0.06 of SAIFI and an overall storm CAIDI of 158 minutes.

West Penn

- On October 20, 2018, thunderstorms producing heavy rain and wind gusts in excess of 40 miles per hour resulted in outages impacting 9,424 customers (1.3% of West Penn's customers). Preliminary data indicates the reliability impact of the storm was approximately 2.4 minutes of SAIDI, 0.01 of SAIFI and an overall storm CAIDI of 180.4 minutes.

Section 57.195(e)(3): Rolling 12-month reliability index values (SAIFI, CAIDI, SAIDI, and if available, MAIFI) and other pertinent information such as customers served, number of interruptions, customer minutes interrupted, number of lockouts, and so forth, for the worst performing 5% of the circuits in the system. An explanation of how the EDC defines its worst performing circuits shall be included.

Worst Performing Circuits – Reliability Indices

The methodology used to identify worst performing circuits is based on both System Average Interruption Frequency Index (“SAIFI”) and System Average Interruption Duration Index (“SAIDI”). The methodology consists of the following steps:

1. For each circuit calculate a circuit SAIFI using only distribution-caused outages.
2. Select the worst 20% of circuits based on the highest circuit SAIFI.
3. Rank the selected circuits based on SAIDI using only distribution-caused customer minutes.
4. Select 5% of the circuits based on the highest customer minutes. These circuits are then identified as the worst performing circuits.

Met-Ed, Penelec, Penn Power, and West Penn’s rankings of the 5% Worst Performing Circuits are provided in Attachment A to this report.

Submitted Pursuant to 52 Pa. Code § 57.195(d) and (e)

Section 57.195(e)(4): Specific remedial efforts taken and planned for the worst performing 5% of the circuits identified in paragraph (3).

Worst Performing Circuits – Remedial Actions

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

Section 57.195(e)(5): A rolling 12-month breakdown and analysis of outage causes during the preceding quarter, including the number and percentage of service outages, the number of customers interrupted, and customer interruption minutes categorized by outage cause such as equipment failure, animal contact, tree related, and so forth. Proposed solutions to identified service problems shall be reported.

Outages by Cause

Outages by Cause – Met-Ed

Outage by Cause				
4th Quarter 2018 12-Month Rolling	Met-Ed			
Cause	Customer Minutes	Number of Sustained Interruptions	Customers Affected	% Based on Number of Outages
Equipment failure	20,088,736	2,754	168,925	24.24%
Trees off ROW - tree	30,734,394	1,795	137,942	15.78%
Animal	3,476,471	1,618	34,164	14.23%
Unknown	7,118,836	1,412	83,214	12.42%
Line failure	6,925,441	958	45,505	8.43%
Trees off ROW - limb	3,498,025	481	24,945	4.24%
Trees - sec/service	381,998	436	1,016	3.83%
Forced outage	4,179,426	413	69,522	3.63%
Bird	440,840	319	4,886	2.81%
Trees on ROW	1,898,356	301	7,887	2.65%
Vehicle	8,240,190	295	60,087	2.59%
Lightning	2,866,144	255	25,270	2.24%
Human error - non-company	1,002,114	74	12,704	0.65%
Overload	710,440	49	5,820	0.43%
Human error - company	599,727	44	16,745	0.39%
Object contact with line	346,796	40	6,179	0.35%
UG dig-up	116,292	26	462	0.23%
Customer equipment	62,374	26	3,446	0.23%
Previous lightning	154,459	19	1,153	0.17%
Other electric utility	68,872	13	6,180	0.11%
Fire	31,629	8	162	0.07%
Ice	11,780	7	131	0.06%
Other utility - non-electric	163,996	6	2,380	0.05%
Vandalism	2,487	5	9	0.04%
Contamination	416	2	2	0.02%
Switching error	1,344	1	4	0.01%
Wind	92,513	10	162	0.00%
Total	93,214,096	11,367	718,902	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, 2018, and associated actions designed to address these outage causes.

To reduce the likelihood of equipment-caused outages, Met-Ed follows Inspection and Maintenance (“I&M”) programs⁶ that set forth schedules for regular inspections of distribution and substation facilities. These programs are geared towards specific components such as capacitors, poles, circuits, transformers, radio-controlled switches, substations, and reclosers. Equipment identified is repaired or replaced as appropriate.

To address outages caused by trees, Met-Ed performs cycle-based tree trimming and enhanced tree trimming in select locations. Enhanced tree trimming removes healthy limbs overhanging primary conductors. Trees identified as a potential cause of a future outage are removed to prevent an interruption of electrical service to Met-Ed’s customers. Met-Ed continues its program to accelerate the mitigation of trees subject to damage from the Emerald Ash Borer.

To address animal-caused outages, Met-Ed installs animal guards on equipment that experience a high frequency of animal related outages. When possible, animal guards are installed at the time service is restored for outages caused by animals. In addition, Met-Ed requires animal guards to be installed on all new overhead and underground riser installations.

Generally speaking, there are a number of other reliability projects that have been identified to help reduce the number of, and limit the duration and impact of, interruptions to customers. These include:

- **Circuit ties and loops** – Circuit ties and loops continue to be built between radial sections of circuits. When ties and loops are available, circuits can be switched during outages to enable faster service restoration.

⁶ Pursuant to 52 Pa. Code § 57.198, every two years an electric distribution company shall file, and receive approval from the Commission of, a biennial plan for the periodic inspection, maintenance, repair and replacement of its facilities. On December 30, 2013, Paul Diskin, Director, Technical Utility Services, issued a letter approving the Company’s biennial inspection, maintenance, repair, and replacement plan effective January 1, 2015 through December 31, 2016. Further, on March 4, 2016 an additional letter was issued approving the plans effective January 1, 2017 – December 31, 2018.

- **Targeted circuit rehabilitation** – Targeted circuit rehabilitation is being performed in zones one and two⁷ focusing on circuits having a high rate of equipment and line failure and animal-caused outages. Equipment that may be replaced includes crossarms, capacitors, insulators, lightning arresters and connectors.
- **Wood Pole Reinforcement/Replacement** – Wood poles identified by a qualified inspector as having degraded beyond restorable condition are being replaced, while poles that are restorable are being reinforced.
- **Underground Residential Distribution (“URD”) Cable Replacement** – Bare concentric neutral cable is being replaced as part of Met-Ed’s underground distribution residential cable replacement program. This type of cable was manufactured without an insulating jacket, thereby causing the concentric neutral wire to corrode and fail prematurely.
- **Fuse Replacement** – To reduce the scope of outages, fuses and other protective devices are being installed on circuits selected based on overall performance as well as protection needs.
- **Porcelain cutout replacement** – Porcelain cutouts are being replaced with more robust polymer to reduce the number of recloser and circuit breaker lockouts and other equipment damage.
- **Substation Transformer Replacement** – The transformer at the Swamp substation was replaced in July 2018 with a pad mounted transformer and line regulators for voltage control. Due to a delay in receiving materials, replacement of the pad mounted transformer and line regulators at the School Lane substation has been deferred to the end of the first quarter 2019.
- **Installation of supervisory control and data acquisition (“SCADA”) devices** – Existing gang-operated air brake switches, disconnect switches and oil circuit reclosers are being replaced with SCADA-controlled switches that will allow for remote operation to restore service to customers when an outage occurs. Remote switching eliminates the need to dispatch crews to manually operate the switches. The result is fewer customers affected and reduced outage durations.

⁷ Zone one is defined as the portion of the circuit from the substation breaker to the first protective device. Zone two is defined as the three-phase conductor and devices after the first protective device.

Outages by Cause – Penelec

Outage by Cause				
4th Quarter 2018 12-Month Rolling	Penelec			
Cause	Customer Minutes	Number of Sustained Interruptions	Customers Affected	% Based on Number of Outages
Equipment failure	25,131,347	3,083	296,123	22.38%
Unknown	6,674,113	2,008	83,075	14.59%
Animal	3,502,715	1,567	31,637	11.36%
Trees off ROW - tree	38,229,095	1,544	197,922	11.22%
Line failure	13,521,894	1,414	119,043	10.27%
Forced outage	6,632,570	1,034	72,366	7.51%
Lightning	3,555,876	748	33,274	5.43%
Trees - sec/service	470,414	609	1,799	4.43%
Bird	976,266	361	16,536	2.62%
Trees off ROW - limb	1,880,421	310	16,787	2.26%
Vehicle	5,964,286	305	46,703	2.21%
Ice	302,919	135	2,126	0.98%
Trees on ROW	361,148	108	3,573	0.78%
Human error - company	1,799,328	99	36,535	0.72%
Overload	886,436	85	19,978	0.62%
Other electric utility	280,647	85	1,705	0.62%
Human error - non-company	788,418	82	5,520	0.59%
UG dig-up	180,580	55	1,648	0.40%
Previous lightning	199,498	37	970	0.27%
Object contact with line	573,211	36	1,675	0.26%
Vandalism	3,444	19	19	0.14%
Fire	106,850	14	912	0.10%
Customer equipment	10,885	10	52	0.07%
Contamination	48,910	7	122	0.05%
Other utility - non-electric	218,276	4	697	0.03%
Switching Error	36,820	4	909	0.03%
Wind	808,644	8	1,959	0.00%
Total	113,145,011	13,771	993,665	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, 2018, and the associated actions designed to address these outage causes.

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

Outages caused by unknown factors are patrolled by a troubleman and recorded as having an unknown cause. During the fourth quarter of 2018, 19% of the unknown outages occurred during minor storm weather days and accounted for 2% of the total customers affected. For certain unknown outages, engineering may conduct a post-outage circuit inspection as needed to determine if additional actions are necessary.

To address animal-caused outages, Penelec installs animal guards on equipment that experience a high frequency of animal related outages. When possible, animal guards are installed at the time service is restored to prevent future animal-related outages.

Generally speaking, there are a number of other reliability projects that have been identified to help reduce the number of, and limit the duration and impact of, interruptions to customers. These include:

- **Circuit rehabilitation** – Targeted circuit rehabilitation is being performed in zones one and two, focusing on circuits having a high rate of equipment and line failure and animal-caused outages. Equipment that may be replaced includes crossarms, capacitors, insulators, lightning arresters and connectors.
- **Porcelain cutout replacement** – Porcelain cutouts are being replaced with a more robust version constructed from polymer which is likely to reduce the number of recloser and circuit breaker lockouts and other equipment damage.

- **Circuit ties and loops** – Circuit ties and loops continue to be built between radial sections of circuits. When ties and loops are available, circuits can be switched during outages to enable faster service restoration.
- **Customer Service Improvement program** – Reliability improvements are being performed on clusters of customers that experience frequent or repeated outages. The Customer Service Improvement program is designed to reduce the frequency of outages at the customer level and is often initiated from customer complaints. In addition to enhancing system performance, the program is a means to reduce the frequency of outages at the customer level that might not otherwise be addressed when targeting overall system metrics.
- **Advanced protective devices** - Advanced protective devices such as electronically controlled reclosers and switches with modernized communication are being installed to allow for additional protection coordination.
- **Fuse protection** – To reduce the scope of outages, fuse protection and coordination recommendations on the 34.5 kV system will be constructed and implemented based on full circuit coordination studies.
- **Cap and Pin Insulator Replacement program** – Brown porcelain cap and pin style insulators that are prone to failure, as well as switch insulators and arresters, are being replaced.
- **Substation Breakers** – Penelec has identified a brand of circuit breaker that fails to operate properly causing unreliable breaker operations during line outages. As a result, these select circuit breakers at 34.5 kV substations are being replaced.
- **Installation of SCADA devices** – Additional SCADA controlled devices are being installed at locations on both the distribution and 34.5 kV systems that will allow for remote operation to restore service to customers when an outage occurs. Remote switching eliminates the need to dispatch crews to manually operate the switches. The result is fewer customers affected and reduced outage durations.

Outages by Cause – Penn Power

Outage by Cause				
4th Quarter 2018 12-Month Rolling	Penn Power			
Cause	Customer Minutes	Number of Sustained Interruptions	Customers Affected	% Based on Number of Outages
Trees off ROW - tree	10,123,540	749	39,067	22.15%
Animal	1,920,215	502	22,287	14.84%
Equipment failure	2,385,778	344	23,747	10.17%
Line failure	1,924,304	325	12,920	9.61%
Bird	484,057	308	5,516	9.11%
Lightning	741,694	219	9,635	6.48%
Unknown	1,142,810	208	16,146	6.15%
Trees off ROW - limb	1,372,430	187	8,138	5.53%
Trees - sec/service	140,931	150	429	4.44%
Vehicle	3,170,655	102	14,230	3.02%
Forced outage	294,948	84	8,254	2.48%
Overload	621,616	69	7,929	2.04%
Previous lightning	198,586	28	7,121	0.83%
Human error - non-company	227,079	26	2,163	0.77%
Human error - company	86,281	20	1,604	0.59%
Trees on ROW	27,740	18	255	0.53%
UG dig-up	34,888	16	385	0.47%
Customer equipment	1,151	9	9	0.27%
Object contact with line	22,376	7	246	0.21%
Ice	15,564	7	140	0.21%
Vandalism	2,633	3	25	0.09%
Fire	65	1	1	0.03%
Total	24,939,341	3,382	180,247	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, 2018, and the associated actions designed to address these outage causes.

To address outages caused by trees, Penn Power 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 right-of-way priority trees. In addition, Penn Power performs enhanced trimming, which removes healthy limbs overhanging primary conductors, and is increasing priority tree removal on selected circuits.

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

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

Generally speaking, there are several other reliability projects that have been identified to help reduce the number of, and limit the duration and impact of, interruptions to customers. These include:

- **Line Sectionalizing** – Switches and fuses are being installed on unprotected overhead circuits for improved line sectionalizing capability, reducing the scope of an outage and allowing for quicker isolation and restoration. In addition, poles, reclosers, cutouts, arresters, fault indicators and animal guards may be replaced or installed to ensure proper line sectionalizing.
- **Circuit ties, loops and sources** – Circuit ties and loops continue to be built between radial sections of circuits. When ties and loops are available, circuits can be switched during outages to enable faster restoration. In addition, Penn Power continues to add new substations which provide a new source to serve customers and additional capacity.
- **Overhead Conductor Replacement** – Smaller, aging overhead conductors are being replaced to improve energy efficiency, increase capacity and improve operational flexibility.

- Submitted Pursuant to 52 Pa. Code § 57.195(d) and (e)

- **URD Cable Replacement** – Bare concentric neutral cable is being replaced as part of Penn Power’s URD cable replacement program. This type of cable was manufactured without an insulating jacket, thereby causing the concentric neutral wire to corrode and fail prematurely.
- **Wood Pole Reinforcement/Replacement** – Wood poles identified by a qualified inspector as having degraded beyond restorable condition are being replaced, while poles that are restorable are being reinforced.
- **Substation Equipment Replacement** – Circuit breakers, station transformers and other substation equipment, such as insulators, switches, buses, arresters and conductors that are obsolete or in poor condition are being replaced with new equipment. Proactively replacing older equipment increases substation reliability and reduces the occurrence of equipment failure.
- **Installation of SCADA devices** – Additional SCADA devices are being installed where circuit conditions and system performance warrant. Remote SCADA controlled devices allow for remote operation to restore service to customers when an outage occurs. Remote switching eliminates the need to dispatch crews to manually operate the switches. The result is fewer customers affected and reduced outage durations.

Outages by Cause – West Penn

Outage by Cause				
4th Quarter 2018 12-Month Rolling	West Penn			
Cause	Customer Minutes	Number of Sustained Interruptions	Customers Affected	% Based on Number of Outages
Trees off ROW - tree	62,332,133	3,242	251,187	23.68%
Equipment failure	20,174,866	2,851	157,338	20.83%
Unknown	7,694,032	1,821	73,889	13.30%
Line failure	16,651,588	1,412	109,762	10.31%
Animal	1,882,491	1,293	19,643	9.44%
Forced outage	4,319,946	747	75,034	5.46%
Trees on ROW	4,411,822	464	20,044	3.39%
Trees - sec/service	379,163	439	899	3.21%
Vehicle	9,748,591	343	62,159	2.51%
Bird	786,263	307	8,618	2.24%
Trees off ROW - limb	3,615,794	226	24,129	1.65%
Wind	12,297,358	140	18,231	1.02%
Lightning	1,905,176	111	15,249	0.81%
Human error - non-company	477,246	63	5,659	0.47%
Human error - company	763,674	57	12,477	0.42%
UG dig-up	195,401	47	1,075	0.34%
Object contact with line	195,340	43	1,710	0.31%
Overload	292,226	25	5,488	0.18%
Customer equipment	181,775	20	1,111	0.15%
Other electric utility	320,286	14	1,984	0.10%
Contamination	154,920	8	3,358	0.06%
Fire	10,143	5	63	0.04%
Vandalism	167,037	5	2,621	0.04%
Other utility - non-electric	511,290	3	2,046	0.02%
Switching error	21,996	2	716	0.01%
Previous Lightning	1,020	1	15	0.01%
Total	149,491,577	13,689	874,505	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, 2018, 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 right-of-way priority trees. West Penn continues its program to accelerate the mitigation of trees subject to damage from the Emerald Ash Borer.

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

Outages caused by unknown factors are patrolled by a troubleman and recorded as having an unknown cause. During the fourth quarter of 2018, 36% of unknown outages occurred during minor storm weather days and accounted for less than 4% of the total customers affected. For certain unknown outages, engineering may conduct a post-outage circuit inspection as needed to determine if additional actions are necessary.

Generally speaking, there are a number of other reliability projects that have been identified to help reduce the number of, and limit the duration and impact of, interruptions to customers. These include:

- **Fuse Installation** – New fused cutouts are being installed to improve circuit protection based on a coordination review. Circuits are selected based on customer count, past reliability and average customers per fuse.
- **Targeted circuit rehabilitation** - Targeted circuit rehabilitation is being performed in zones one and two, focusing on circuits having a high rate of equipment and line failure and animal-caused outages. Equipment that may be replaced includes crossarms, capacitors, insulators, lightning arresters and cutouts.

- **Worst Performing Circuit rehabilitation** - Select Worst Performing Circuits have been targeted for enhanced circuit rehabilitation in zones one and two, which can include hardware rehabilitation, coordination review, installation of additional protective devices as well as reclosers.
- **URD Cable Replacement** - Bare concentric neutral cable is being replaced as part of West Penn's URD cable replacement program. This type of cable was manufactured without an insulating jacket, thereby causing the concentric neutral wire to corrode and fail prematurely.
- **Customers Experiencing Multiple Interruptions projects** - Improvement projects focusing on clusters of customers experiencing multiple interruptions of line protection devices are being implemented to enhance system performance as well as reduce frequency of outages at the customer level that might not be addressed when targeting overall system metrics.
- **Wood pole reinforcement/replacement** - Wood poles identified by a qualified inspector as having degraded beyond restorable condition are being replaced, while poles that are restorable are being reinforced.
- **Substation batteries, reclosers and transformer arresters** – Substation batteries and reclosers reaching the end of their useful lives are being replaced. If the batteries are not replaced, the potential exists for the mis-operation of substation equipment which could cause a possible outage. Replacement of reclosers will ensure proper operation to clear line faults and work properly with upstream and downstream line equipment to prevent an unnecessary outage. Arresters on transformer banks made from silicon carbide are being replaced with polymer metal oxide varistor (“MOV”) arresters. MOV arresters provide better protection to the transformer making it less likely to have a catastrophic failure.
- **Underground substation exit cables** - Exit cables that were manufactured without an insulating jacket, thereby causing the concentric neutral wire to corrode and fail prematurely, are being replaced. By replacing these exit cables, West Penn will reduce the interruptions to a circuit associated with the cable as well as the long interruption times associated with the replacement.
- **Enhanced overcurrent protection and SCADA control** – New electronic reclosers with SCADA control are being installed at targeted substations as part of the enhanced overcurrent protection program. Adding SCADA control to electronic reclosers in select substations with existing SCADA capabilities limits the number of customers affected, provides additional

monitoring and allows for remote switching to restore customers at the circuit level more quickly.

- **Sub-transmission modernization and automation** – Aging electro-mechanical relay controls and switches and automated sub-transmission switching locations are being replaced with newer technology. The installation of SCADA controlled reclosers and switches and automatic switch modernization will provide enhanced sectionalizing for larger blocks of customers at the substation level. The SCADA controlled switches are designed to allow for remote switching to restore large blocks of customers more quickly.

Submitted Pursuant to 52 Pa. Code § 57.195(d) and (e)

Section 57.195(e)(6): *Quarterly and year-to-date information on progress toward meeting transmission and distribution inspection and maintenance goals/objectives (for first, second and third quarter reports only).*

Information is not required for the 4th Quarter report.

Section 57.195(e)(7): *Quarterly and year-to-date information on budgeted versus actual transmission and distribution operation and maintenance expenditures in total and detailed by the EDC's own functional account code as available. (For first, second and third quarter reports only).*

Information is not required for the 4th Quarter report.

Section 57.195(e)(8): *Quarterly and year-to-date information on budgeted versus actual transmission and distribution capital expenditures in total and detailed by the EDC's own functional account code or FERC account code as available. (For first, second and third quarter reports only).*

Information is not required for the 4th Quarter report.

Section 57.195(e)(9): Dedicated staffing levels for transmission and distribution operation and maintenance at the end of the quarter, in total and by specific category (for example, linemen, technician, and electrician).⁸

Staffing Levels

Met-Ed 2018												
Department	Position	Staffing Level				Staff Added in Quarter			Staff Lost in Quarter			Plan to Hire in 2019 ¹¹
		1Q	2Q	3Q	4Q	New Hire – Experienced	New Hire – PSI Student	Other ⁹	Retirement	Voluntary Separation	Other ¹⁰	
Distribution	Line Leader	51	50	52	49				1		2	
	Line Troubleshooter	38	38	36	35						1	
	Lineman	115	130	128	127			3		1	3	15
Substation	Substation Leader	15	15	15	15							
	Substation Employee	56	65	64 ¹²	64			1			1	5
Transmission	Line Leader	2	1	1	1							
	Lineman	9	8	8	10			2				
	Total	286	307	304	301			6	1	1	7	20

⁸ As ordered on March 30, 2015 at Docket Nos. D-2014-2365991, D-2014-2365992, D-2014-2365993, and D-2014-2365994, *Implementation Plan of the Focused Management Audit of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company* (Appendix A) (5): FirstEnergy is directed to provide additional detail as described below in the staff reporting section in the Quarterly Reliability Reports. For each staff member added, provide information on whether they were a new hire, if they are already at the journeyman, or other experienced level of training. For each staff member lost, provide the reason for the loss (retirement, voluntary separation, etc.). The number of staff in each category that the Company is planning to hire in the next calendar year.

⁹ Includes transfers and promotions.

¹⁰ Includes transfers, involuntary separations, and promotions.

¹¹ Reflective of new PSI hires.

¹² In 3Q 2018 a Relay Technician Sr. was promoted to a Test Technician but was not accounted for in the total Substation Employee count. Therefore, the Substation Employee total in 3Q has been corrected to 64.

Penelec 2018												
Department	Position	Staffing Level				Staff Added in Quarter			Staff Lost in Quarter			Plan to Hire in 2019 ¹⁵
		1Q	2Q	3Q	4Q	New Hire – Experienced	New Hire – PSI Student	Other ¹³	Retirement	Voluntary Separation	Other ¹⁴	
Distribution	Line Leader	70	67	70	69					1		
	Line Troubleshooter	69	66	64	65			2			1	
	Lineman	103	130	125 ¹⁶	124						1	25
Substation	Substation Leader	33	32	32	33			2			1	
	Substation Employee	34	37	30	29				1			6
Transmission	Line Leader	3	5	5	5							
	Lineman	25	23	22	21					1		
	Total	337	360	348	346			4	1	2	3	31

¹³ Includes transfers and promotions.

¹⁴ Includes transfers, involuntary separations, and promotions.

¹⁵ Reflective of new PSI hires.

¹⁶ In 3Q 2018 the Lineman category was reported as 124. However, it was noted that the new hire of a Lineman C&M B was incidentally omitted. Therefore, the count for the 3Q has been corrected to 125.

Penn Power 2018												
Department	Position	Staffing Level				Staff Added in Quarter			Staff Lost in Quarter			Plan to Hire in 2019 ¹⁹
		1Q	2Q	3Q	4Q	New Hire – Experienced	New Hire – PSI Student	Other ¹⁷	Retirement	Voluntary Separation	Other ¹⁸	
Distribution	Line Leader	24	23	24	24							
	Line Troubleshooter	8	8	9	9							
	Lineman	43	48	44	44			1			1	6
Substation	Substation Leader	5	5	5	5							4
	Substation Employee	15	19	18	18			1			1	
Transmission	Line Leader	1	1	1	1							
	Lineman	5	3	3	3							
	Total	101	107	104	104			2			2	10

¹⁷ Includes transfers and promotions.

¹⁸ Includes transfers, involuntary separations, and promotions.

¹⁹ Reflective of new PSI hires.

West Penn 2018												
Department	Position	Staffing Level				Staff Added in Quarter			Staff Lost in Quarter			Plan to Hire in 2019 ²²
		1Q	2Q	3Q	4Q	New Hire – Experienced	New Hire – PSI Student	Other ²⁰	Retirement	Voluntary Separation	Other ²¹	
Distribution	Line Leader	67	57	57	57							
	Line Troubleshooter	67	71	69	66			1	1		3	
	Lineman	90	112	107 ²³	105			17	1		18	28
Substation	Substation Leader	16	16	17	17							
	Substation Employee	65	72	72	71			8			9	8
Transmission	Line Leader	2	0	0	0							
	Lineman	2	2	1	1							
	Total	309	330	324	317			26	2		30	36

²⁰ Includes transfers and promotions.

²¹ Includes transfers, involuntary separations, and promotions.

²² Reflective of new PSI hires.

²³ In 3Q 2018 a distribution lineman was lost in the quarter which decreased the total lineman count by one.

Submitted Pursuant to 52 Pa. Code § 57.195(d) and (e)

Section 57.195(e)(10): Quarterly and year-to-date information on contractor hours and dollars for transmission and distribution operation and maintenance.

Contractor Expenditures

Contractor expenses are billed on a lump sum basis and as such, hourly information is not available.

This portion of the report is confidential.

Section 57.195(e)(11): Monthly call-out acceptance rate for transmission and distribution maintenance workers presented in terms of both the percentage of accepted calls-out and the amount of time it takes the EDC to obtain the necessary personnel. A brief description of the EDC's call-out procedure should be included when appropriate.

As stated in the initial filing of the Joint 2018 3rd Quarter Reliability Report, Penelec and Penn Power transitioned to ARCOS, an automated call-out software, in late June. The Companies were in the process of developing a new automated report within ARCOS, therefore, call-out data was not available at the time of filing for Penelec and Penn Power.

Call-out Acceptance Rate

Call-out percentage is defined as the number of workers accepting to total call outs.

This portion of the report is confidential.

. Submitted Pursuant to 52 Pa. Code § 57.195(d) and (e)

Call-out Response

This portion of the report is confidential.

Call-Out Procedure:

When an event occurs, Met-Ed, Penelec, Penn Power and West Penn dispatch a troubleman to find and assess the cause of the outage. If the troubleman is unable to repair the damage and a crew is required, the troubleman will inform the Distribution Control Center (“DCC”). The DCC and/or the Customer Operations Center’s (“COC”) person on duty will then initiate the call-out process until desired staffing levels required to complete the restoration have been achieved.

The number of unique workers called for an outage event is recorded and represents the total calls, or opportunities, for an outage event. The number of unique workers who accept the opportunity is recorded and represents the workers accepting. The elapsed time is calculated by taking the date and time of the first employee called for an event minus the date and time of the last accepting employee for that event. The call-out results from all outages experienced during a particular month are added together to derive a total value for each field.

ATTACHMENT A

Worst Performing Circuits - Reliability Indices

Met-Ed													
Circuit Rank	Substation	Circuit	District	Average Customers	Outages	Lockouts	Customer Minutes	Customers Affected	SAIDI Impact	SAIDI	SAIFI	CAIDI	MAIFI
1	Mountain	00744-4	Dillsburg	1,674	70	0	1,372,628	7,746	2.37	801	3.54	227	1.26
2	North Cornwall	00610-2	Lebanon	2,118	56	1	1,298,246	6,442	2.30	613	3.04	202	2.99
3	Bern Church	00789-1	Reading	1,423	81	1	1,061,795	3,441	1.88	746	2.42	309	0.38
4	Gardners	00754-4	Gettysburg	572	35	0	987,957	1,776	1.75	1,727	3.10	556	0.00
5	Lickdale	00625-2	Lebanon	1,001	90	0	1,014,138	4,645	1.74	984	3.06	321	4.97
6	Moselem	00782-1	Reading	2,389	41	3	1,064,694	8,898	1.71	405	2.71	149	0.00
7	Shawnee	00899-3	Stroudsburg	1,679	87	3	959,960	9,347	1.70	572	5.57	103	3.96
8	S Nazareth	00809-3	Easton	3,180	55	2	897,894	8,336	1.59	282	2.62	108	3.05
9	Lickdale	00626-2	Lebanon	1,952	62	1	955,537	8,533	1.54	447	1.98	226	14.57
10	Bernville	00786-1	Hamburg	1,844	92	0	763,984	4,744	1.35	414	2.57	161	1.00
11	Straban	00676-4	Gettysburg	1,078	53	1	756,704	2,076	1.34	702	1.93	365	8.00
12	Allen	00502-4	Dillsburg	1,140	43	3	723,503	7,458	1.28	635	6.54	97	2.00
13	Myerstown	00751-2	Lebanon	541	16	0	706,403	3,348	1.25	1,306	6.19	211	1.36
14	Lynnville	00735-1	Hamburg	1,366	47	3	664,539	3,727	1.18	486	2.73	178	1.00
15	River View	00793-1	Reading	3,138	30	2	1,091,137	11,502	1.14	205	2.35	87	0.70
16	Mountain	00740-4	Dillsburg	2,617	60	1	700,530	6,574	1.12	242	1.51	160	5.96
17	Newberry	00577-4	York	1,732	21	3	625,010	4,303	1.11	361	2.48	145	11.99
18	Shawnee	00822-3	Stroudsburg	3,706	100	1	588,444	5,411	1.04	159	1.46	109	2.26
19	Leesport	00812-1	Hamburg	1,248	24	1	579,933	2,596	1.03	465	2.08	223	0.00
20	No Bangor	00813-3	Easton	1,345	45	0	564,355	2,243	1.00	420	1.67	252	0.00
21	Friedensburg	00769-1	Reading	2,079	81	1	579,627	6,870	0.99	270	2.30	117	0.00
22	Cotton Street	00156-1	Reading	802	25	2	557,708	2,859	0.99	695	3.56	195	0.13
23	Swatara Hill	00765-2	Lebanon	608	33	2	547,333	2,182	0.97	900	3.59	251	9.98
24	Smith Street	00219-4	York	357	4	2	541,396	1,073	0.96	1,517	3.01	505	0.00
25	Northwood	00821-3	Easton	1,706	24	1	532,301	3,662	0.94	312	2.15	145	0.00
26	Birchwood	00624-3	Stroudsburg	2,150	42	1	544,919	7,499	0.93	245	2.54	97	8.17
27	Swatara Hill	00763-2	Lebanon	1,515	46	1	524,727	3,548	0.93	346	2.34	148	6.51
28	W Boyertown	00714-1	Boyertown	1,868	56	2	509,188	4,890	0.90	273	2.62	104	2.00

Met-Ed													
Circuit Rank	Substation	Circuit	District	Average Customers	Outages	Lockouts	Customer Minutes	Customers Affected	SAIDI Impact	SAIDI	SAIFI	CAIDI	MAIFI
29	Menges Mills	00543-4	Hanover	1,542	28	0	507,234	3,049	0.90	329	1.98	166	3.01
30	S Hamb	00801-1	Hamburg	2,442	64	2	501,186	5,373	0.89	205	2.20	93	0.03
31	Shawnee	00860-3	Stroudsburg	3,170	68	2	501,031	7,346	0.89	158	2.32	68	1.30
32	Belfast	00812-3	Easton	1,355	30	2	493,987	7,512	0.87	365	5.54	66	0.46
33	Nisky	00176-3	Easton	388	12	1	512,763	1,110	0.86	1,258	1.86	676	1.00
34	Gardners	00752-4	Gettysburg	1,496	78	2	477,633	5,053	0.84	319	3.38	95	2.00
35	Ferndale	00076-3	Easton	639	26	1	474,708	1,172	0.84	743	1.83	405	2.00
36	Bushkill Falls	00698-3	Stroudsburg	1,841	50	2	484,065	6,799	0.83	256	2.69	95	1.01
37	Windsor	00797-4	York	1,534	69	0	470,291	2,267	0.83	307	1.48	207	5.01
38	North Lebanon	00715-2	Lebanon	1,593	38	1	489,202	5,541	0.83	295	2.48	119	1.00
39	Barto	00705-1	Boyertown	810	56	1	463,014	1,197	0.82	572	1.48	387	1.51

Penelec													
Circuit Rank	Substation	Circuit	District	Average Customers	Outages	Lockouts	Customer Minutes	Customers Affected	SAIDI Impact	SAIDI	SAIFI	CAIDI	MAIFI
1	Grover	00527-63	Towanda	1,063	82	0	2,127,794	4,335	3.67	2,002	4.08	491	12.85
2	East Pike	00095-13	Indiana	3,436	37	1	1,654,181	10,029	2.85	481	2.92	165	10.46
3	Erie South	00259-31	Erie	3,237	73	1	1,284,436	5,576	2.21	397	1.72	230	7.42
4	Warren South	00220-41	Warren	2,636	82	1	1,265,855	10,571	2.18	480	4.01	120	5.55
5	Natl Forge SW Sta	00577-41	Warren	1,232	52	0	1,137,872	8,750	1.96	924	7.10	130	5.28
6	Blairsville East	00080-13	Indiana	1,030	27	0	1,136,453	4,422	1.96	1,103	4.29	257	54.82
7	Lenox	00755-65	Montrose	686	30	1	1,133,571	2,976	1.95	1,652	4.34	381	2.60
8	Seward	00079-11	Johnstown	753	19	2	1,091,550	2,100	1.88	1,450	2.79	520	7.41
9	Piney	00523-51	Oil City	1,491	59	2	1,002,310	7,665	1.73	672	5.14	131	1.70
10	Madera	00166-22	Philipsburg	2,140	69	0	978,699	8,425	1.69	457	3.94	116	8.20
11	Buffalo Road	00265-31	Erie	1,446	23	1	875,252	8,071	1.51	605	5.58	108	1.53
12	Timblin	00103-23	DuBois	711	39	0	814,007	1,540	1.40	1,145	2.17	529	0.00
13	Marienville	00328-51	Oil City	1,199	54	0	765,690	4,217	1.32	639	3.52	182	1.64
14	Dubois	00137-23	DuBois	2,867	90	0	750,397	6,050	1.29	262	2.11	124	43.06
15	North Warren	00596-41	Warren	1,124	51	1	738,193	3,977	1.27	657	3.54	186	8.58
16	Marienville	00327-51	Oil City	749	27	1	716,921	1,390	1.24	957	1.86	516	25.39
17	McVeytown	00112-81	Lewistown	1,328	57	0	658,683	2,856	1.14	496	2.15	231	10.98
18	Pennmar	00002-12	Somerset	798	31	0	656,265	3,357	1.13	822	4.21	195	13.60
19	Madera	00165-22	Philipsburg	1,082	46	0	623,943	3,949	1.08	577	3.65	158	24.06
20	Mansfield	00558-63	Mansfield	560	43	2	592,824	1,770	1.02	1,059	3.16	335	12.99
21	Lake Como	00787-65	Montrose	885	29	2	588,904	2,435	1.02	665	2.75	242	3.06
22	Springboro	00217-52	Meadville	473	21	1	544,701	922	0.94	1,152	1.95	591	8.78
23	Glory	00105-13	Indiana	412	18	0	535,945	1,805	0.92	1,301	4.38	297	8.97
24	Union City	00207-43	Erie	1,098	46	2	517,653	2,687	0.89	471	2.45	193	1.98
25	Northeast	00591-31	Erie	585	18	1	489,309	2,188	0.84	836	3.74	224	12.37
26	Grandview	00354-51	Oil City	533	23	1	486,314	1,354	0.84	912	2.54	359	4.76
27	Seward	00075-11	Johnstown	903	40	0	480,272	3,136	0.83	532	3.47	153	0.36
28	Logan	00700-81	Lewistown	1,009	38	0	479,423	3,638	0.83	475	3.61	132	1.90
29	Powell Avenue	00513-31	Erie	1,758	31	0	475,917	3,515	0.82	271	2.00	135	3.08
30	N Meshoppen Tran	00530-65	Montrose	587	33	0	450,484	1,997	0.78	767	3.40	226	15.36
31	Tunkhannock	00533-65	Montrose	1,227	44	0	448,034	2,132	0.77	365	1.74	210	29.76

Penclec													
Circuit Rank	Substation	Circuit	District	Average Customers	Outages	Lockouts	Customer Minutes	Customers Affected	SAIDI Impact	SAIDI	SAIFI	CAIDI	MAIFI
32	Milroy	00128-81	Lewistown	1,721	37	2	444,695	4,373	0.77	258	2.54	102	14.21
33	Shade Gap 115	00622-82	Lewistown	666	19	3	444,270	2,194	0.77	667	3.29	202	3.32
34	Mansfield	00699-63	Mansfield	764	32	1	432,113	2,128	0.74	566	2.79	203	2.61
35	Springboro	00237-52	Meadville	2,795	86	0	421,515	4,423	0.73	151	1.58	95	3.82
36	Thompson	00436-65	Montrose	1,340	63	0	420,980	2,056	0.73	314	1.53	205	2.28
37	Lawrenceville	00632-63	Mansfield	643	17	2	417,424	1,557	0.72	649	2.42	268	0.84
38	Union City Sub	00206-43	Erie	2,166	74	0	409,129	6,064	0.71	189	2.80	67	0.24
39	Laurel Pipeline	00036-71	Altoona	924	28	0	408,850	3,557	0.70	442	3.85	115	11.10
40	N Meshoppen Tran	00534-65	Montrose	872	57	0	404,063	2,082	0.70	463	2.39	194	11.93
41	Shawville	00151-21	Clearfield	2,252	43	1	401,572	6,294	0.69	178	2.79	64	4.44
42	Industrial Park	00796-65	Montrose	354	18	1	400,480	1,163	0.69	1,131	3.29	344	1.00
43	Page Road	00445-43	Erie	655	30	1	398,574	2,716	0.69	609	4.15	147	1.97
44	Birmingham	00168-22	Philipsburg	1,083	58	2	389,064	4,089	0.67	359	3.78	95	1.82
45	Glen Fern	00512-51	Oil City	809	53	1	388,002	5,188	0.67	480	6.41	75	9.47
46	Philipsburg	00162-22	Philipsburg	3,354	78	0	383,657	7,585	0.66	114	2.26	51	6.30
47	North Warren	00207-41	Warren	1,364	69	0	369,375	2,333	0.64	271	1.71	158	0.82
48	Logan	00701-81	Lewistown	1,425	31	0	365,720	3,703	0.63	257	2.60	99	7.31
49	Mildred	00771-62	Towanda	518	13	2	356,043	1,120	0.61	687	2.16	318	5.56
50	Fairview East	00242-34	Erie	1,328	35	1	353,222	2,239	0.61	266	1.69	158	3.88
51	Emlenton	00322-51	Oil City	451	40	0	348,397	867	0.60	772	1.92	402	2.41
52	Philipsburg	00161-22	Philipsburg	769	31	0	347,464	2,068	0.60	452	2.69	168	6.13
53	East Hickory	00201-41	Warren	314	29	2	343,278	1,438	0.59	1,093	4.58	239	3.06
54	Brookville	00125-23	DuBois	616	41	0	343,227	1,414	0.59	557	2.30	243	3.77
55	Madera	00167-22	Philipsburg	1,628	46	0	341,817	2,973	0.59	210	1.83	115	9.05
56	Reed Street	00549-31	Erie	836	18	1	333,326	1,953	0.57	399	2.34	171	7.05
57	Clymer Sub	00110-13	Indiana	1,120	30	0	331,301	1,762	0.57	296	1.57	188	0.59
58	Cooper	00069-11	Johnstown	674	27	0	316,013	1,511	0.54	469	2.24	209	4.79
59	Portage	00186-72	Altoona	1,028	15	2	314,018	2,209	0.54	305	2.15	142	9.16
60	Athens	00511-61	Towanda	814	41	2	312,879	3,413	0.54	384	4.19	92	7.97
61	Timblin	00115-23	DuBois	315	19	0	311,765	1,305	0.54	990	4.14	239	18.34
62	Kearsarge	00528-31	Erie	1,532	13	0	309,445	3,744	0.53	202	2.44	83	1.19

Penn Power													
Circuit Rank	Substation	Circuit	District	Average Customers	Outages	Lockouts	Customer Minutes	Customers Affected	SAIDI Impact	SAIDI	SAIFI	CAIDI	MAIFI
1	Jamestown	W-162	Clark	1,042	32	0	1,230,322	3,230	7.52	1,181	3.10	381	0.0
2	Thompson Run	D550	Zelienople	977	33	0	569,489	2,176	3.48	583	2.23	262	0.0
3	Adams Ridge	W780	Zelienople	2,015	26	0	516,031	2,551	3.15	256	1.27	202	0.0
4	Koppel	D-531	New Castle	944	40	1	487,081	1,653	2.98	516	1.75	295	0.0
5	Ingomar	D620	Zelienople	1,248	6	0	479,580	2,144	2.93	384	1.72	224	0.0
6	Hickory	W-243	Clark	1,525	17	1	474,048	2,377	2.90	311	1.56	199	0.0
7	Seneca	W701	Zelienople	2,059	40	4	440,462	8,933	2.69	214	4.34	49	0.0
8	Camp Reynolds	W-134	Clark	1,737	68	0	405,053	3,277	2.48	233	1.89	124	0.0
9	Canal	W-101	Clark	1,482	51	1	385,359	4,135	2.36	260	2.79	93	0.0

West Penn ²⁴												
Circuit Rank	Substation	Circuit	District	Average Customers	Outages	Lockouts	Customer Minutes	Customers Affected	SAIDI Impact	SAIDI	SAIFI	CAIDI
1	Rutan	Bristoria	Jefferson	1,157	73	1	1,612,996	6,499	2.3	1,394	5.62	248
2	Emporium	Emporium Jct	St Marys	599	28	0	1,596,722	2,596	2.2	2,666	4.33	615
3	North Union	Gallatin	Uniontown	2,462	52	1	1,553,434	4,155	2.2	631	1.69	374
4	Shaffers Corner	Seventh St Rd	Arnold	2,025	29	1	1,495,860	7,680	2.1	739	3.79	195
5	Flintstone	Chaneyville	Hyndman	565	47	1	1,223,766	2,409	1.7	2,166	4.26	508
6	Driftwood	Driftwood	St Marys	979	49	0	1,096,182	1,563	1.5	1,120	1.60	701
7	Houston	McGovern	Washington	1,525	55	0	1,092,909	2,715	1.5	717	1.78	403
8	Smith	Francis Mine	Washington	1,435	60	3	1,012,763	5,855	1.4	706	4.08	173
9	St. Clair	Lesnett	Boyce	1,643	18	4	1,002,566	7,797	1.4	610	4.75	129
10	Dutch Fork	Claysville	Washington	1,604	76	1	990,793	5,371	1.4	618	3.35	184
11	Kersey	Shelvey	St Marys	940	19	1	983,596	1,732	1.4	1,046	1.84	568
12	Emporium	West Creek	St Marys	1,036	36	1	940,214	1,920	1.3	908	1.85	490
13	Thompson Farm	Toftrees	State College	1,247	13	4	939,157	5,991	1.3	753	4.80	157
14	Waterville	Waterville	State College	359	23	1	916,084	3,534	1.3	2,552	9.84	259
15	Peters	Library	Boyce	1,773	12	1	898,464	4,633	1.3	507	2.61	194
16	Smith	Florence	Washington	751	67	0	847,205	3,440	1.2	1,128	4.58	246
17	Dutch Fork	W Alexander	Washington	1,169	57	2	844,929	5,309	1.2	723	4.54	159
18	Franklin	West Waynesburg	Jefferson	1,958	24	3	825,526	6,617	1.2	422	3.38	125
19	Kane	Russell City	St Marys	705	22	0	822,819	2,633	1.1	1,167	3.73	313
20	Peters	McMurray	Boyce	1,434	22	1	805,270	2,766	1.1	562	1.93	291
21	Piney Fork	Gillhall	Charleroi	2,192	21	1	800,985	4,175	1.1	365	1.90	192
22	Ridgway	Montmorenci	St Marys	686	19	3	797,414	2,250	1.1	1,162	3.28	354
23	Bethlen	Darlington	Latrobe	1,231	63	2	770,241	4,676	1.1	626	3.80	165
24	Bedford Road	Rt 220 North	Hyndman	791	32	1	759,154	3,678	1.1	960	4.65	206
25	Youngwood	Spare	Jeannette	619	25	4	663,403	4,719	0.9	1,072	7.62	141
26	Karns City	Kaylor	Butler	1,148	36	1	657,106	3,257	0.9	572	2.84	202
27	Rutan	Windridge	Jefferson	421	34	0	628,649	1,994	0.9	1,493	4.74	315
28	St. Clair	Valley	Boyce	2,597	32	1	615,611	5,531	0.9	237	2.13	111
29	Smith	Burgettstown	Washington	1,840	44	0	613,761	3,318	0.9	334	1.80	185
30	Krendale	Unionville	Butler	1,406	36	2	602,419	4,724	0.8	428	3.36	128
31	Sewickley	Wendel	Jeannette	967	27	1	595,847	2,829	0.8	616	2.93	211

²⁴ MAIFI values not available for West Penn

West Penn ²⁴												
Circuit Rank	Substation	Circuit	District	Average Customers	Outages	Lockouts	Customer Minutes	Customers Affected	SAIDI Impact	SAIDI	SAIFI	CAIDI
32	Avella	W Middletown	Washington	1,140	45	0	581,283	2,229	0.8	510	1.96	261
33	St. Clair	Skyridge	Boyce	895	14	1	579,539	3,794	0.8	648	4.24	153
34	St. Clair	Fort Couch	Boyce	1,105	44	2	562,253	5,286	0.8	509	4.78	106
35	Kiski Valley	Kittanning Rd	Arnold	1,790	57	0	551,334	3,012	0.8	308	1.68	183
36	Silversville 138-12	Cole Road	Arnold	1,955	53	0	548,401	3,336	0.8	281	1.71	164
37	Butler	Hospital	Butler	895	21	1	544,451	1,721	0.8	608	1.92	316
38	Purcell	Artemas	Hyndman	554	25	0	527,070	965	0.7	951	1.74	546
39	Saltsburg	Salina	Arnold	885	27	2	520,863	2,711	0.7	589	3.06	192
40	Saint Thomas	Edenville	McConnellsburg	1,150	34	3	519,107	3,720	0.7	451	3.23	140

- Submitted Pursuant to 52 Pa. Code § 57.195(d) and (e)

ATTACHMENT B

Worst Performing Circuits – Remedial Actions

As ordered on March 30, 2015 at Docket Nos. D-2014-2365991, D-2014-2365992, D-2014-2365993, and D-2014-2365994, *Implementation Plan of the Focused Management Audit of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company* (Appendix A)(1): FirstEnergy is directed to provide additional detail in its reporting of the 5% of worst performing circuits in its Commission Quarterly Reliability Reports to highlight those circuits that appear multiple times on Quarterly Reliability Reports, but not necessarily in four quarters in a calendar year. For each Quarterly Reliability Report filed pursuant to 52 Pa. Code § 57.195, this additional detail shall include highlighting those worst performing circuits that have appeared in two or more Quarterly Reliability Reports in the past four quarters.

Met-Ed						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
1	Mountain	00744-4	<i>Performance was driven by trees off ROW (84%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Perform targeted three phase circuit assessment	Complete	Mar-18	
			Perform targeted three phase circuit assessment	Complete	Apr-18	
			Install SCADA switch	Complete	Apr-18	
			On cycle tree trimming	Complete	Jun-18	
			Enhanced tree trimming	Complete	Jun-18	
			Upgrade Zone 2 recloser to Emergency Management System ("EMS") radio controlled	To be Completed 2019	0%	
2	North Cornwall	00610-2	<i>Performance was driven by vehicle accidents (61%) and line failure (18%).</i>			1Q 2018 2Q 2018 4Q 2018
			Enhanced tree trimming	Complete	Jun-18	
			Post-storm circuit patrol	Complete	Aug-18	
			Protection review	Complete	Sep-18	
			Install SCADA devices #1	Complete	Sep-18	
			Install SCADA devices #2	Complete	Sep-18	
			Install SCADA devices #3	Complete	Sep-18	
			Install SCADA devices #4	Complete	Sep-18	
			Install SCADA devices #5	Complete	Sep-18	
			Install SCADA devices #6	Complete	Sep-18	
			Install SCADA devices #7	Complete	Sep-18	
			Thermovision and overhead inspection	Complete	Oct-18	
			Install SCADA devices #8	Complete	Nov-18	
			Install SCADA devices #9	Complete	Nov-18	
			Install SCADA devices #10	Complete	Nov-18	
			Repair/replace high priority items identified during inspection	To be Completed 2019	0%	
			Remove switch that limits backfeed capacity	To be Completed 2019	0%	
Three-phase overhead inspection	To be Completed 2019	0%				

Met-Ed						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
3	Bern Church	00789-1	<i>Performance was driven by an outage during a storm caused by trees off ROW and lightning (48%) and outages caused by trees off ROW (32%).</i>			3Q 2018 4Q 2018
			Install additional fault indicators	Complete	Aug-18	
			Three-phase overhead inspection	Complete	Nov-18	
			On cycle tree trimming	Complete	Dec-18	
			Three-phase overhead inspection	To be Completed 2019	0%	
4	Gardners	00754-4	<i>Performance was driven by trees off ROW (89%).</i>			
			Perform accelerated backbone and three phase circuit assessment	To be Completed 2019	0%	
			Thermovision and overhead inspection	To be Completed 2019	0%	
			On cycle tree trimming	To be Completed 2019	0%	
			Upgrade Zone 2 recloser to EMS radio controlled	To be Completed 2019	0%	
5	Lickdale	00625-2	<i>Performance was driven by trees off ROW (62%) and equipment failure (11%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Thermovision and overhead inspection	Complete	Apr-18	
			Enhanced tree trimming	Complete	Jun-18	
			Post-storm circuit patrol	Complete	Aug-18	
			On cycle tree trimming	Complete	Dec-18	
			Install SCADA device #1	To be Completed 2019	0%	
			Install SCADA device #2	To be Completed 2019	0%	
			Repair/replace high priority items identified during inspection	To be Completed 2019	0%	
			Repair/replace high priority items identified during inspection	To be Completed 2019	0%	
Three-phase overhead inspection	To be Completed 2019	0%				
6		00782-1	<i>Performance was driven by an outage caused by a vehicle accident (53%) and an outage related to the vehicle accident (20%).</i>			3Q 2018 4Q 2018
			Replace mainline pole	Complete	Sept-18	
			Overhead mainline circuit inspection	Complete	Nov-18	
			Install SCADA recloser #1	To be Completed 2019	25%	
			Install SCADA recloser #2	To be Completed 2019	25%	
			Install SCADA switch #1	To be Completed 2019	25%	
			Install SCADA switch #2	To be Completed 2019	25%	
			Install SCADA switch #3	To be Completed 2019	25%	
			Thermovision and overhead inspection	To be Completed 2019	99%	

Met-Ed						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
7	Shawnee	00899-3	<i>Performance was driven by trees off ROW (34%), equipment failure (27%) and unknown outages (23%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair items identified during Thermovision inspection	Complete	Feb-18	
			Install SCADA switch #1	Complete	Nov-18	
			Install SCADA switch #2	Complete	Nov-18	
			Install SCADA switch #3	Complete	Nov-18	
8	S. Nazareth	00809-3	<i>Performance was driven by equipment failure (54%), forced outages (16%) and vehicle accidents (15%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Thermovision and overhead inspection	Complete	Jan-18	
			Repair items identified during Thermovision inspection	Complete	Mar-18	
			Install SCADA	Complete	Nov-18	
			Three-phase overhead inspection	To be Completed 2019	0%	
			Install SCADA recloser #1	To be Completed 2019	0%	
			Install SCADA recloser #2	To be Completed 2019	0%	
			Install SCADA recloser #3	To be Completed 2019	0%	
Install SCADA recloser #4	To be Completed 2019	0%				
9	Lickdale	00626-2	<i>Performance was driven by equipment failure (68%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Thermovision and overhead inspection	Complete	Apr-18	
			On cycle tree trimming	Complete	Dec-18	
			Targeted mainline rehabilitation	Complete	Sep-18	
			Install SCADA switch #1	To be Completed 2019	0%	
			Install SCADA switch #2	To be Completed 2019	0%	
			Install SCADA switch #3	To be Completed 2019	0%	
			Install SCADA recloser #1	To be Completed 2019	0%	
			Repair/replace high priority items identified during inspection	To be Completed 2019	0%	
Three-phase overhead inspection	To be Completed 2019	0%				

Met-Ed							
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters	
10	Bernville	00786-1	<i>Performance was driven by outages caused by trees off ROW (52%) and line and equipment failure (25%).</i>				1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Thermovision and overhead inspection	Complete	Mar-18		
			Enhanced overhead circuit inspection	Complete	Mar-18		
			Post-storm forestry inspection	Complete	Mar-18		
			Replace arrester on mainline switch from inspection	Complete	Oct-18		
			Replace porcelain cutout with polymer cutout from inspection	Complete	Oct-18		
			Replace pole from inspection #1	Complete	Oct-18		
			Replace crossarm from inspection #1	Complete	Nov-18		
			Replace pole from inspection #2	Complete	Nov-18		
			Replace pole from inspection #3	Complete	Nov-18		
			Replace crossarm from inspection #2	Complete	Dec-18		
			Replace pole from inspection #4	Complete	Dec-18		
			Replace crossarm from inspection #3	Complete	Dec-18		
			Install SCADA switch #1	Complete	Dec-18		
			Install SCADA switch #2	Complete	Dec-18		
			Targeted mainline circuit rehabilitation engineering review	To be Completed 2019	0%		
			Replace line clamp from Thermovision inspection	To be Completed 2019	25%		
			Replace crossarm brace from Thermovision inspection	To be Completed 2019	25%		
			Replace crossarm brace from Thermovision inspection	To be Completed 2019	25%		
			Replace crossarm brace from Thermovision inspection	To be Completed 2019	25%		
			Install SCADA recloser	To be Completed 2019	50%		
Install SCADA switch #1	To be Completed 2019	50%					
Install SCADA switch #2	To be Completed 2019	25%					
Three-phase overhead inspection	To be Completed 2019	0%					

Net-Ed						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
11	Straban	00676-4	<i>Performance was driven by trees off ROW (65%) and lightning (11%).</i>			2Q 2018 3Q 2018 4Q 2018
			Enhanced tree trimming	Complete	Feb-18	
			Install fault indicators	Complete	Jun-18	
			Replace poles identified during wood pole inspection	Complete	Jun-18	
			Perform accelerated backbone and three phase circuit assessment	Complete	Nov-18	
			Perform accelerated backbone and three phase circuit assessment	To be Completed 2019	0%	
			Thermovision and overhead inspection	To be Completed 2019	0%	
			Provide additional tie capacity on the circuit	To be Completed 2019	50%	
			Install SCADA recloser	To be Completed 2019	0%	
12	Allen	00502-4	<i>Performance was driven by line failure (43%), equipment failure (27%) and trees off ROW (24%).</i>			1Q 2018 3Q 2018 4Q 2018
			Perform post-storm backbone and three phase circuit patrol	Complete	Apr-18	
			Perform accelerated backbone and three phase circuit assessment	Complete	Nov-18	
			Targeted mainline circuit rehabilitation	Complete	Dec-18	
			Perform accelerated backbone and three phase circuit assessment	To be Completed 2019	0%	
			Thermovision and overhead inspection	To be Completed 2019	0%	
			On cycle tree trimming	To be Completed 2019	0%	
			Upgrade Zone 2 recloser to EMS radio controlled	To be Completed 2019	0%	
Install SCADA recloser	To be Completed 2019	0%				
13	Myerstown	00751-2	<i>Performance was driven by line failure (47%) and unknown outages (44%).</i>			3Q 2018 4Q 2018
			Post-storm circuit patrol	Complete	Aug-18	
			Review backfeed coordination	Complete	Aug-18	
			Install SCADA switch	To be Completed 2019	0%	

Met-Ed							
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters	
14	Lynnville	00735-1	<i>Performance was driven by an animal (41%) and an outage during a storm caused by broken poles (31%).</i>				1Q 2018 2Q 2018 4Q 2018
			Thermovision and overhead inspection	Complete	Feb-18		
			Enhanced tree trimming	Complete	Sep-18		
			Replace pole from inspection #1	Complete	Oct-18		
			Replace pole from inspection #2	Complete	Oct-18		
			On cycle tree trimming	Complete	Nov-18		
			Replace pole from inspection #3	Complete	Nov-18		
			Replace pole from inspection #4	Complete	Nov-18		
			Replace pole from inspection #5	Complete	Dec-18		
			Replace pole from inspection #6	Complete	Dec-18		
			Upgrade mainline recloser	To be Completed 2019	50%		
			Replace line clamp from Thermovision inspection #1	To be Completed 2019	50%		
			Replace line clamp from Thermovision inspection #2	To be Completed 2019	50%		
			Replace pole from Thermovision inspection	To be Completed 2019	50%		
			Replace arrester from Thermovision inspection	To be Completed 2019	50%		
			Install SCADA switch #1	To be Completed 2019	25%		
			Install SCADA switch #2	To be Completed 2019	25%		
			Install SCADA switch #3	To be Completed 2019	25%		
Overhead circuit inspection	To be Completed 2019	0%					
15	Riverview	00793-1	<i>Performance was driven by an outage caused by lightning (42%) and an outage caused by trees off ROW (36%).</i>				
			Replace crossarm from inspection	Complete	Jun-18		
			Overhead circuit inspection	Complete	Aug-18		
			Install SCADA recloser #1	To be Completed 2019	50%		
			Install SCADA switch #1	To be Completed 2019	25%		
			Install SCADA switch #2	To be Completed 2019	25%		
Install SCADA switch #3	To be Completed 2019	25%					

Met-Ed						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
16	Mountain	00740-4	<i>Performance was driven by trees off ROW (60%) and equipment failure (12%).</i>			
			Upgrade Zone 2 recloser to EMS radio controlled	Complete	Nov-18	
			Perform accelerated backbone and three phase circuit assessment	Complete	Nov-18	
			Perform accelerated backbone and three phase circuit assessment	To be Completed 2019	0%	
			Install SCADA recloser #1	To be Completed 2019	0%	
			Install SCADA recloser #2	To be Completed 2019	0%	
17	Newberry	00577-4	<i>Performance was driven by trees off ROW (86%).</i>			2Q 2018 3Q 2018 4Q 2018
			Replace items from 2018 capacitor inspection	Complete	Feb-18	
			On cycle tree trimming	Complete	Jun-18	
			Thermovision and overhead inspection	Complete	Nov-18	
			Replace pole from inspection #1	Complete	Nov-18	
			Replace pole from inspection #2	Complete	Nov-18	
			Replace pole from inspection #3	Complete	Nov-18	
			Repair/replace high priority items identified during overhead inspection	Complete	Nov-18	
Install SCADA switch	To be Completed 2019	0%				
18	Shawnee	00822-3	<i>Performance was driven by vehicle accidents (47%), equipment failure (15%) and unknown outages (13%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair items identified during Thermovision inspection	Complete	Feb-18	
			Porcelain cutout replacement #1	Complete	Dec-18	
			Porcelain cutout replacement #2	Complete	Dec-18	
			Porcelain cutout replacement #3	Complete	Dec-18	
			Install SCADA switch	To be Completed 2019	0%	
Three-phase overhead inspection	To be Completed 2019	0%				

Met-Ed						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
19	Leesport	00812-1	<i>Performance was driven by a forced outage due to a vehicle accident (35%) and outages during the backfeed of a neighboring circuit due to loading (32%).</i>			
			Overhead circuit inspection	Complete	Mar-18	
			Replace arrester from inspection #1	Complete	Oct-18	
			Replace arrester from inspection #2	Complete	Oct-18	
			Replace arrester from inspection #3	Complete	Oct-18	
			Replace arrester from inspection #4	Complete	Oct-18	
			Replace arrester from inspection #5	Complete	Nov-18	
			Replace arrester from inspection #6	Complete	Dec-18	
			Three-phase overhead inspection	To be Completed 2019	0%	
			On cycle tree trimming	To be Completed 2019	0%	
20	North Bangor	00813-3	<i>Performance was driven by equipment failure (51%) and trees off ROW (34%).</i>			2Q 2018 3Q 2018 4Q 2018
			Repair items identified during ThermoVision inspection	Complete	Mar-18	
			Three-phase overhead inspection	To be Completed 2019	0%	
21	Friedensburg	00769-1	<i>Performance was driven by trees off ROW (52%) and vehicle accidents (26%).</i>			3Q 2018 4Q 2018
			Install SCADA switch #1	Complete	Nov-18	
			Install SCADA switch #2	Complete	Nov-18	
			Install SCADA switch #3	Complete	Nov-18	
			Install SCADA recloser #1	Complete	Nov-18	
			Install SCADA recloser #2	Complete	Nov-18	
			Install SCADA switch #4	Complete	Dec-18	
			Enhanced tree trimming	Complete	Dec-18	
			On cycle tree trimming	Complete	Dec-18	
			Three-phase overhead inspection	Complete	Dec-18	
			Three-phase overhead inspection	To be Completed 2019	0%	
			Install SCADA switch #1	To be Completed 2019	25%	
			Install SCADA switch #2	To be Completed 2019	25%	

Met-Ed						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
22	Cotton Street	00156-1	<i>Performance was driven by outages caused by trees off ROW (59%) and line and equipment failure (29%).</i>			3Q 2018 4Q 2018
			Thermovision and overhead inspection	Complete	Apr-18	
			Replace crossarm braces from inspection	Complete	Apr-18	
			Upgrade mainline recloser	Complete	May-18	
			Targeted mainline forestry inspection	Complete	Oct-18	
			Three-phase overhead inspection	Complete	Nov-18	
			Replace insulator from inspection	Complete	Nov-18	
			Upgrade additional mainline recloser	Complete	Nov-18	
			Overhead circuit inspection	To be Completed 2019	0%	
23	Swatara Hill	00765-2	<i>Performance was driven by trees off ROW (80%).</i>			1Q 2018 3Q 2018 4Q 2018
			On cycle tree trimming	Complete	Dec-18	
			Install SCADA recloser #1	To be Completed 2019	0%	
			Install SCADA recloser #2	To be Completed 2019	0%	
			Install SCADA switch #1	To be Completed 2019	0%	
			Three-phase overhead inspection	To be Completed 2019	0%	
24	Smith Street	00219-4	<i>Performance was driven by equipment failure (99.9%).</i>			3Q 2018 4Q 2018
			Pole was replaced and equipment was repaired	Complete	Jul-18	
			Overhead circuit inspection	Complete	Jul-18	
			On cycle tree trimming	Complete	Aug-18	
			Pole was replaced and equipment was repaired	Complete	Aug-18	
			Thermovision and overhead inspection	Complete	Nov-18	
25	Northwood	00821-3	<i>Performance was driven by lightning (82%).</i>			2Q 2018 3Q 2018 4Q 2018
			Thermovision and overhead inspection	Complete	Jan-18	
			Repair items identified during Thermovision inspection	Complete	Jun-18	
			Three-phase overhead inspection	To be Completed 2019	0%	
			On cycle tree trimming	To be Completed 2019	0%	

Met-Ed						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
26	Birchwood	00624-3	<i>Performance was driven by vehicle accidents (73%) and equipment failure (23%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Thermovision and overhead inspection	Complete	Feb-18	
			Enhanced tree trimming	Complete	Aug-18	
			Install SCADA recloser	Complete	Dec-18	
			Install SCADA recloser	To be Completed 2019	0%	
			Overhead circuit inspection	To be Completed 2019	0%	
27	Swatara Hill	00763-2	<i>Performance was driven by trees off ROW - limb (32%), trees off ROW (28%) and line failure (29%).</i>			3Q 2018 4Q 2018
			Post-storm circuit patrol	Complete	Aug-18	
			Repair items found during inspection	Complete	Oct-18	
			On cycle tree trimming	Complete	Dec-18	
			Three-phase overhead inspection	To be Completed 2019	0%	
28	West Boyertown	00714-1	<i>Performance was driven by trees off ROW (89%).</i>			
			Targeted forestry inspection	Complete	Jul-18	
			Targeted forestry inspection	Complete	Nov-18	
			Three-phase overhead inspection	Complete	Nov-18	
			Three-phase overhead inspection	To be Completed 2019	0%	
29	Menges Mills	00543-4	<i>Performance was driven by unknown outage (37%), trees off ROW (32%) and vehicle accidents (18%).</i>			
			Overhead circuit inspection	Complete	Jan-18	
			Replace poles identified during wood pole inspection	Complete	Oct-18	
			Perform accelerated backbone and three phase circuit assessment	To be Completed 2019	0%	
			Replace/repair high priority items identified during overhead circuit patrol	To be Completed 2019	92%	

Met-Ed							
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters	
30	South Hamburg	00801-1	<i>Performance was driven by vehicle accidents (36%), trees off ROW (24%) and line and equipment failure (21%).</i>				
			Replace line clamp from Thermovision inspection	Complete	Apr-18		
			Overhead circuit inspection	Complete	Apr-18		
			Install SCADA switch #1	Complete	Nov-18		
			Install SCADA switch #2	Complete	Nov-18		
			Install SCADA switch #3	Complete	Nov-18		
			Install SCADA recloser #1	Complete	Nov-18		
			Install SCADA recloser #2	Complete	Dec-18		
			Replace mainline splice from Thermovision inspection	Complete	Dec-18		
			Replace pole from inspection	To be Completed 2019	50%		
			Replace crossarm from inspection	To be Completed 2019	50%		
			Replace crossarm from inspection	To be Completed 2019	50%		
			Replace crossarm from inspection	To be Completed 2019	50%		
31	Shawnee	00860-3	<i>Performance was driven by trees off ROW (51%) and unknown outages (27%).</i>				3Q 2018 4Q 2018
			Porcelain cutout replacement	Complete	Dec-18		
			Replace porcelain cutouts on circuit three phase with polymer cutouts	Complete	Dec-18		
			Replace porcelain cutouts on circuit three phase with polymer cutouts	Complete	Dec-18		
			Targeted mainline circuit rehabilitation	Complete	Dec-18		
			On cycle tree trimming	Complete	Dec-18		
			Three-phase overhead inspection	To be Completed 2019	0%		
32	Belfast	00812-3	<i>Performance was driven by unknown outages (63%) and trees off ROW (22%).</i>				3Q 2018 4Q 2018
			Thermovision and overhead inspection	Complete	Jan-18		
			Repair items identified during Thermovision inspection	Complete	Feb-18		
			Install SCADA recloser	To be Completed 2019	0%		
			Install SCADA recloser	To be Completed 2019	0%		
			Overhead circuit inspection	To be Completed 2019	0%		
33	Nisky	00176-3	<i>Performance was driven by a vehicle accident (90%).</i>				3Q 2018 4Q 2018
			Wood pole inspection	Complete	Jan-18		
			Overhead circuit inspection	Complete	Jan-18		

Met-Ed						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
34	Gardners	00752-4	<i>Performance was driven by trees off ROW (73%).</i>			3Q 2018 4Q 2018
			Replace poles identified during wood pole inspection	Complete	Jun-18	
			Repair damage caused by tree	Complete	Jun-18	
			Install fault indicators	Complete	Jun-18	
			Thermovision and overhead inspection	Complete	Nov-18	
			Perform accelerated backbone and three phase circuit assessment	Complete	Nov-18	
			Perform accelerated backbone and three phase circuit assessment	To be Completed 2019	0%	
35	Ferndale	00076-3	<i>Performance was driven by trees off ROW (87%).</i>			
			On cycle tree trimming	To be Completed 2019	0%	
36	Bushkill Falls	00698-3	<i>Performance was driven by human error non-company (45%) and equipment failure (19%).</i>			3Q 2018 4Q 2018
			On cycle tree trimming	Complete	Oct-18	
37	Windsor	00797-4	<i>Performance was driven by unknown outages (32%), vehicle accidents (28%) and trees Off ROW (26%).</i>			
			Post-storm circuit patrol	Complete	Mar-18	
			Overhead circuit inspection	Complete	Jun-18	
			Install additional SCADA switch	Complete	Jun-18	
			Repair items from backbone inspection (2 arresters)	Complete	Aug-18	
			Replace/repair high priority items identified during overhead circuit patrol	To be Completed 2019	8%	
			Install additional SCADA switch #1	To be Completed 2019	50%	
			Install additional SCADA switch #2	To be Completed 2019	50%	
			Install additional SCADA switch #3	To be Completed 2019	50%	
Install additional SCADA switch #4	To be Completed 2019	50%				

Met-Ed							
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters	
38	North Lebanon	00715-2	<i>Performance was driven by animal (48%), vehicle accidents (18%) and equipment failure (18%).</i>				2Q 2018 3Q 2018 4Q 2018
			Targeted overhead inspection	Complete	Nov-18		
			Install additional SCADA #1	To be Completed 2019	0%		
			Install additional SCADA #2	To be Completed 2019	0%		
			Install additional SCADA #3	To be Completed 2019	0%		
			Install additional SCADA #4	To be Completed 2019	0%		
			Install additional SCADA #5	To be Completed 2019	0%		
			Install additional SCADA #6	To be Completed 2019	0%		
			Install additional SCADA #7	To be Completed 2019	0%		
			Install additional SCADA #8	To be Completed 2019	0%		
			Install additional SCADA #9	To be Completed 2019	0%		
39	Barto	00705-1	<i>Performance was driven by trees off ROW (59%) tap outages, and a tap outage caused by lightning (13%).</i>				
			Targeted mainline circuit rehabilitation	Complete	Jul-18		
			Thermovision and overhead inspection	Complete	Oct-18		
			Three-phase overhead inspection	To be Completed 2019	0%		

Met-Ed					
Unranked circuits appearing 2 or more quarters in the last 4 quarters					
Substation	Circuit	1Q 2018	2Q 2018	3Q 2018	4Q 2018
Bath	00873-3	X	X		
Birdsboro	00756-1	X	X	X	
Clearfield	00632-3	X	X		
Dillsburg	00748-4	X	X		
Dillsburg	00749-4	X	X		
East Prospect	00765-4	X	X		
Flying Hills	00776-1	X	X		
Fox Hills	00850-3	X	X		
Frystown	00701-2	X	X	X	
Hill	00737-4	X	X	X	
Lynnville	00748-1	X	X		
Mt Rose	00562-4	X	X		
Myerstown	00750-2	X	X	X	
Newberry	00586-4	X	X		
Orrtanna	00764-4	X	X	X	
South Hamburg	00741-1		X	X	
Shawnee	00837-3		X	X	
Shawnee	00895-3	X	X		
Turf Club	00724-2	X	X	X	
Violet Hill	00325-4	X	X		
Walker	00865-3	X	X	X	
Windsor	00316-4	X	X	X	

Met-Ed				
Unranked circuits with remedial actions scheduled to be or recently completed				
Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work	Progress of Remedial Work or Date Completed
Bath	00873-3	On cycle tree trimming	Complete	Dec-18
Birchwood	0622-3	Install SCADA switch #1	Complete	Oct-18
		Install SCADA switch #2	Complete	Oct-18
		On cycle tree trimming	Complete	Oct-18
		Install SCADA switch	Complete	Nov-18
		Install SCADA recloser #1	Complete	Nov-18
		Install SCADA recloser #2	Complete	Dec-18
		Install SCADA recloser #3	Complete	Dec-18
Birdsboro	00756-1	On cycle tree trimming	Complete	Dec-18
Birdsboro	00757-1	Install additional SCADA switches	Complete	Dec-18
		On cycle tree trimming	Complete	Oct-18
Carsonia	00764-1	On cycle tree trimming	Complete	Nov-18
Clearfield	00631-3	Construct circuit tie	To be completed 2019 ²⁵	50%
Clearfield	00632-3	Construct circuit tie	Complete	Dec-18
		Install SCADA recloser	Complete	Jun-18
		Construct circuit tie	To be completed 2019 ²⁶	50%
Dillsburg	00748-4	On cycle tree trimming	Complete	Dec-18
Dillsburg	00749-4	Enhanced tree trimming	Complete	Sep-18
East Prospect	00765-4	Replace/repair high priority items identified during overhead circuit patrol	Complete	Dec-18
East Prospect	00766-4	Replace/repair high priority items identified during overhead circuit patrol	Complete	Nov-18
Fox Hill	00850-3	Replace recloser	Complete	Nov-18
		Install SCADA switch	Complete	Nov-18
		Enhanced three phase tree trimming	Complete	Nov-18
		Enhanced three phase tree trimming	Complete	Nov-18
		Install SCADA switch	Complete	Dec-18
		Replace recloser	Complete	Dec-18
Frystown	00701-2	Install additional fuses	Complete	Oct-18
		On cycle tree trimming	Complete	Dec-18
Glenside	00535-1	Thermovision and overhead inspection	Complete	Sep-18

²⁵ The project to construct a circuit tie has been deferred to 2019 to allow Met-Ed time to obtain the right-of-way from the customer.

²⁶ The project to construct a circuit tie has been deferred to 2019 to allow Met-Ed time to obtain the right-of-way from the customer.

Met-Ed				
Unranked circuits with remedial actions scheduled to be or recently completed				
Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work	Progress of Remedial Work or Date Completed
Hokes	00587-4	On cycle tree trimming	Complete	Oct-18
Leesport	00811-1	Install additional SCADA switch	Complete	Nov-18
Lorane	00560-1	Spot forester inspection #2	Complete	Nov-18
Lynnville	00748-1	Replace pole from inspection #4	Complete	Oct-18
		Replace arrester on mainline switch from inspection	Complete	Oct-18
		Replace arrester on mainline switch from inspection	Complete	Oct-18
		Replace crossarms from inspection	Complete	Oct-18
		Replace crossarms from inspection	Complete	Nov-18
		Replace pole from inspection #5	Complete	Nov-18
		On cycle tree trimming	Complete	Nov-18
		Enhanced tree trimming	Complete	Nov-18
		Replace pole from inspection #6	Complete	Dec-18
		Replace pole from inspection #7	Complete	Dec-18
Newberry	00576-4	Replace pole from inspection #8	Complete	Dec-18
		Replace pole from inspection #9	Complete	Dec-18
		On cycle tree trimming	Complete	Nov-18
Newberry	00586-4	Cycle tree trimming	Complete	Nov-18
		Repair/replace high priority items identified during overhead inspection	Complete	Nov-18
		Thermovision and overhead inspection	Complete	Nov-18

Penelec						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
1	Grover	00527-63	<i>Performance was driven by trees off ROW (83%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair line failure	Complete	May-18	
			Repair damage caused by trees during a storm	Complete	May-18	
			Repair damage caused by trees during a storm	Complete	Sep-18	
2	East Pike	00095-13	<i>Performance was driven by trees off ROW (59%), line failure (17%) and equipment failure (17%).</i>			2Q 2018 3Q 2018 4Q 2018
			Repair line failure	Complete	Apr-18	
			Repair line failure	Complete	Jun-18	
			Repair equipment failure	Complete	Jun-18	
			Repair damage caused by trees during a storm	Complete	Aug-18	
			Repair damage caused by trees during a storm	Complete	Nov-18	
			On cycle tree trimming	To be Completed 2019	0%	
3	Erie South	00259-31	<i>Performance was driven by equipment failure (88%).</i>			3Q 2018 4Q 2018
			Repair equipment failure	Complete	May-18	
			Repair equipment failure	Complete	Sep-18	
			On cycle tree trimming	Complete	Oct-18	
			Repair equipment failure	Complete	Nov-18	
			Install advanced distribution protective devices	Complete	Dec-18	
			Targeted circuit rehabilitation	To be Completed 2019	0%	
			Install new gang operated air brake switch	To be Completed 2019	0%	
4	Warren South	00220-41	<i>Performance was driven by trees off ROW (82%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by trees	Complete	Feb-18	
			Repair equipment failure	Complete	May-18	
			Repair damage caused by trees during a storm	Complete	Jul-18	
			Porcelain cutout replacement	Complete	Jul-18	
			Repair damage caused by trees during a storm	Complete	Sep-18	
			Install advanced distribution protective devices	Complete	Dec-18	
			On cycle tree trimming	To be Completed 2019	0%	
5	Natl Forge Sw Sta	00577-41	<i>Performance was driven by trees off ROW (87%).</i>			1Q 2018 4Q 2018
			Repair damage caused by trees	Complete	Oct-18	
			Repair damage caused by trees	Complete	Oct-18	

Penelec						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
6	Blairsville East	00080-13	<i>Performance was driven by equipment failure (74%) and trees off ROW (24%).</i>			2Q 2018 3Q 2018 4Q 2018
			Repair equipment failure	Complete	Jun-18	
			Repair damage caused by trees during a storm	Complete	Jul-18	
			Repair damage caused by trees during a storm	Complete	Sep-18	
7	Lenox	00755-65	<i>Performance was driven by trees off ROW (73%) and line failure (25%).</i>			3Q 2018 4Q 2018
			Repair line failure	Complete	Jun-18	
			Repair damage caused by trees during a storm	Complete	Jul-18	
			Repair damage caused by trees during a storm	Complete	Sep-18	
8	Seward	00079-11	<i>Performance was driven by trees off ROW (93%).</i>			3Q 2018 4Q 2018
			Repair damage caused by trees during a storm	Complete	Sep-18	
9	Piney	00523-51	<i>Performance was driven by trees off ROW (87%).</i>			2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by trees during a storm	Complete	May-18	
			Repair damage caused by trees during a storm	Complete	May-18	
			Repair damage caused by trees	Complete	Jun-18	
			Repair damage caused by trees	Complete	Sep-18	
			Repair damage caused by trees	Complete	Nov-18	
10	Madera	00166-22	<i>Performance was driven by recloser operation of an unknown cause (26%), equipment failure (25%), trees off ROW (22%) and vehicle (21%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Porcelain cutout replacement	Complete	Feb-18	
			Repair damage caused by vehicle accident	Complete	Mar-18	
			Repair damage caused by trees during a storm	Complete	May-18	
			Restore recloser operation of unknown cause	Complete	Sep-18	
			Restore recloser operation of unknown cause	Complete	Sep-18	
11	Buffalo Road	00265-31	<i>Performance was driven by line failure (62%) and equipment failure (31%).</i>			2Q 2018 3Q 2018 4Q 2018
			Repair equipment failure	Complete	May-18	
			Repair equipment failure	Complete	Jun-18	
			Restored fuse operation of unknown cause	Complete	Aug-18	
			Repair line failure	Complete	Nov-18	

Penelec						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
12	Timblin	00103-23	<i>Performance was driven by trees off ROW (87%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair equipment failure	Complete	Feb-18	
			Circuit inspection	Complete	Oct-18	
			Repair damage caused by trees during a storm	Complete	Nov-18	
			Targeted circuit rehabilitation	To be Completed 2019	0%	
			On cycle tree trimming	To be Completed 2019	0%	
13	Marienville	00328-51	<i>Performance was driven by trees off ROW (82%).</i>			2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by trees during a storm	Complete	May-18	
			Porcelain cutout replacement	Complete	May-18	
			Repair damage caused by trees during a storm	Complete	May-18	
			Repair damage caused by trees during a storm	Complete	Aug-18	
			Repair damage caused by trees during a storm	Complete	Nov-18	
14	DuBois	00137-23	<i>Performance was driven by trees off ROW (59%) and equipment failure (22%).</i>			1Q 2018 2Q 2018 4Q 2018
			Repair damage caused by trees during a storm	Complete	Sep-18	
			Repair damage caused by trees	Complete	Nov-18	
			Targeted circuit rehabilitation	Complete	Nov-18	
			On cycle tree trimming	To be Completed 2019	0%	
15	North Warren	00596-41	<i>Performance was driven by trees off ROW (85%).</i>			3Q 2018 4Q 2018
			Repair damage caused by trees	Complete	Jun-18	
			Repair damage caused by trees during a storm	Complete	Aug-18	
			Repair equipment failure during a storm	Complete	Jul-18	
			Repair damage caused by trees	Complete	Nov-18	
			Repair damage caused by trees during a storm	Complete	Nov-18	
16	Marienville	00327-51	<i>Performance was driven by tree of ROW (51%) and line failure (42%).</i>			
			Repair damage caused by trees	Complete	Apr-18	
			Repair equipment failure during a storm	Complete	May-18	
			Repair line failure	Complete	Dec-18	
			Install new radio controlled recloser	To be Completed 2019	0%	
17	McVeytown	00112-81	<i>Performance was driven by trees (38%), line failure (29%) and equipment failure (16%).</i>			
			Repair damage caused by a tree during a storm	Complete	Sep-18	
			Repair equipment failure	Complete	Nov-18	
			Repair line failure	Complete	Dec-18	

Penelec						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
18	Pennmar	00002-12	<i>Performance was driven by wind (68%) and trees off ROW (26%).</i>			3Q 2018 4Q 2018
			Repair damage caused by wind	Complete	Jul-18	
			Repair damage caused by trees during a storm	Complete	Sep-18	
19	Madera	00165-22	<i>Performance was driven by trees off ROW (85%).</i>			2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by trees during a storm	Complete	May-18	
			Repair damage caused by trees during a storm	Complete	Jul-18	
			Circuit inspection	Complete	Jul-18	
			Repair damage caused by trees	Complete	Nov-18	
			Install advanced distribution protective devices	To be Completed 2019	0%	
20	Mansfield	00558-63	<i>Performance was driven by line failure (62%) and trees off ROW (27%).</i>			1Q 2018 2Q 2018 4Q 2018
			Repair damage caused by trees during a storm	Complete	May-18	
			Repair line failure	Complete	Nov-18	
			Targeted circuit rehabilitation	To be Completed 2019	0%	
21	Lake Como	00787-65	<i>Performance was driven by line failure (77%) and trees off ROW (14%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair line failure	Complete	Feb-18	
			Repair damage caused by trees during a storm	Complete	Jun-18	
			Repair line failure	Complete	Jul-18	
22	Springboro	00217-52	<i>Performance was driven by trees off ROW (94%).</i>			3Q 2018 4Q 2018
			Repair damage caused by trees	Complete	Jun-18	
			Repair damage caused by trees during a storm	Complete	Jul-18	
23	Glory	00105-13	<i>Performance was driven by trees off ROW (85%).</i>			3Q 2018 4Q 2018
			Repair damage caused by trees	Complete	Jul-18	
			Repair damage caused by trees during a storm	Complete	Jul-18	
			Repair damage caused by trees	Complete	Aug-18	
24	Union City	00207-43	<i>Performance was driven by line failure (54%), vehicle accident (22%) and trees off ROW (11%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair line failure	Complete	Jan-18	
			Repair line failure	Complete	Mar-18	
			Repair damage caused by vehicle accident	Complete	Mar-18	
			Repair damage caused by trees during a storm	Complete	Nov-18	

Penelec						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
25	Northeast	00591-31	<i>Performance was driven by line failure (74%) and equipment failure (16%).</i>			3Q 2018 4Q 2018
			Repair line failure	Complete	Jul-18	
			Repair equipment failure	Complete	Sep-18	
			Repair line failure	Complete	Oct-18	
26	Grandview	00354-51	<i>Performance was driven by trees off ROW (90%).</i>			2Q 2018 3Q 2018 4Q 2018
			Repair line failure	Complete	Jan-18	
			Repair damage caused by trees during a storm	Complete	May-18	
			Repair damage caused by trees during a storm	Complete	Jun-18	
			On cycle tree trimming	Complete	Oct-18	
			Repair damage caused by trees during a storm	Complete	Oct-18	
			Replace substation recloser	To be Completed 2019	0%	
27	Seward	00075-11	<i>Performance was driven by equipment failure (53%) and trees off ROW (38%).</i>			2Q 2018 4Q 2018
			Repair damage caused by trees during a storm	Complete	Apr-18	
			Repair equipment failure	Complete	Nov-18	
28	Logan	00700-81	<i>Performance was driven by trees off ROW (60%) and vehicle accident (32%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Porcelain cutout replacement	Complete	Apr-18	
			Repair damage caused by trees	Complete	Jun-18	
			Repair damage caused by trees	Complete	Sep-18	
			Repair damage caused by vehicle accident	Complete	Oct-18	
			Repair damage caused by vehicle accident	Complete	Nov-18	
29	Powell Ave Sub	00513-31	<i>Performance was driven by animal contact (57%) and line failure (25%).</i>			3Q 2018 4Q 2018
			Repair line failure	Complete	Jan-18	
			Repair damage caused by animal contact	Complete	Sep-18	
30	N Meshoppen Tran	00530-65	<i>Performance was driven by equipment failure (56%) and trees off ROW (35%).</i>			
			Repair damage caused by trees during a storm	Complete	May-18	
			Repair equipment failure	Complete	Nov-18	
31	Tunkhannock	00533-65	<i>Performance was driven by trees off ROW (74%) and equipment failure (16%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by trees during a storm	Complete	May-18	
			Repair damage caused by trees during a storm	Complete	Jul-18	
			Repair equipment failure	Complete	Jul-18	

Penelec						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
32	Milroy	00128-81	<i>Performance was driven by breaker operation of unknown cause (65%) and trees off ROW (23%).</i>			3Q 2018 4Q 2018
			Restore breaker operation of unknown cause	Complete	Aug-18	
			Restore breaker operation of unknown cause	Complete	Sep-18	
			Repair damage caused by trees	Complete	Oct-18	
33 ²⁷	Shade Gap 115kV Sub	0622-82	<i>Performance was driven by equipment failure (42%), trees off ROW (29%) and ice (23%).</i>			3Q 2018 4Q 2018
			Repair damage caused by trees	Complete	Aug-18	
			Repair equipment failure	Complete	Sep-18	
			Repair damage caused by ice	Complete	Nov-18	
34	Mansfield	00699-63	<i>Performance was driven by trees off ROW (59%) and line failure (35%).</i>			1Q 2018 2Q 2018 4Q 2018
			Repair damage caused by trees during a storm	Complete	May-18	
			Circuit inspection	Complete	Oct-18	
			Repair line failure	Complete	Nov-18	
35	Springboro	00237-52	<i>Performance was driven by trees off ROW (67%) and vehicle accident (14%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by trees	Complete	Mar-18	
			Repair damage caused by vehicle accident	Complete	Apr-18	
			Repair damage caused by trees	Complete	Apr-18	
			Targeted circuit rehabilitation	To be Completed 2019	0%	
36	Thompson	00436-65	<i>Performance was driven by trees off ROW (82%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by trees during a storm	Complete	Aug-18	
			Repair damage caused by trees	Complete	Oct-18	
37	Lawrenceville	00632-63	<i>Performance was driven by non-company human error (51%) and vehicle accident (35%).</i>			2Q 2018 4Q 2018
			Repair damage caused by vehicle accident	Complete	Aug-18	
			Repair damage caused by non-company human error	Complete	Oct-18	
			Replace substation recloser	To be Completed 2019 ²⁸	50%	

²⁷ Shade Gap 0622-82 was inadvertently labeled as Elk Run 00622-23 in the 3Q 2018 report.

²⁸ The substation recloser replacement project will carry into 2019 to allow additional engineering work to be completed.

Penelec							
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters	
38	Union City	00206-43	<i>Performance was driven by equipment failure (61%) and trees off ROW (14%).</i>				1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair equipment failure	Complete	Feb-18		
			Repair equipment failure	Complete	May-18		
			Replace substation breaker	Complete	Jul-18		
			Repair equipment failure	Complete	Sep-18		
			Install new radio-controlled switch	To be Completed 2019	0%		
			Targeted circuit rehabilitation	To be Completed 2019	0%		
			Install advanced distribution protective devices	To be Completed 2019	0%		
39	Laurel Pipeline	00036-71	<i>Performance was driven by line failure (91%).</i>				
			Repair line failure	Complete	Oct-18		
40	N Meshoppen Tran	00534-65	<i>Performance was driven by trees off ROW (61%) and equipment failure (29%).</i>				1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Install radio fault indicators	Complete	Jan-18		
			Repair equipment failure	Complete	Feb-18		
			Repair damage caused by trees during a storm	Complete	May-18		
			Circuit inspection	Complete	Jul-18		
			Repair damage caused by trees	Complete	Jul-18		
			Repair damage caused by trees during a storm	Complete	Nov-18		
41	Shawville	00151-21	<i>Performance was driven by vehicle accident (55%) and equipment failure (21%).</i>				
			Repair equipment failure	Complete	Jun-18		
			Repair equipment failure	Complete	Jun-18		
			Repair damage caused by vehicle accident	Complete	Nov-18		
42	Industrial Park	00796-65	<i>Performance was driven by vehicle accident (40%), trees off ROW (36%) and line failure (16%).</i>				
			Repair line failure	Complete	May-18		
			Repair damage caused by trees during a storm	Complete	Sep-18		
			Repair damage caused by vehicle accident	Complete	Oct-18		
			On cycle tree trimming	To be Completed 2019	0%		
43	Page Road	00445-43	<i>Performance was driven by line failure (62%), equipment failure (14%) and trees off ROW (7%).</i>				3Q 2018 4Q 2018
			Repair equipment failure	Complete	Jun-18		
			Repair line failure	Complete	Jul-18		
			Repair line failure	Complete	Sep-18		
			Repair damage caused by trees during a storm	Complete	Sep-18		

Penelec						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
44	Birmingham	00168-22	<i>Performance was driven by vehicle accident (63%), trees off ROW (16%) and fuse operation of unknown cause (12%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by vehicle accident	Complete	Mar-18	
			Restore fuse operation of unknown cause	Complete	Jul-18	
			Repair damage caused by vehicle accident	Complete	Oct-18	
			Repair damage caused by trees	Complete	Dec-18	
45	Glen Fern	00512-51	<i>Performance was driven by line failure (40%), trees off ROW (28%) and vehicle accident (18%).</i>			
			Repair line failure	Complete	Jan-18	
			Repair damage caused by vehicle accident	Complete	Nov-18	
			Repair damage caused by a tree during a storm	Complete	Nov-18	
46	Philipsburg	00162-22	<i>Performance was driven by equipment failure (43%), vehicle accident (23%) and trees off ROW (15%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair equipment failure	Complete	Jan-18	
			Repair equipment failure	Complete	May-18	
			Targeted circuit rehabilitation	Complete	May-18	
			Repair damage caused by vehicle accident	Complete	Aug-18	
			Install advanced distribution protective devices	Complete	Dec-18	
			Targeted circuit rehabilitation	To be Completed 2019	0%	
			Split large circuits	To be Completed 2019	0%	
47	North Warren	00207-41	<i>Performance was driven by trees off ROW (55%) and vehicle accident (34%).</i>			
			Repair damage caused by trees during a storm	Complete	Sep-18	
			Replace substation recloser	Complete	Oct-18	
			Repair damage caused by vehicle accident	Complete	Dec-18	
			Targeted circuit rehabilitation	To be Completed 2019	0%	
48	Logan	00701-81	<i>Performance was driven by equipment failure (48%) and lightning (33%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair equipment failure	Complete	May-18	
			Repair damage caused by trees during a storm	Complete	May-18	
			Repair damage caused by lightning	Complete	Sep-18	
			Repair equipment failure	Complete	Nov-18	
49	Mildred	00771-62	<i>Performance was driven by equipment failure (98%).</i>			3Q 2018 4Q 2018
			Repair equipment failure	Complete	Jul-18	
			Repair equipment failure	Complete	Jul-18	

Penelec						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
50	Fairviews East	00242-34	<i>Performance was driven by line failure (53%) and vehicle accident (35%).</i>			
			Repair damage caused by vehicle accident	Complete	Jun-18	
			Repair damage caused by vehicle accident	Complete	Jun-18	
			Repair line failure	Complete	Oct-18	
			On cycle tree trimming	Complete	Nov-18	
51	Emlenton	00322-51	<i>Performance was driven by trees off ROW (58%) and animal contact (30%).</i>			1Q 2018 4Q 2018
			Repair damage caused by animal contact	Complete	Jun-18	
			Repair damage caused by trees during a storm	Complete	Nov-18	
			Replace substation recloser	To be Completed 2019	0%	
52	Philipsburg	00161-22	<i>Performance was driven by line failure (30%), vehicle accident (27%) and lightning (23%).</i>			3Q 2018 4Q 2018
			Repair line failure	Complete	Jan-18	
			Repair damage caused by lightning	Complete	Jul-18	
			Repair damage caused by vehicle accident	Complete	Apr-18	
53	East Hickory	00201-41	<i>Performance was driven by trees off ROW (94%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by trees	Complete	May-18	
			Repair damage caused by trees during a storm	Complete	Jul-18	
			Repair damage caused by trees	Complete	Sep-18	
			Repair damage caused by trees	Complete	Dec-18	
			Replace substation recloser	Complete	Dec-18	
On cycle tree trimming	To be Completed 2019	0%				
54	Brookville	00125-23	<i>Performance was driven by trees off ROW (65%) and vehicle accident (26%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by vehicle accident	Complete	Apr-18	
			Repair damage caused by trees during a storm	Complete	Sep-18	
			Replace cap & pin insulators	Complete	Sep-18	
			Circuit inspection	Complete	Oct-18	
			On cycle tree trimming	To be Completed 2019	0%	
55	Madera	00167-22	<i>Performance was driven by lightning (50%), equipment failure (24%) and recloser operation of an unknown cause (11%).</i>			2Q 2018 3Q 2018 4Q 2018
			Repair equipment failure	Complete	Jan-18	
			Repair damage caused by lightning	Complete	Jul-18	

Penelec						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
56	Reed Street	00549-31	<i>Performance was driven by breaker operation of unknown cause (91%).</i>			3Q 2018 4Q 2018
			Restore breaker operation of unknown cause	Complete	Jun-18	
			Restore breaker operation of unknown cause	Complete	Jul-18	
57	Clymer Sub	00110-13	<i>Performance was driven by equipment failure (90%).</i>			
			Repair equipment failure	Complete	Apr-18	
			Repair equipment failure	Complete	Oct-18	
58	Cooper	00069-11	<i>Performance was driven by trees off ROW (60%) and line failure (38%).</i>			3Q 2018 4Q 2018
			Repair line failure	Complete	May-18	
			Repair damage caused by trees	Complete	Sep-18	
			Install new radio-controlled switch	To be Completed 2019	0%	
			On cycle tree trimming	To be Completed 2019	0%	
59	Portage	00186-72	<i>Performance was driven by line failure (94%).</i>			
			Repair line failure	Complete	Jan-18	
			Repair line failure	Complete	Nov-18	
60	Athens	00511-61	<i>Performance was driven by line failure (51%), breaker operation of unknown cause (20%) and trees off ROW (16%).</i>			1Q 2018 4Q 2018
			Restore breaker operation of unknown cause	Complete	Jan-18	
			Repair line failure	Complete	Aug-18	
			Repair damage caused by trees	Complete	Oct-18	
61	Timblin	00115-23	<i>Performance was driven by lightning (44%) and trees off ROW (34%).</i>			
			Repair damage caused by lightning	Complete	Oct-18	
			Repair damage caused by trees during a storm	Complete	Jul-18	
			On cycle tree trimming	To be Completed 2019	0%	
62	Kearsarge	00528-31	<i>Performance was driven by line failure (88%).</i>			3Q 2018 4Q 2018
			Repair line failure	Complete	Feb-18	
			Repair line failure	Complete	Aug-18	

Penelec					
Unranked circuits appearing 2 or more quarters in the last 4 quarters					
Substation	Circuit	1Q 2018	2Q 2018	3Q 2018	4Q 2018
Brooklyn	00749-65	X	X	X	
Brookville	00120-23	X	X		
Brookville	00155-23	X	X		
Brookville West	00121-23	X	X	X	
Church	00426-34	X	X		
Dubois	00131-23	X	X		
Dubois Central	00119-23	X	X		
East Towanda	00525-62		X	X	
Fallen Timbers	00693-22	X	X		
French Road	00219-31	X	X	X	
Green Garden	00536-31	X	X	X	
Hilltop	00040-11	X	X		
Hooversville	00018-12		X	X	
Hooversville	00019-12	X	X	X	
Kearsarge	00527-31	X	X		
Lake Como	00788-65	X	X	X	
Lawrenceville	00326-63	X	X		
Lewis Run	00408-42	X	X		
Mansfield	00559-63	X	X		
Pittsburgh Avenue	00524-31	X	X	X	
Saxton	00631-73	X	X		
Susquehanna	00280-65	X	X		
Tionesta Sw St	00498-51	X		X	
Two Mile	00127-42	X	X		
Tyrone North	00643-22	X	X		
Utica Junction	00318-51	X	X	X	
Walnut Street	00520-31	X	X	X	
Wyalusing	00532-62	X	X	X	
Youngsville	00256-41	X	X	X	

Penelec				
Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed
Athens	00514-61	Replace cap & pin insulators	Complete	Jul-18
Brookville	00120-23	Circuit inspection	Complete	Oct-18
East Sayre	00518-61	Targeted circuit rehabilitation	Complete	Oct-18
Farmers Valley	00414-42	Circuit inspection	Complete	Sep-18
		On cycle tree trimming	Complete	Sep-18
Green Garden	00536-31	Replace cap & pin insulators	Complete	Oct-18
Hooversville	00019-12	Replace cap & pin insulators	Complete	Dec-18
Lake Como	00788-65	Replace substation recloser	Complete	Sep-18
Lewis Run	00408-42	Replace substation breaker	Complete	Dec-18
Mansfield	00559-63	Targeted circuit rehabilitation	Complete	Nov-18
Meshoppen	00283-65	On cycle tree trimming	Complete	Oct-18
Patton	00060-72	On cycle tree trimming	Complete	Nov-18
Philipsburg	00164-22	On cycle tree trimming	Complete	Oct-18
Russell Hill	00765-65	Circuit inspection	Complete	Oct-18
Somerset	00017-12	Install advanced distribution protective devices	Complete	Apr-18
Union City	00208-43	Install advanced distribution protective devices	Complete	Dec-18
		On cycle tree trimming	Complete	Dec-18

Penn Power						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
1	Jamestown	W-162	<i>Performance was driven by trees off ROW (82%), line failure (7%) and bird (6%).</i>			2Q 2018 3Q 2018 4Q 2018
			Pole was replaced and equipment repaired following tree damage during storm	Complete	Mar-18	
			Repair damage caused by trees during a storm	Complete	Jun-18	
			Replace switch and repair line failure	Complete	Jun-18	
			Pole was replaced and equipment repaired following tree damage	Complete	Sep-18	
			Pole was replaced and equipment repaired following tree damage	Complete	Oct-18	
2	Thompson Run	D550	<i>Performance was driven by trees off ROW (84%) and vehicle (13%).</i>			3Q 2018 4Q 2018
			Repair damage caused by tree	Complete	Mar-18	
			Repair damage caused by tree	Complete	Jul-18	
			Repair damage caused by tree	Complete	Oct-18	
			Repair damage caused by a vehicle	Complete	Dec-18	
3	Adams Ridge	W780	<i>Performance was driven by trees off ROW (51%), vehicle (33%) and line failure (8%).</i>			3Q 2018 4Q 2018
			Pole was replaced and equipment repaired following damage by vehicle	Complete	Feb-18	
			Repair damage caused by tree	Complete	Sep-18	
			Repair line failure	Complete	Nov-18	
4	Koppel	D-531	<i>Performance was driven by trees off ROW (75%), line failure (10%) and vehicle (9%).</i>			2Q 2018 4Q 2018
			Pole was replaced and equipment repaired following damage by vehicle	Complete	Feb-18	
			Repair line failure	Complete	Sep-18	
			Pole was replaced and equipment repaired following tree damage during storm	Complete	Nov-18	
5	Ingomar	D620	<i>Performance was driven by trees off ROW (100%).</i>			3Q 2018 4Q 2018
			Repair damage caused by tree	Complete	Feb-18	
			Repair damage caused by tree	Complete	Jul-18	
			Pole was replaced and equipment repaired following tree damage	Complete	Sep-18	
6	Hickory	W-243	<i>Performance was driven by trees off ROW (91%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Restore breaker operation caused by line fault/trees during storm	Complete	Mar-18	
			Repair damage caused by tree	Complete	Aug-18	
7	Seneca	W701	<i>Performance was driven by unknown (56%), animal (19%) and trees off row (14%).</i>			3Q 2018 4Q 2018
			Replace fuse after operation caused by animal contact	Complete	Jun-18	
			Restore breaker operation of unknown cause during storm	Complete	Jun-18	
			Restore recloser operation of unknown cause	Complete	Jul-18	
			Repair damage caused by tree	Complete	Sep-18	

Penn Power						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
8	Camp Reynolds	W-134	<i>Performance was driven by trees off ROW (61%), line failure (13%) and animal (9%).</i>			1Q 2018 4Q 2018
			Repair damage caused by tree	Complete	Feb-18	
			Porcelain cutout replacement	Complete	Feb-18	
			Repair damage caused by animal contact	Complete	Mar-18	
			Replace fuse after operation caused by animal contact	Complete	Jun-18	
			Repair damage caused by trees during a storm	Complete	Jul-18	
			Repair line failure	Complete	Dec-18	
Patrol entire circuit for off ROW hazard trees. (Mid-cycle addition to 2018 tree trimming cycle).	Complete	Dec-18				
9	Canal	W-101	<i>Performance was driven by trees off ROW (52%), equipment failure (25%) and unknown (19%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by trees during a storm	Complete	Jan-18	
			Repair damage caused by trees during a storm	Complete	Mar-18	
			Replace broken insulators	Complete	Jul-18	
			Restore breaker operation of unknown cause	Complete	Aug-18	

Penn Power					
Unranked circuits appearing 2 or more quarters in the last 4 quarters					
Substation	Circuit	1Q 2018	2Q 2018	3Q 2018	4Q 2018
McDowell	W-121	X	X	X	
Perry	W-156	X	X		

Penn Power				
Unranked circuits with remedial actions scheduled to be or recently completed				
Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed
McDowell	W-121	Pole was replaced and equipment repaired following tree damage during storm	Complete	Mar-18
		Patrol entire circuit for off ROW hazard trees. (Mid-cycle addition to 2018 tree trimming cycle)	Complete	Oct-18
Perry	W-156	Patrol entire circuit for off ROW hazard trees. (Mid-cycle addition to 2018 tree trimming cycle)	Complete	Nov-18
Hadley	W-195	Patrol entire circuit for off ROW hazard trees. (Mid-cycle addition to 2018 tree trimming cycle)	Complete	Dec-18
Stoneboro	W-132	Patrol entire circuit for off ROW hazard trees. (Mid-cycle addition to 2018 tree trimming cycle)	Complete	Oct-18

West Penn						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
1	Rutan	Bristoria	<i>Performance driven by trees off ROW (61%) and equipment failure (24%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by a tree during a storm	Complete	Feb-18	
			Repair damage caused by a tree during a storm	Complete	Feb-18	
			Repair equipment failure during a storm	Complete	Feb-18	
			Repair damage caused by a tree during a storm	Complete	Apr-18	
			Repair damage caused by a tree during a storm	Complete	Apr-18	
			Repair equipment failure during a storm	Complete	Jul-18	
			Repair damage caused by a tree during a storm	Complete	Aug-18	
			Repair equipment failure	Complete	Oct-18	
			Repair damage caused by a tree during a storm	Complete	Oct-18	
			Overhead circuit inspection	To be Completed 2019	0%	
2	Emporium	Emporium Jct	<i>Performance driven by trees off ROW (75%) and wind (24%).</i>			2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by a tree	Complete	May-18	
			Repair damage caused by a tree during a storm	Complete	May-18	
			Repair damage caused by wind during a storm	Complete	May-18	
			Repair damage caused by a tree	Complete	Jun-18	
			Repair damage caused by a tree	Complete	Jul-18	
			Repair equipment failure during a storm	Complete	Jul-18	
			Repair damage caused by a tree during a storm	Complete	Sep-18	
			Repair damage caused by a tree	Complete	Sep-18	
			Restore unknown outage	Complete	Sep-18	
			Repair damage caused by a tree during a storm	Complete	Oct-18	
3	North Union	Gallatin	<i>Performance driven by wind (87%).</i>			3Q 2018 4Q 2018
			Repair damage caused by a tree during a storm	Complete	Jul-18	
			Repair line failure	Complete	Jul-18	
			Repair equipment failure during a storm	Complete	Jul-18	
			Repair equipment failure during a storm	Complete	Sep-18	
			Zone 2 infrared inspection	Complete	Sep-18	
			Repair damage caused by an animal	Complete	Dec-18	

West Penn						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
4	Shaffers Corner	Seventh St Rd	<i>Performance driven by trees off ROW (80%) and trees on ROW (17%).</i>			2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by a tree	Complete	Apr-18	
			Repair damage caused by a tree during a storm	Complete	Apr-18	
			Repair damage caused by a tree during a storm	Complete	Apr-18	
			Repair damage caused by a tree during a storm	Complete	Jul-18	
			Repair damage caused by a tree during a storm	Complete	Sep-18	
			Overhead circuit inspection	Complete	Oct-18	
			Restore unknown outage	Complete	Oct-18	
			Repair damage caused by a tree during a storm	Complete	Nov-18	
5	Flintstone	Chaneyville	<i>Performance driven by trees off ROW (74%) and line failure (20%).</i>			2Q 2018 3Q 2018 4Q 2018
			Repair line failure	Complete	Apr-18	
			Repair damage caused by a tree during a storm	Complete	Apr-18	
			Repair damage caused by a tree	Complete	Jun-18	
			Repair damage caused by a tree during a storm	Complete	Jun-18	
			Repair damage caused by a tree	Complete	Aug-18	
			Repair damage caused by a tree during a storm	Complete	Sep-18	
			Zone 2 infrared inspection	Complete	Sep-18	
			Repair equipment failure	Complete	Dec-18	
6	Driftwood	Driftwood	<i>Performance driven by wind (79%) and trees off ROW (17%).</i>			3Q 2018 4Q 2018
			Repair equipment failure	Complete	Aug-18	
			Repair damage caused by a tree	Complete	Aug-18	
			Zone 2 infrared inspection	Complete	Oct-18	
			Repair damage caused by a tree	Complete	Nov-18	
7	Houston	McGovern	<i>Performance driven by trees off ROW (75%) and line failure (21%).</i>			1Q 2018 2Q 2018 4Q 2018
			Repair damage caused by a tree	Complete	Feb-18	
			Repair line failure	Complete	May-18	
			Repair line failure during a storm	Complete	Jun-18	
			Zone 1 infrared inspection	Complete	Sep-18	
			Repair damage caused by a tree during a storm	Complete	Oct-18	
			Repair line failure during a storm	Complete	Dec-18	

West Penn						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
8	Smith	Francis Mine	<i>Performance driven by trees off ROW (78%) and unknown (16%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by a tree during a storm	Complete	Jan-18	
			Repair damage caused by a tree	Complete	May-18	
			Repair damage caused by a tree during a storm	Complete	Jul-18	
			Restore unknown outage during a storm	Complete	Aug-18	
			Reliability job to install fuses	Complete	Aug-18	
			Repair damage caused by a tree	Complete	Scp-18	
			Repair damage caused by a tree during a storm	Complete	Dec-18	
9	St. Clair	Lesnett	<i>Performance driven by line failure (69%) and trees off ROW (22%).</i>			3Q 2018 4Q 2018
			Repair line failure	Complete	Jul-18	
			Repair line failure during a storm	Complete	Aug-18	
			Repair damage caused by a tree during a storm	Complete	Aug-18	
			Zone 2 infrared inspection	Complete	Aug-18	
Repair damage caused by an animal	Complete	Oct-18				
10	Dutch Fork	Claysville	<i>Performance driven by trees off ROW (62%) and unknown (12%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by a tree	Complete	Jan-18	
			Forced outage to repair damage	Complete	Feb-18	
			Repair damage caused by a tree during a storm	Complete	Feb-18	
			Forced outage to repair damage during a storm	Complete	May-18	
			Repair damage caused by a tree during a storm	Complete	May-18	
			Restore unknown outage during a storm	Complete	Jun-18	
			Restore unknown outage	Complete	Aug-18	
			Repair damage caused by a tree during a storm	Complete	Sep-18	
			Enhanced WPC remediation	Complete	Nov-18	
			Repair damage caused by a tree	Complete	Dec-18	
11	Kersey	Shelvey	<i>Performance driven by wind (84%) and trees on ROW (12%).</i>			2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by a tree during a storm	Complete	May-18	
			Repair damage caused by wind during a storm	Complete	May-18	
			Repair damage caused by a tree during a storm	Complete	Jun-18	
			Repair damage caused by a tree	Complete	Jul-18	
			Restore unknown outage	Complete	Nov-18	
On cycle tree trimming	To be Completed 2019	0%				

West Penn						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
12	Emporium	West Creek	<i>Performance driven by wind (70%) and trees off ROW (19%).</i>			3Q 2018 4Q 2018
			Repair equipment failure during a storm	Complete	Jul-18	
			Repair damage caused by a tree	Complete	Sep-18	
			Restore unknown outage	Complete	Sep-18	
			Repair equipment failure	Complete	Oct-18	
13	Thompson Farm	Toftrees	<i>Performance driven by line failure (66%) and equipment failure (26%).</i>			3Q 2018 4Q 2018
			Repair equipment failure during a storm	Complete	Jul-18	
			Repair line failure	Complete	Aug-18	
			Repair line failure	Complete	Oct-18	
			Repair line failure during a storm	Complete	Nov-18	
14	Waterville	Waterville	<i>Performance driven by trees off ROW (68%) and other electric utility (28%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by a tree during a storm	Complete	Jan-18	
			Restore outage caused by other electric utility	Complete	Apr-18	
			Repair damage caused by a tree during a storm	Complete	Apr-18	
			Zone 2 fuse installation	Complete	May-18	
			Repair damage caused by a tree during a storm	Complete	Aug-18	
			Repair damage caused by a tree	Complete	Aug-18	
Restore outage caused by other electric utility	Complete	Dec-18				
15	Peters	Library	<i>Performance driven by lightning (50%) and vehicle accident (35%).</i>			3Q 2018 4Q 2018
			Repair equipment failure during a storm	Complete	Aug-18	
			Repair damage caused by lightning during a storm	Complete	Sep-18	
			Restore unknown outage	Complete	Nov-18	
			Overhead circuit inspection	To be Completed 2019	0%	

West Penn							
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters	
16	Smith	Florence	<i>Performance driven by trees off ROW (45%) and line failure (27%).</i>				1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by a vehicle	Complete	Jan-18		
			Repair damage caused by a tree	Complete	Feb-18		
			Restore unknown outage	Complete	Feb-18		
			Repair damage caused by a tree during a storm	Complete	Apr-18		
			Repair damage caused by a tree during a storm	Complete	Apr-18		
			Forced outage to repair damage	Complete	Jun-18		
			Repair line failure	Complete	Jul-18		
			Repair equipment failure during a storm	Complete	Sep-18		
			Repair damage caused by a tree during a storm	Complete	Sep-18		
			Repair damage caused by a tree	Complete	Dec-18		
			Enhanced WPC remediation	To be Completed 2019	0%		
17	Dutch Fork	W Alexander	<i>Performance driven by trees off ROW (70%) and line failure (12%).</i>				1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair line failure during a storm	Complete	Jan-18		
			Repair damage caused by a tree during a storm	Complete	Feb-18		
			Repair damage caused by a tree	Complete	Apr-18		
			Restore unknown outage	Complete	May-18		
			Repair damage caused by a tree	Complete	Jun-18		
			Repair damage caused by a tree	Complete	Jul-18		
			Repair line failure during a storm	Complete	Sep-18		
			Repair damage caused by a tree	Complete	Oct-18		
On cycle tree trimming	To be Completed 2019	96%					
18	Franklin	West Waynesburg	<i>Performance driven by vehicle (50%) and trees off ROW (30%).</i>				1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Forced outage to repair damage	Complete	Jan-18		
			Repair damage caused by a vehicle	Complete	Jan-18		
			Repair damage caused by a tree	Complete	May-18		
			Repair damage caused by a tree during a storm	Complete	May-18		
			Repair damage caused by a tree	Complete	Aug-18		
			Forced outage to repair damage	Complete	Sep-18		
			Zone 1 infrared inspection	Complete	Sep-18		
Restore unknown outage	Complete	Oct-18					

West Penn						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
19	Kane	Russell City	<i>Performance driven by trees off ROW (80%).</i>			2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by a tree during a storm	Complete	Apr-18	
			Repair damage caused by a tree during a storm	Complete	May-18	
			Repair line failure during a storm	Complete	Jul-18	
			Repair damage caused by a tree	Complete	Sep-18	
			Forced outage to repair damage during a storm	Complete	Oct-18	
			Underground substation exit replacement	Complete	Oct-18	
			Repair damage caused by a tree	Complete	Dec-18	
20	Peters	McMurray	<i>Performance driven by trees off ROW (88%).</i>			3Q 2018 4Q 2018
			Repair damage caused by a tree during a storm	Complete	Jul-18	
			Restore unknown outage	Complete	Aug-18	
			Repair line failure	Complete	Aug-18	
			Repair line failure	Complete	Oct-18	
			Overhead circuit inspection	Complete	Nov-18	
21	Piney Fork	Gillhall	<i>Performance driven by trees off ROW (75%) and line failure (20%).</i>			1Q 2018 2Q 2018 4Q 2018
			Repair equipment failure	Complete	Feb-18	
			Repair line failure	Complete	Mar-18	
			Forced outage to repair damage during a storm	Complete	Apr-18	
			Repair line failure during a storm	Complete	Apr-18	
			Repair damage caused by a tree during a storm	Complete	Oct-18	
			Line rehabilitation	Complete	Dec-18	
22	Ridgway	Montmorenci	<i>Performance driven by trees off ROW (84%).</i>			3Q 2018 4Q 2018
			Repair damage caused by a tree during a storm	Complete	Sep-18	
			Zone 2 infrared inspection	Complete	Sep-18	
			Repair equipment failure during a storm	Complete	Nov-18	
23	Bethlen	Darlington	<i>Performance driven by trees off ROW (61%) and vehicle accident (18%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by a vehicle	Complete	Jan-18	
			Repair damage caused by a tree during a storm	Complete	Apr-18	
			Repair damage caused by a tree	Complete	Aug-18	
			Repair damage caused by a tree during a storm	Complete	Aug-18	
			Forced outage to repair damage	Complete	Sep-18	
			Overhead circuit inspection	Complete	Oct-18	
			Repair line failure	Complete	Nov-18	
Repair damage caused by a tree	Complete	Nov-18				

West Penn							
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters	
24	Bedford Road	Rt 220 North	<i>Performance driven by trees off ROW (63%) and vehicle accident (24%).</i>				3Q 2018 4Q 2018
			Forced outage to repair damage	Complete	Aug-18		
			Repair damage caused by a tree	Complete	Aug-18		
			Restore outage caused by human error-noncompany	Complete	Sep-18		
			Repair damage caused by a vehicle	Complete	Nov-18		
			On cycle tree trimming	To be Completed 2019	99%		
25	Youngwood	Spare ²⁹	<i>Performance driven by trees off ROW (43%) and line failure (37%).</i>				
			Repair damage caused by lightning	Complete	Oct-18		
			Repair damage caused by a tree during a storm	Complete	Oct-18		
			Repair line failure during a storm	Complete	Nov-18		
26	Karns City	Kaylor	<i>Performance driven by vehicle (40%), trees off ROW (33%) and line failure (23%).</i>				2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by a tree during a storm	Complete	Apr-18		
			Repair damage caused by a tree during a storm	Complete	Apr-18		
			Repair damage caused by a vehicle during a storm	Complete	May-18		
			Repair damage caused by a tree during a storm	Complete	Aug-18		
			Overhead circuit inspection	Complete	Oct-18		
			Repair line failure during a storm	Complete	Oct-18		
			Repair damage caused by a vehicle	Complete	Nov-18		
27	Rutan	Windridge	<i>Performance driven by trees off ROW (60%) and equipment failure (12%).</i>				3Q 2018 4Q 2018
			Forced outage to repair damage during a storm	Complete	Jul-18		
			Repair damage caused by a tree	Complete	Sep-18		
			Repair damage caused by a tree during a storm	Complete	Sep-18		
			Repair equipment failure	Complete	Oct-18		
			Repair damage caused by a tree during a storm	Complete	Nov-18		
28	St. Clair	Valley	<i>Performance driven by vehicle (39%), trees off ROW (18%) and trees on ROW (13%).</i>				3Q 2018 4Q 2018
			Restore outage due to an overload	Complete	Jul-18		
			Zone 2 infrared inspection	Complete	Aug-18		
			Repair equipment failure	Complete	Sep-18		
			Repair line failure	Complete	Oct-18		
			Repair damage caused by a tree during a storm	Complete	Nov-18		

²⁹ Switching was performed from the Armbrust circuit to a spare breaker inside the Youngwood substation to allow for maintenance on the breaker on the Armbrust circuit.

West Penn						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
29	Smith	Burgettstown	<i>Performance driven by trees off ROW (29%), line failure (29%) and unknown (16%).</i>			
			Repair equipment failure	Complete	Oct-18	
			Repair line failure during a storm	Complete	Nov-18	
			Repair damage caused by a tree during a storm	Complete	Nov-18	
			On cycle tree trimming	Complete	Nov-18	
30	Krendale	Unionville	<i>Performance driven by trees off ROW (62%) and equipment failure (29%).</i>			
			Repair equipment failure	Complete	Nov-18	
			Forced outage to repair damage during a storm	Complete	Nov-18	
			Repair damage caused by a tree	Complete	Dec-18	
			Repair damage caused by a tree during a storm	Complete	Nov-18	
		Overhead circuit inspection	To be Completed 2019	0%		
31	Sewickley	Wendel	<i>Performance driven by trees off ROW (64%) and equipment failure (20%).</i>			3Q 2018 4Q 2018
			Zone 1 infrared inspection	Complete	Jul-18	
			Forced outage to repair damage	Complete	Aug-18	
			Repair equipment failure	Complete	Sep-18	
			Repair damage caused by a tree during a storm	Complete	Sep-18	
		Repair damage caused by a tree	Complete	Nov-18		
32	Avella	W Middletown	<i>Performance driven by line failure (43%) and trees off ROW (38%).</i>			1Q 2018 2Q 2018 4Q 2018
			Repair damage caused by a tree during a storm	Complete	Jan-18	
			Repair damage caused by a tree	Complete	Feb-18	
			Repair damage caused by a tree during a storm	Complete	Apr-18	
			Repair line failure during a storm	Complete	Jun-18	
			Repair line failure during a storm	Complete	Jun-18	
			Line rehabilitation	Complete	Aug-18	
			Repair line failure	Complete	Oct-18	
		Repair damage caused by a tree during a storm	Complete	Dec-18		
33	St. Clair	Skyridge	<i>Performance driven by line failure (66%) and forced outage (18%).</i>			3Q 2018 4Q 2018
			Repair line failure	Complete	Jul-18	
			Repair damage caused by a tree during a storm	Complete	Aug-18	
			Zone 1 infrared inspection	Complete	Aug-18	
			Forced outage to repair damage during a storm	Complete	Sep-18	
		Repair line failure	Complete	Oct-18		

West Penn						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
34	St. Clair	Fort Couch	<i>Performance driven by trees off ROW (80%).</i>			3Q 2018 4Q 2018
			Repair damage caused by a tree	Complete	Jul-18	
			Zone 2 infrared inspection	Complete	Aug-18	
			Repair damage caused by a tree during a storm	Complete	Sep-18	
			Repair damage caused by a tree	Complete	Oct-18	
35	Kiski Valley	Kittanning Rd	<i>Performance driven by trees off ROW (66%) and line failure (20%).</i>			1Q 2018 2Q 2018 3Q 2018 4Q 2018
			Repair damage caused by a tree during a storm	Complete	Jan-18	
			Repair line failure	Complete	Mar-18	
			Repair damage caused by a tree during a storm	Complete	Apr-18	
			Forced outage to repair damage	Complete	Jun-18	
			Zone 1 infrared inspection	Complete	Aug-18	
			Repair damage caused by a tree during a storm	Complete	Sep-18	
Repair line failure	Complete	Dec-18				
36	Silverville	Cole Road	<i>Performance driven by trees off ROW (72%) and line failure (11%).</i>			2Q 2018 4Q 2018
			Repair equipment failure	Complete	May-18	
			Repair line failure during a storm	Complete	May-18	
			Repair damage caused by a tree during a storm	Complete	May-18	
			Repair damage caused by a tree during a storm	Complete	May-18	
			Zone 2 infrared inspection	Complete	Aug-18	
			Repair equipment failure	Complete	Oct-18	
Repair damage caused by a tree during a storm	Complete	Nov-18				
37	Butler	Hospital	<i>Performance driven by vehicle (66%) and trees off ROW (29%).</i>			
			Repair damage caused by a vehicle during a storm	Complete	Nov-18	
			Repair damage caused by a tree during a storm	Complete	Nov-18	
38	Purcell	Artemas	<i>Performance driven by trees off ROW (68%) and line failure (17%).</i>			2Q 2018 4Q 2018
			Repair line failure during a storm	Complete	Apr-18	
			Repair damage caused by a tree during a storm	Complete	Apr-18	
			Repair damage caused by a tree during a storm	Complete	Nov-18	
			On cycle tree trimming	To be Completed 2019	0%	

West Penn						
Rank	Substation	Circuit	Remedial Action Planned or Taken	Status of Remedial Work Completed	Progress of Remedial Work or Date Completed	Appeared in 2 of 4 Quarters
39	Saltsburg	Salina	<i>Performance driven by equipment failure (63%), trees off ROW (12%) and vehicle (12%).</i>			1Q 2018 3Q 2018 4Q 2018
			Repair equipment failure	Complete	Feb-18	
			Repair damage caused by a tree	Complete	Feb-18	
			Repair damage caused by a tree	Complete	Sep-18	
			On cycle tree trimming	Complete	Dec-18	
Repair equipment failure	Complete	Dec-18				
40	Saint Thomas	Edenville	<i>Performance driven by equipment failure (38%) and trees off ROW (36%).</i>			
			Zone 2 infrared inspection	Complete	Sep-18	
			Repair equipment failure	Complete	Oct-18	
			Repair damage caused by a tree	Complete	Oct-18	
Restore unknown outage	Complete	Oct-18				

West Penn					
Unranked circuits appearing 2 or more quarters in the last 4 quarters					
Substation	Circuit	1Q 2018	2Q 2018	3Q 2018	4Q 2018
Cecil	Bishop	X	X		
Cooperstown	Twin Willows	X	X	X	
Emporium	Town Emporium	X	X		
Fayetteville	Bikle Road	X	X		
Franklin	Rogersville	X	X		
Frazier	Star Junction		X	X	
Harwick	Harmar	X	X	X	
Hickory	Fort Cherry	X	X		
Mateer	Dime Rd	X	X		
Murrycrest	Sardis Road	X	X		
Peters	Venetia	X	X		
Sherwin	West Sunbury	X	X		
Vanceville	Vanceville	X	X	X	
Westraver	Pittsburgh Coal	X	X		
White Valley	Borlands Rd	X	X		
White Valley	Congruity	X	X		
White Valley	Export	X	X	X	

West Penn				
Unranked circuits with remedial actions scheduled to be or recently completed				
Substation	Circuit	Remedial Action Planned	Status of Remedial Work	Progress of Remedial Work
Buckeye No. 3	Paisley	Zone 2 fuse installation	Complete	Oct-18
Cecil	Bishop	Reliability job to install fuses	Complete	Nov-18
Krendale	Meridian	Reliability job to install fuses	Complete	Dec-18
Murrycrest	Sardis Road	Overhead circuit inspection	Complete	Oct-18
Pangburn Hill	Pangburn Hill	On cycle tree trimming	Complete	Oct-18
Vanceville	Vanceville	On cycle tree trimming	Complete	Dec-18
White Valley	Borlands	Overhead circuit inspection	Complete	Nov-18
White Valley	Export	On cycle tree trimming	Complete	Oct-18

Submitted Pursuant to 52 Pa. Code § 57.195(d) and (e)

ATTACHMENT C

FirstEnergy's Compliance with Terms of the March 30, 2015 Management Audit Order

Pursuant to Docket Nos. D-2014-2365991 and D-2014-2365992, (Appendix A)(2): Met-Ed and Penelec are directed to provide a quarterly report that shall consist of a chart documenting the Open Priority 3 repairs and the Overdue Priority 3 (P3) Repairs for each company each quarter.

	Met-Ed		Penelec	
	Open P3 Conditions	Overdue P3 Conditions	Open P3 Conditions	Overdue P3 Conditions
1Q	979	930	951	725
2Q	679	634	639	479
3Q	358	318	464	268
4Q	394	305	192	141

Pursuant to Docket Nos. D-2014-2365991, D-2014-2365992, D-2014-2365993, and D-2014-2365994, (Appendix A)(3): FirstEnergy is directed to track and measure line hit incidents, causes of line hits, and damage recovery amounts for all third-party line hit incidents for each company.

Met-Ed – Third Party Line Hit Incidents 4th Quarter 2018 12-Month Rolling³⁰			
Cause of Line Hit	Number of Incidents	Invoice Amount (\$)	Recovery Amount (\$)
Dig In - Other	16	3,177	0
Excavated in Tolerance	34	191,469	32,396
Excavation Inconsistent with Ticket Scope	17	27,139	18,177
Excavation Prior to Lawful Start Date	0	0	0
Expired Ticket	3	1,947	1,947
Hand Digging	1	427	0
Marked Improperly	12	20,916	12,395
No Ticket	29	41,237	26,620
Total	112	286,312	91,535

Penelec – Third Party Line Hit Incidents 4th Quarter 2018 12-Month Rolling³¹			
Cause of Line Hit	Number of Incidents	Invoice Amount (\$)	Recovery Amount (\$)
Dig In - Other	20	1,341	357
Excavated in Tolerance	38	57,051	41,108
Excavation Inconsistent with Ticket Scope	3	0	0
Excavation Prior to Lawful Start Date	3	1,511	0
Expired Ticket	6	1,800	1,421
Hand Digging	3	0	0
Marked Improperly	39	118,798	58,335
No Ticket	54	94,785	34,712
Total	166	275,286	135,933

³⁰ Data includes line hits closed during the rolling twelve-month reporting period as well as line hits that are still open as of December 31, 2018.

³¹ Data includes line hits closed during the rolling twelve-month reporting period as well as line hits that are still open as of December 31, 2018.

Penn Power – Third Party Line Hit Incidents 4th Quarter 2018 12-Month Rolling³²			
Cause of Line Hit	Number of Incidents	Invoice Amount (\$)	Recovery Amount (\$)
Dig In - Other	8	10,492	867
Excavated in Tolerance	10	8,936	6,568
Excavation Inconsistent with Ticket Scope	1	2,313	2,448
Excavation Prior to Lawful Start Date	2	6,443	0
Expired Ticket	4	9,083	1,991
Hand Digging	0	0	0
Marked Improperly	6	8,436	8,436
No Ticket	14	12,957	8,295
Total	45	58,660	28,605

West Penn – Third Party Line Hit Incidents 4th Quarter 2018 12-Month Rolling³³			
Cause of Line Hit	Number of Incidents	Invoice Amount (\$)	Recovery Amount (\$)
Dig In - Other	49	61,772	18,364
Excavated in Tolerance	9	15,716	14,193
Excavation Inconsistent with Ticket Scope	7	2,500	1,628
Excavation Prior to Lawful Start Date	1	1,476	1,476
Expired Ticket	5	7,693	7,550
Hand Digging	16	34,212	22,323
Marked Improperly	24	108,466	105,167
No Ticket	38	87,731	67,920
Total	149	319,566	238,621

Cause of Line Hit	Definition
Dig In - Other	Still under investigation
Excavated in Tolerance	Excavator didn't use prudent digging techniques within the Tolerance Zone
Excavation Inconsistent with Ticket Scope	Excavation outside dig box and/or scope of ticket
Excavation Prior to Lawful Start Date	Three business days prior to start of excavation from when the ticket was called in to mark
Expired Ticket	After ten business days have passed, the ticket is considered expired
Hand Digging	Excavator was hand digging within the Tolerance Zone, however the facility was still hit
Marked Improperly	Ticket called in, facility and/or equipment was not marked properly
No Ticket	No contact was made to create a dig-request ticket

³² Data includes line hits closed during the rolling twelve-month reporting period as well as line hits that are still open as of December 31, 2018.

³³ Data includes line hits closed during the rolling twelve-month reporting period as well as line hits that are still open as of December 31, 2018.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**Joint 4th Quarter 2018 Reliability Report – :
Metropolitan Edison Company, :
Pennsylvania Electric Company :
Pennsylvania Power Company and West :
Penn Power Company – Public Version :**

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PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

CERTIFICATE OF SERVICE

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

Service by first class mail, as follows:

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

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

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

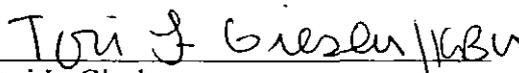
Scott Rubin
Utility Workers Union of America
333 Oak Lane
Bloomsburg, PA 17815-2036

Service by electronic mail, as follows:

David Dulick, General Counsel
David.Dulick@ccsenergy.com

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

Dated: February 1, 2019


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

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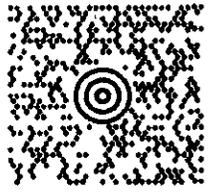
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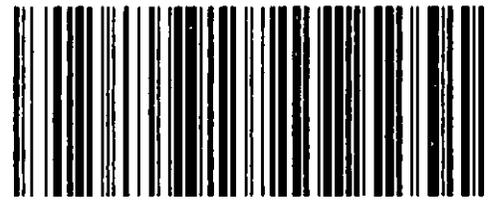


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Agency: PUC

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