FirstEnergy

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April 30, 2026

VIA ELECTRONIC FILING

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

Re: 2025 Annual Reliability Report - FirstEnergy Pennsylvania Electric Company
Docket No. M-2023-3039027

Dear Secretary Homsher,

Pursuant to 52 Pa. Code § 57.195(a) and (b), enclosed for filing is the Joint 2025 Annual Reliability Report ("Report") of FirstEnergy Pennsylvania Electric Company ("FE PA") on behalf of the Met-Ed Rate District ("Met-Ed"), Penelec Rate District ("Penelec"), Penn Power Rate District ("Penn Power"), and West Penn Rate District ("West Penn").[1]

Additionally, FE PA has enclosed the Company's Emergency Load Shedding Procedures, SCC-EOP-001 Emergency Operations and SCC-EOP-003 – Load Dump Procedures to be included in the FE PA 2025 Annual Reliability filing.

Please contact me if you have any questions.

Sincerely,

Angelina Umstead

Angelina Umstead

AU/dml
Enclosures
c: As Per Certificate of Service
D. Searfoorce – Bureau of Technical Utility Services (via electronic mail)
J. Van Zant – Bureau of Technical Utility Services (via electronic mail)
Derek Ruhl - PaPUC Bureau of Technical Utility Services (via electronic mail)

[1] By Order entered on December 7, 2023, the Pennsylvania Public Utility Commission (the "Commission") granted certain approvals and certificates of public convenience for the unification of the four Companies into one company, FirstEnergy Pennsylvania Electric Company, or "FE PA". *Joint Application of Met- Ed Rate District, Penelec Rate District, Penn Power Rate District, West Penn Rate District, Keystone Appalachian Transmission Company, Mid-Atlantic Interstate Transmission, LLC, and FirstEnergy Pennsylvania Electric Company*, Docket Nos. A-2023-3038771, et al. (Order entered December 7, 2023).

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

2025 Annual Reliability Report

FirstEnergy Pennsylvania Electric Company on behalf of the Met-Ed Rate District, Penelec Rate District, Penn Power Rate District, and West Penn Rate District
Pursuant to 52 Pa. Code § 57.195(a) and (b)

2025 Annual Reliability Report
FirstEnergy Pennsylvania Electric Company on behalf of the Met-Ed, Penelec, Penn Power, and West Penn Rate Districts Pursuant to 52 Pa. Code Chapter § 57.195(a) and (b)

The following 2025 Report ("Report") is submitted to the Pennsylvania Public Utility Commission ("PaPUC" or "Commission") by FirstEnergy Pennsylvania Electric Company ("FE PA" or the "Company") on behalf of the Met-Ed Rate District ("Met-Ed"), Penelec Rate District ("Penelec"), Penn Power Rate District ("Penn Power") and West Penn Rate District ("West Penn").

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

FE PA serves more than two million Pennsylvania customers, with a service territory covering more than 20,000 square miles. In 2025, the FE PA Rate Districts committed to operating the distribution systems in a manner that resulted in safe, reasonable, and cost-effective reliable service.

Methods to improve the efficiency, adequacy, and reliability of the distribution system were a continual focus. FE PA utilizes core programs to support cost-effective and reliable service. These programs include, but are not limited to:

- Long-Term Infrastructure Improvement Plans ("LTIIP")
    - The Company first began to execute its PA LTIIP programs in 2016. In 2025, the Company began the Commission approved LTIIP III. The LTIIP III program shifted to deeper and focused investments into circuits and projects with the most impactful solutions. Investments in System Resiliency include: addressing worst performing circuits with targeted reconductoring, rehabilitation, selective undergrounding, relocations and adding SCADA; Voltage conversion to increase operational flexibility and reduce line/equipment failure; Substation modernization to add SCADA and strengthen the infrastructure; and Circuit Protection, Sectionalizing, Automation creating tie points for resiliency and operational flexibility. These investments will reduce the number of outage events, reduce the number of customers affected by an event, and enable faster restoration, combining to significantly improve the customer experience.

- Inspection and Maintenance ("I&M")
  - The Distribution Inspection & Maintenance Practices[1] are designed to assist in determining the need for, and prioritization of, the repair or replacement of distribution system components and facilities.
  - Poles showing incipient decay or poles that are thirty-five years old or older will be manually bored or inspected by the use of a Resistograph. The Resistograph is a sophisticated electronically controlled drill that measures the relative density of wood in timber structures. Driven by a drill motor, a long, thin needle is inserted into the wood pole in order to assess its density, structural integrity, and shell thickness. Either manual boring or the Resistograph will be used at the Company's discretion; however, manual boring is the predominately utilized method.
- Vegetation Management
  - FE PA performs vegetation management on its distribution circuits in order to promote the continued safe and reliable operation of its distribution system. The vegetation management program specification is designed to support line reliability, maintain access, enable repairs, or support service restoration and to strengthen safe and reliable service. The vegetation management program specification prunes vegetation to achieve required cycle clearance, with circuits generally on four to five year cycles, which includes removing selected incompatible trees within the clearing zone corridor; removing certain defective limbs that are overhanging primary conductors; controlling selected incompatible brush mechanically or using herbicide, or both; selectively relieving limbs causing mechanical strain on secondary/service lines; and removing targeted off-corridor priority trees that are dead, dying, diseased, and leaning or significantly encroaching the corridor.

[1] Pursuant to Pa. Code § 57.198(a), every two years an electric distribution company shall file with the Commission a biennial plan for the periodic inspection, maintenance, repair, and replacement of its facilities. The Company submitted their Biennial Inspection, Maintenance, Repair and Replacement Plan for the period January 1, 2025 through December 31, 2026 on September 29, 2023 which was deemed approved on July 17, 2023 pursuant to 52 Pa. Code § 57.198(i). On February 5, 2024, revised FE PA Rate District I&M plans related to pole inspections were approved by the Commission at Docket No. M-2009-2094773 and M-2023-3039027.

  - Forestry is leveraging advanced analytic and remote sensing technology to assess vegetative condition and risk to drive risk informed decisions to forestry investments to operate more effectively and drive impactful work completion. This includes plans to perform a dead tree detection project through remote sensing of aerial imagery to further quantify system condition and drive investment decisions.
  - Portions of a circuit that experience high customer interruption minutes due to vegetation-caused outages may be targeted to include the removal of certain healthy limbs which overhang primary conductors based on tree species and condition.
  - In response to damage caused by the Emerald Ash Borer, a program to proactively remove Ash Trees off right-of-way has been implemented.
  - Post-storm circuit patrols target the areas with high tree-related outages. Circuit patrols identify trees damaged in a storm that may eventually lead to a future outage. Once identified, the tree is removed. In addition, damaged equipment identified as part of the circuit patrol is repaired or replaced.
- Customers Experiencing Multiple Interruptions ("CEMI")
  - The CEMI program is aimed to reduce frequent or repeated outages for affected clusters of customers or frequently operated devices.
- Load Forecasting and Distribution Planning
  - The load forecasting application is used to estimate future substation and circuit loading based upon historical load data and the planning criteria guidelines are then used to provide a consistent approach for planning the safe, reliable, orderly, and economic expansion of the distribution system.
- Circuit Protection
  - Circuit protection practices are aimed at achieving safety and security for the public and employees, maximizing service reliability to customers, minimizing damage to distribution equipment, and establishing a consistent process and set of application standards for distribution circuit protection.

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

- Minimizing Outage Impact
    - The Company incorporates design philosophies that support grid operation resulting in maximized reliability. These philosophies include instantaneous breaker tripping on select circuits, circuit sectionalizing devices, and remote device operation, such as supervisory control and data acquisition ("SCADA"), to minimize the impact of an outage when possible.
- Storm Exercises
    - FE PA performs annual storm exercises. A well-designed exercise provides a low-risk environment to test and validate capabilities, familiarizes personnel with plans, procedures, roles and responsibilities, and fosters meaningful interaction and communication across internal and external organizations.
- Summer Readiness
    - Summer is the time when FE PA experiences the highest system loads and most damaging storms. In order to prepare for this period of the year, FE PA performs summer readiness activities such as capacitor inspections, substation inspections, transmission system reliability and capability review, and post-storm reviews to identify and disseminate lessons learned after significant events.
- Smart Meters
    - FE PA completed mass deployment of smart meters to customers across Pennsylvania. Smart meter installation is a step toward a more modernized electric system that will enable automated meter readings. Smart meters also assist during outage restoration periods, especially when there are a significant number of single customer outages, by allowing FE PA to ping the meter to determine if a customer's service has been restored.
- Incident Command System ("ICS")
    - The Company has been utilizing an ICS structure, which is designed to enable effective and efficient incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organization. By expanding the use of ICS, the Company's incident response ability is improved, and reliability is enhanced by utilizing a common system for incident response personnel (both intrastate and interstate).

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

The primary drivers impacting reliability performance continue to be: 1) weather (primarily the impact of minor storms); 2) tree-related outages, specifically off right-of-way trees,[1] occurring during inclement weather; and 3) line and equipment failures. The Company is using the strategies and tools, as laid out above, to address these outage causes and continue to make improvements to reliability performance.

In 2025, the FE PA Rate Districts had mostly favorable performance regarding the twelve-month standards for System Average Interruption Duration Index ("SAIDI"), System Average Interruption Frequency Index ("SAIFI"), and Customer Average Interruption Duration Index ("CAIDI"). At the FE PA level, all three reliability metrics improved over the 2024 performance.

Key drivers of both immediate and sustainable performance improvements included targeted investments under the 2025 LTIIP program, a daily operational focus on performance management that produced rapid gains in CAIDI, and the expanded use of technology and advanced analytics to proactively reduce tree-related SAIDI. Specifically, in FE PA Rate Districts:

- Met-Ed finished the year with a 24% SAIDI and 18% SAIFI improvement over 2024 performance. Met-Ed achieved a significant improvement in tree related SAIDI with a reduction of 35% from 2024. In addition, approximately 45% of Met-Ed SAIDI performance was due to five, large non-excludible events.
- Penelec improved all three primary reliability metrics in 2025 as compared to 2024 highlighted by a 31% SAIDI improvement. The performance improvements are largely attributable to LTIIP projects that included circuit ties and hardened circuits, contributing to the lowest line and equipment SAIDI minutes over the last four years. In addition, operational improvements drove a reduction of CAIDI from 2024 to 2025.
- Penn Power experienced a 6% SAIDI improvement over 2024 performance, the primary driver being a 20% CAIDI reduction, which was the lowest level in the last four years.

Also adding to the SAIDI improvement was the best tree related SAIDI minutes in the last four years.

- West Penn had a 2% SAIDI improvement in 2025 over 2024 and has experienced an improvement in SAIDI performance in each of the last three years. LTIIP projects continue to drive improvements in the line and equipment failure outage causes contributing to the lowest SAIDI minutes in that category over the last four years.

Reliability Results

The table below, taken from the 4th Quarter 2025 Reliability Report, shows that six of twelve reliability indices in 2025 were at or better than the Commission's twelve-month standards but none of the indices were better than benchmark. FE PA demonstrated year-over-year improvement, as the number of reliability indices meeting Commission standards increased from four in 2024 to six in 2025.

2025 (12-Mo Rolling)	Met-Ed			Penelec			Penn Power			West Penn		
	Benchmark	12-Month Standard	12-Month Actual	Benchmark	12-Month Standard	12-Month Actual	Benchmark	12-Month Standard	12-Month Actual	Benchmark	12-Month Standard	12-Month Actual
SAIFI	1.15	1.38	1.69	1.26	1.52	1.72	1.12	1.34	1.19	1.05	1.26	1.23
CAIDI	117	140	225.33	117	141	143.00	101	121	116.59	170	204	202.62
SAIDI	135	194	379.70	148	213	245.79	113	162	138.66	179	257	248.24
MAIFI[2]			0.535			0.631			0.229			
Customers Served[3]	586,267			592,418			175,687			730,586		
Number of Sustained Interruptions	15,866			18,443			3,962			15,833		
Customers Affected	987,886			1,018,234			208,947			895,071		
Customer Minutes	222,604,315			145,611,306			24,360,945			181,360,828		
Number of Customer Momentary Interruptions	313,368			373,730			40,223					

[2] MAIFI values are not available for West Penn.
[3] Represents the average number of customers served during the reporting period.

Section 57.195(b)(2) *A description of each major event that occurred during the year being reported on, including the time and duration of the event, the number of customers affected, the cause of the event and any modified procedures adopted to avoid or minimize the impact of similar events in the future.*[4]

Major Events

FE PA Rate District	Customers Affected	Time and Duration of the Event		Cause of the Event	Commission Approval Status
Met-Ed	60,536	Duration	86 hours 43 minutes	Winter Storm Jett	March 31, 2025
		State Date/Time	February 16, 2025 0218		
		End Date/Time	February 19, 2025 1711		
Penelec	104,243	Duration	128 hours 7 minutes	Thunderstorm and Wind Event	April 18,2025
		Start Date/Time	March 15, 2025 0840		
		End Date/Time	March 20, 2025 1647		
West Penn	50,331	Duration	139 hours 39 minutes	Thunderstorm and Wind Event	July 8, 2026
		Start Date/Time	March 15, 2025 1110		
		End Date/Time	March 21, 2025 0649		
Penelec	152,171	Duration	123 hours 20 minutes	High winds and rain	August 18, 2025
		Start Date/Time	April 29, 2025 1713		
		End Date/Time	May 4, 2025 2033		
Penn Power	21,662	Duration	121 hrs 51 minutes	High winds and rain	August 18, 2025
		Start Date/Time	April 29, 2025 1636		
		End Date/Time	May 4, 2025 1827		
West Penn	263,948	Duration	160 hours 50 min	High winds and rain	August 18, 2025
		Start Date/Time	April 29, 2025 1620		
		End Date/Time	May 6, 2025 0910		
Penelec	7,755	Duration	130 hours 47 minutes	Heavy rain and extreme winds	December 8, 2025
		Start Date/Time	July 3, 2025 1510		
		End Date/Time	July 9, 2025 0157		

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

Section 57.195(b)(3) *A table showing the actual values of each of the reliability indices (SAIFI, CAIDI, SAIDI, and if available, MAIFI) for the EDC's service territory for each of the preceding 3 calendar years. The report shall include the data used in calculating the indices, namely the average number of customers served, the number of sustained customer minutes interruptions, the number of customers affected and the minutes of interruption. If MAIFI values are provided, the number of customer momentary interruptions shall also be reported.*

Reliability Indices by Rate District

Historic 12-Month Rolling Reliability Indices				
	Index	**2023**	**2024**	**2025**
Met-Ed	SAIFI	1.27	2.06	1.69
	CAIDI	201.66	241.50	225.33
	SAIDI	256.86	498.20	379.70
	MAIFI	0.301	0.453	0.535
	Customer Minutes	149,205,685	289,699,592	222,604,315
	Customers Affected	739,898	1,199,572	987,886
	Minutes of Interruption	4,801,821	8,658,211	6,801,409
	Customers Served[5]	580,873	581, 491	586,267
Penelec	SAIFI	1.60	1.79	1.72
	CAIDI	189.20	199.18	143.00
	SAIDI	303.32	355.90	245.79
	MAIFI	0.488	0.708	0.631
	Customer Minutes	177,485,102	210,740,963	145,611,306
	Customers Affected	938,093	1,058,034	1,018,234
	Minutes of Interruption	4,816,388	6,651,681	4,552,678
	Customers Served[6]	585,139	592,129	592,418
Penn Power	SAIFI	0.78	1.01	1.19
	CAIDI	156.51	146.58	116.59
	SAIDI	121.31	147.48	138.66
	MAIFI	0.018	0.040	0.229
	Customer Minutes	20,774,644	25,861,413	24,360,945
	Customers Affected	132,740	176,436	208,947
	Minutes of Interruption	929,286	1,121,846	919,054
	Customers Served[6]	171,259	175,356	175,687

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

Historic 12-Month Rolling Reliability Indices				
	Index	**2023**	**2024**	**2025**
West Penn	SAIFI	1.07	1.28	1.23
	CAIDI	266.17	199.75	202.62
	SAIDI	285.16	255.49	248.24
	Customer Minutes	207,454,636	185,850,178	181,360,828
	Customers Affected	779,396	930,429	895,071
	Minutes of Interruption	5,702,377	5,403,542	5,478,359
	Customers Served[6]	727,499	727,426	730,586

See tables below for the three-year standard results for each Rate District:

Three-Year Rolling Year-End 2025	**Met-Ed**		**Penelec**	
	Three-Year Standard	Three-Year Actual	Three-Year Standard	Three-Year Actual
SAIFI	1.27	1.67	1.39	1.70
CAIDI	129	223	129	177
SAIDI	163	378	179	302

Three-Year Rolling Year-End 2025	**Penn Power**		**West Penn**	
	Three-Year Standard	Three-Year Actual	Three-Year Standard	Three-Year Actual
SAIFI	1.23	.99	1.16	1.19
CAIDI	111	140	187	223
SAIDI	136	136	217	263

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

Section 57.195(b)(4) *A breakdown and analysis of outage causes during the year being reported on, including the number and percentage of service outages, the number of customers interrupted, the customer interruption minutes categorized by outage cause such as equipment failure, animal contact, tree related, and so forth. Proposed solutions to identified service problems shall be reported.*

Outages by Cause – Met-Ed Rate District

Outage by Cause				
2025 12-Month Rolling	Met-Ed			
Cause	Customer Minutes	Number of Sustained Interruptions	Customers Affected	% Based on Customer Minutes
Trees Off Row-Tree	85,786,825	3,654	236,767	38.54%
Equipment Failure	52,518,831	2,789	187,826	23.59%
Trees Off Row-Limb	15,494,345	1,370	61,512	6.96%
Line Failure	12,964,606	921	59,711	5.82%
Trees On Row	12,489,718	480	31,517	5.61%
Forced Outage	10,798,432	704	135,876	4.85%
Unknown	10,575,860	1,345	81,947	4.75%
Vehicle	6,355,967	381	34,509	2.86%
Wind	4,645,927	283	19,546	2.09%
Animal	3,806,515	1,927	56,530	1.71%
Trees - Sec/Service	1,746,696	706	4,012	0.78%
Lightning	1,557,749	217	5,073	0.70%
Overload	879,036	144	8,566	0.39%
Object Contact With Line	785,472	46	11,819	0.35%
Fire	536,903	28	6,420	0.24%
Human Error - Company	490,503	62	30,290	0.22%
Human Error -Non-Company	380,451	70	3,708	0.17%
Bird	376,328	588	6,984	0.17%
Other Utility-Non Elec	141,499	16	1,120	0.06%
Ug Dig-Up	131,940	40	325	0.06%
Customer Equipment	69,250	47	3,412	0.03%
Other Electric Utility	27,981	13	36	0.01%
Contamination	17,680	7	108	0.01%
Vandalism	12,834	6	69	0.01%
Previous Lightning	6,665	16	33	0.00%
Ice	2,762	4	12	0.00%
Call Error	1,776	1	74	0.00%
Switching Error	1,764	1	84	0.00%
Total	**222,604,315**	**15,866**	**987,886**	**100%**

Outages by Cause – Penelec Rate District

Outage by Cause				
2025 12-Month Rolling	**Penelec**			
Cause	**Customer Minutes**	**Number of Sustained Interruptions**	**Customers Affected**	**% Based on Customer Minutes**
Trees Off Row-Tree	65,984,391	3,632	268,199	45.32%
Equipment Failure	21,053,951	2,861	182,963	14.46%
Line Failure	16,236,821	2,325	135,791	11.15%
Unknown	12,323,360	2,811	142,599	8.46%
Forced Outage	5,782,183	1,312	62,554	3.97%
Vehicle	5,103,665	507	29,486	3.50%
Wind	4,147,792	435	33,116	2.85%
Trees Off Row-Limb	3,975,009	558	25,867	2.73%
Animal	3,566,630	1,766	38,366	2.45%
Lightning	1,907,463	297	15,295	1.31%
Human Error - Company	1,280,248	105	38,753	0.88%
Bird	890,709	465	15,101	0.61%
Other Electric Utility	750,041	107	3,131	0.52%
Trees - Sec/Service	680,564	735	2,444	0.47%
Overload	572,608	69	8,795	0.39%
Human Error -Non-Company	511,082	90	4,501	0.35%
Trees On Row	294,094	79	1,820	0.20%
Object Contact With Line	216,244	37	3,034	0.15%
Ug Dig-Up	128,727	82	649	0.09%
Ice	53,233	47	758	0.04%
Fire	51,178	27	860	0.04%
Customer Equipment	39,517	19	2,014	0.03%
Switching Error	25,986	7	1,832	0.02%
Vandalism	14,679	6	76	0.01%
Contamination	13,806	45	121	0.01%
Other Utility-Non Elec	4,786	7	85	0.00%
Previous Lightning	2,539	12	24	0.00%
Call Error	0	0	0	0.00%
Total	**145,611,306**	**18,443**	**1,018,234**	**100%**

Outages by Cause – Penn Power Rate District

Outage by Cause				
2025 12-Month Rolling	**Penn Power**			
Cause	**Customer Minutes**	**Number of Sustained Interruptions**	**Customers Affected**	**% Based on Customer Minutes**
Trees off ROW - Tree	7,648,937	808	36,498	31.40%
Line Failure	4,531,554	500	23,501	18.60%
Unknown	2,968,358	387	57,260	12.18%
Equipment Failure	2,954,999	423	21,593	12.13%
Vehicle	1,339,098	118	10,427	5.50%
Forced Outage	1,157,440	272	23,526	4.75%
Trees Off Row-Limb	1,102,887	234	6,803	4.53%
Animal	673,665	425	7,369	2.77%
Human Error - Company	480,253	20	7,221	1.97%
Bird	439,622	358	3,929	1.80%
Lightning	290,690	122	1,424	1.19%
Trees On Row	184,638	40	484	0.76%
Overload	135,801	51	1,541	0.56%
Wind	115,051	27	501	0.47%
Trees - Sec/Service	84,278	104	304	0.35%
Other Utility-Non Elec	63,186	8	3,685	0.35%
Customer Equipment	55,670	8	701	0.23%
Object Contact With Line	38,396	13	200	0.16%
Human Error -Non-Company	36,897	15	1,015	0.15%
Fire	21,507	5	96	0.09%
Ug Dig-Up	19,231	15	94	0.08%
Other Electric Utility	17,828	5	770	0.07%
Vandalism	646	1	2	0.00%
Ice	313	3	3	0.00%
Contamination	0	0	0	0.00%
Call Error	0	0	0	0.00%
Switching Error	0	0	0	0.00%
Total	**24,360,945**	**3,962**	**208,947**	**100%**

Outages by Cause – West Penn Rate District

Outage by Cause				
2025 12-Month Rolling	**West Penn**			
Cause	**Customer Minutes**	**Number of Sustained Interruptions**	**Customers Affected**	**% Based on Customer Minutes**
Trees Off Row-Tree	84,084,089	4,440	270,797	46.36%
Wind	20,152,710	446	51,140	11.11%
Equipment Failure	16,478,868	2,120	108,953	9.09%
Unknown	14,927,517	1,504	133,844	8.23%
Line Failure	14,541,087	2,020	72,712	8.02%
Forced Outage	9,622,787	1,260	115,996	5.31%
Vehicle	6,743,369	487	37,051	3.72%
Trees Off Row-Limb	4,552,736	567	28,386	2.51%
Animal	4,298,840	1,623	40,602	2.37%
Lightning	1,357,697	185	6,827	0.75%
Trees On Row	1,218,665	119	3,193	0.67%
Object Contact With Line	758,956	63	2,748	0.42%
Human Error -Non-Company	580,107	84	6,907	0.32%
Bird	513,363	397	3,730	0.28%
Trees - Sec/Service	422,505	338	856	0.23%
Other Electric Utility	393,389	14	1,374	0.22%
Human Error - Company	292,807	34	7,462	0.16%
Overload	101,648	18	430	0.06%
Fire	89,665	23	386	0.05%
Ug Dig-Up	86,367	46	1,071	0.05%
Customer Equipment	67,693	22	262	0.04%
Contamination	30,326	2	109	0.02%
Ice	23,361	9	110	0.01%
Other Utility-Non Elec	20,619	5	111	0.01%
Previous Lightning	1,218	4	10	0.00%
Vandalism	439	3	4	0.00%
Call Error	0	0	0	0.00%
Total	**181,360,828**	**15,833**	**895,071**	**100%**

Proposed Solutions

FE PA analyzes its outage data to develop solutions for improving reliability in the Met-Ed rate district. The following paragraphs identify the top outage causes for the rolling twelve-month period ending December 31, 2025, and associated actions designed to address these outage causes.

To improve system reliability, FE PA performs cycle-length tree trimming and enhanced tree trimming in select locations. Enhanced tree trimming removes healthy limbs overhanging primary conductors. FE PA's options under the law are strictly limited when it comes to all forms of off-corridor tree management. However, FE PA is legally permitted to identify off-corridor priority trees that are dead, dying, diseased, leaning, or significantly encroaching the corridor and remove those trees when customer consent is obtained or easement rights permit. FE PA is active in pursuing this option, when available, to remove the highest risk trees. Trees identified with a high potential to cause a future outage are targeted for removal to prevent an interruption of electrical service to FE PA's customers. Furthermore, FE PA continues its program to mitigate trees subject to damage from the Emerald Ash Borer. FE PA will also review areas off-cycle to mitigate tree risk in high impact areas.

To reduce the likelihood of equipment failure outages, FE PA follows inspection and maintenance ("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. In addition, FE PA continues to execute its LTIIP, which consist of capital investments and operational programs intended to maintain and enhance the efficiency, safety, adequacy, and reliability of the distribution system. These initiatives are designed to accelerate the realization of reliability benefits for customers, as reflected in the reported performance results. FE PA has also accelerated their LTIIP III investment to provide reliability improvements to customers sooner. In addition, FE PA will make holistic upgrades to the entire three-phase backbone of worst performing circuits. This work includes, but is not limited to, replacing poles, wooden crossarms with fiberglass, conductor, and installing SCADA devices where applicable

Section 57.195(b)(5) *A list of the major remedial efforts taken to date and planned for circuits that have been on the worst performing 5% of circuits list for a year or more.*

See Attachment A for Worst Performing Circuits – Remedial Actions

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

T&D Inspection and Maintenance Programs

Inspection and Maintenance		Met-Ed		Penelec		Penn Power		West Penn	
2025		Planned	Completed	Planned	Completed	Planned	Completed	Planned	Completed
Forestry	Transmission (Miles)	288	288	491	491	56	56	180	180
	Distribution (Miles)	2,998	3,052	3,755	3,870	1,424	1,413[7]	4,375	4,418
Transmission	Aerial Patrols	2	2	2	2	2	2	2	2
	Groundline	1,129	1,502	3,572	4,713	345	507	0	8
Substation	Substation Inspections Class A	424	424	782	782	154	154	932	932
	Substation Inspections Class B	424	424	782	782	154	154	932	932
	Substation Inspections Class C	1,696	1,696	3,128	3,128	616	616	3,728	3,728
	Transformers[8]	145	145	437	429	14	14	342	340
	Breakers[9]	75	75	418	364	7	7	372	370
	Relay Schemes[10]	179	176	141	141	18	18	172	170
Distribution	Capacitors	4,782	4,820	8,529	8,529	958	958	3,739	3,739
	Poles	37,000	37,000	40,000	40,069	11,092	11,092	44,800	44,800
	Reclosers	3,338	3,338	3,827	3,827	1,246	1,246	4,046	4,046
	Radio-Controlled Switches	1,996	2,021	2,620	2,645	Penn Power has no radio-controlled switches		West Penn has no radio-controlled switches	

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

[7] The remaining distribution miles from 2025 were completed in 1st quarter 2026.
[8] Substation Transformers Inspection and Maintenance work was deferred into 2026 for Penelec and West Penn.
[9] Substation Breakers Inspection and Maintenance work was deferred into 2026 for Penelec and West Penn.
[10] Substation Relay Schemes Inspection and Maintenance work was deferred into 2026 for West Penn.

Section 57.195(b)(7) *A comparison of budgeted versus actual transmission and distribution operation and maintenance expenses for the year being reported on in total and detailed by the EDC's own functional account code of FERC account code as available. Explanations of any variances shall be included. Budgeted vs. Actual T&D Operation & Maintenance Expenditures*

Met-Ed Rate District T&D O&M - 2025 ($)					
Transmission					
Category		**2025 Actuals**	**2025 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	-$2,229	$0	100%	1
561	Load Dispatching	-$42,003	$18,783	-324%	2
562	Station Expenses	$5,620	$4,255	32.08%	3
563	Overhead Lines Expenses	$58,477	$43,581	34.18%	4
565	Transmission of Electricity by Others	$3,031,677	$4,514,440	-33%	5
566	Miscellaneous Transmission Expenses	$72,732	$10,500	592.67%	3
567	Rents	$0	$0	100%	
568	Maintenance Supervision and Engineering	$6,483	$0	100%	6
569	Maintenance of Structures	$64,403	$56,098	14.80%	3
570	Maintenance of Station Equipment	$102,609	$212,834	-52%	7
571	Maintenance of Overhead Lines	$183,273	-$48,349	-479.06%	8
572	Transmission-Maintenance of Underground Lines	$0	$0	100%	
573	Maintenance of Miscellaneous Transmission Plant	$0	$0	100%	
575	Market Administration, Monitoring & Compliance Services	$0	$0	100%	
Transmission Total		**$3,481,041**	**$4,812,142**		
Distribution					
Category		**2025 Actuals**	**2025 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	$1,330,069	$1,255,846	6%	
581	Load Dispatching	$379,207	$442,143	-14%	9
582	Station Expenses	$295,235	$716,200	-59%	10
583	Overhead Line Expenses	$469,629	$620,497	-24%	9
584	Underground Line Expenses	$1,525,996	$0	100%	6
586	Meter Expenses	$3,917,316	$4,570,200	-14%	11
587	Customer Installations Expenses	$0	$0	100%	
588	Miscellaneous Distribution Expenses	$11,818,568	$7,223,256	64%	12
589	Rents	$576,525	$0	100%	13
590	Maintenance Supervision and Engineering	$493,835	$478,438	3%	
591	Maintenance of Structures	$0	$3,468	-100%	14
592	Maintenance of Station Equipment	$6,646,124	$5,808,457	14%	3
593	Maintenance of Overhead Lines	$84,896,247	$70,365,045	21%	8
594	Maintenance of Underground Lines	$1,343,363	$3,981,897	-66%	15
595	Maintenance of Line Transformer	$118,493	$9,683	1124%	3
596	Maintenance of Street Lighting and Signal Systems	$913,428	$525,957	74%	3
597	Maintenance of Meters	$2,097,124	$2,155,756	-3%	
598	Maintenance of Miscellaneous Distribution Plant	$503,941	$1,713,875	-71%	16
Distribution Total		**$117,325,098**	**$99,870,718**		
Met-Ed Rate District Total		**$120,806,139**	**$104,682,860**		

Variance Explanations (Variances 10% or greater)	
1	Under budget due to supervision and engineering overheads being less than planned.
2	Under budget due to PJM reimbursable services settling to load dispatching.
3	Over budget due to labor requirements being greater than planned.
4	Over budget due to License, Permits, and Regulations being greater than planned.
5	Under budget due to lower Network Integration Transmission Services (NITS) charges which is a result of less customers shopping than anticipated.
6	Over budget due to contractor costs being greater than planned.
7	Under budget due to contributions in aid of construction from customers being greater than planned.
8	Over budget due to labor requirements and Outside Services/Contractors being greater than planned.
9	Under budget due to labor requirements being less than planned.
10	Under budget due to contractor costs and Utilities being less than planned.
11	Under budget due to labor costs and Computer software maintenance being less than planned.
12	Over budget due to labor requirements, transportation, and Outside Services/Contractors being greater than planned.
13	Over budget due to Joint use rentals being greater than planned.
14	Under budget due to Outside Services/Contractors being less than planned.
15	Under budget due to labor and transportation requirements, and Outside Services/Contractors expenses being less than planned.
16	Under budget due to Labor requirements and Materials expenses being less than planned.

Penelec Rate District T&D O&M - 2025 ($)					
Transmission					
	Category	**2025 Actuals**	**2025 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	-$2,868	$0	100%	1
561	Load Dispatching	-$65,900	$63,129	-204%	2
562	Station Expenses	$9,201	$31,043	-70%	3
563	Overhead Lines Expenses	$63,089	$31,417	101%	4
564	Transmission-Underground Line Expenses	$420	$0	100%	
565	Transmission of Electricity by Others	$47,772,853	$53,387,251	-11%	5
566	Miscellaneous Transmission Expenses	$162,087	$61,400	164%	6
567	Rents	$0	$0	100%	
568	Maintenance Supervision and Engineering	$2,465	$5,290	-53%	2
569	Maintenance of Structures	$0	$0	100%	
570	Maintenance of Station Equipment	$267,796	$0	100%	6
571	Maintenance of Overhead Lines	$209,225	-$52,489	-499%	7
572	Transmission-Maintenance of Underground Lines	$0	$0	100%	
573	Maintenance of Miscellaneous Transmission Plant	$0	$0	100%	
575	Market Administration, Monitoring & Compliance Services	$0	$0	100%	
Transmission Total		**$48,418,368**	**$53,527,040**		
Distribution					
	Category	**2025 Actuals**	**2025 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	$1,734,570	$1,231,282	41%	7
581	Load Dispatching	$554,769	$411,178	35%	6
582	Station Expenses	$451,958	$8,938	4957%	7
583	Overhead Line Expenses	$342,813	$405,929	-16%	2
584	Underground Line Expenses	$1,576,556	$1,215,000	30%	8
586	Meter Expenses	$4,535,394	$5,065,758	-10%	9
587	Customer Installations Expenses	$0	$0	100%	
588	Miscellaneous Distribution Expenses	$16,687,674	$11,071,007	51%	7
589	Rents	$962,808	$3,737,926	-74%	10
590	Maintenance Supervision and Engineering	$552,968	$517,667	7%	
591	Maintenance of Structures	$0	$0	100%	
592	Maintenance of Station Equipment	$7,411,057	$8,579,093	-14%	2
593	Maintenance of Overhead Lines	$88,218,782	$68,544,646	29%	7
594	Maintenance of Underground Lines	$1,401,364	$1,762,966	-21%	11
595	Maintenance of Line Transformer	$103,528	$0	100%	12
596	Maintenance of Street Lighting and Signal Systems	$2,085,187	$1,096,785	90%	13
597	Maintenance of Meters	$2,905,470	$3,084,655	-6%	
598	Maintenance of Miscellaneous Distribution Plant	$649,244	$454,999	43%	8
Distribution Total		**$130,174,141**	**$107,187,829**		
Penelec Rate District Total		**$178,592,508**	**$160,714,869**		

Variance Explanations (Variances 10% or greater)	
1	Under budget due to supervision and engineering overheads being less than planned.
2	Under budget due to labor requirements being less than planned.
3	Under budget due to employee meal reimbursements being less than planned.
4	Over budget due to labor requirements and License, Permits, and Regulations being greater than planned.
5	Under budget due to lower Network Integration Transmission Services (NITS) charges which is a result of less customers shopping than anticipated.
6	Over budget due to labor requirements being greater than planned.
7	Over budget due to labor requirements and Outside Services/Contractors being greater than planned.
8	Over budget due to Outside Services/Contractors being greater than planned.
9	Under budget due to Computer software maintenance being less than planned.
10	Under budget due to Labor requirements and contractor costs being less than planned.
11	Under budget due to other expenses being less than planned.
12	Over budget due to materials and labor requirements being greater than planned.
13	Over budget due to Labor and transportation requirements being greater than planned.

Penn Power Rate District T&D O&M - 2025 ($)					
Transmission					
Category		**2025 Actuals**	**2025 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	$497	$1,524	-67%	1
561	Load Dispatching	$7,272	$6,793	7%	
562	Station Expenses	$2,166	$0	100%	2
563	Overhead Lines Expenses	$10,585	$0	100%	3
565	Transmission of Electricity by Others	$5,937,835	$4,561,939	30%	4
566	Miscellaneous Transmission Expenses	$16,491	$5,366	207%	3
567	Rents	$0	$0	100%	
568	Maintenance Supervision and Engineering	$23,623	$30,789	-23%	3
569	Maintenance of Structures	$26,937	$16,356	65%	3
570	Maintenance of Station Equipment	-$2,157	$3,047	-171%	5
571	Maintenance of Overhead Lines	$90,656	-$13,490	-772%	6
572	Transmission-Maintenance of Underground Lines	$0	$0	100%	
573	Maintenance of Miscellaneous Transmission Plant	-$12	$0	100%	
575	Market Administration, Monitoring & Compliance Services	$0	$0	100%	
Transmission Total		**$6,113,893**	**$4,612,324**		
Distribution					
Category		**2025 Actuals**	**2025 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	$291,913	$809,408	-64%	7
581	Load Dispatching	$0	$0	100%	
582	Station Expenses	$65,283	$30,651	113%	3
583	Overhead Line Expenses	$109,688	$145,021	-24%	1
584	Underground Line Expenses	$864,307	$846,774	2%	
586	Meter Expenses	$1,008,440	$1,207,652	-16%	8
587	Customer Installations Expenses	$0	$0	100%	
588	Miscellaneous Distribution Expenses	$2,093,408	$1,339,332	56%	9
589	Rents	$55,534	$10,741	417%	10
590	Maintenance Supervision and Engineering	$139,948	$115,034	22%	11
591	Maintenance of Structures	$0	$0	100%	
592	Maintenance of Station Equipment	$1,192,807	$1,849,137	-35%	1
593	Maintenance of Overhead Lines	$23,840,519	$27,284,740	-13%	12
594	Maintenance of Underground Lines	$390,672	$174,577	124%	3
595	Maintenance of Line Transformer	$21,159	$0	100%	3
596	Maintenance of Street Lighting and Signal Systems	$112,713	$56,303	100%	13
597	Maintenance of Meters	$412,388	$633,792	-35%	1
598	Maintenance of Miscellaneous Distribution Plant	$276,505	$81,009	241%	3
Distribution Total		**$30,875,282**	**$34,584,169**		
Penn Power Total		**$36,989,175**	**$39,196,492**		

Variance Explanations (Variances 10% or greater)	
1	Under budget due to labor requirements being less than planned.
2	Over budget due to labor and telecommunication equipment and service expense being greater than planned.
3	Over budget due to labor requirements being greater than planned.
4	Over budget due to higher Network Integration Transmission Services (NITS) charges which is a result of more customers shopping than anticipated.
5	Under budget due to labor requirements and materials being less than planned.
6	Over budget due to labor requirements and Outside Services/Contractors being greater than planned.
7	Under budget due to Outside Services/Contractors being less than planned.
8	Under budget due to Computer software maintenance being less than planned.
9	Over budget due to Labor requirements, transportation, and contractor costs being greater than planned.
10	Over budget due to contributions in aid of construction from customers being less than planned.
11	Over budget due to contractor costs being greater than planned.
12	Under budget due to contractor costs being less than planned.
13	Over budget due to labor requirements and transportation expenses being greater than planned.

West Penn Rate District T&D O&M - 2025 ($)					
Transmission					
Category		**2025 Actuals**	**2025 Budget**	**Variance %**	**Notes**
560	Operation Supervision and Engineering	-$2,070	$0	100%	1
561	Load Dispatching	-$52,969	$41,311	-228%	2
562	Station Expenses	$17,747	$31,853	-44%	3
563	Overhead Lines Expenses	$141,858	$28,511	398%	4
565	Transmission of Electricity by Others	$68,016,881	$71,185,385	-4%	
566	Miscellaneous Transmission Expenses	$127,085	$10,364	1126%	5
567	Rents	$0	$0	100%	
568	Maintenance Supervision and Engineering	$405,320	$443,751	-9%	
569	Maintenance of Structures	$46,084	$54,973	-16%	6
570	Maintenance of Station Equipment	$574,968	$473,767	21%	5
571	Maintenance of Overhead Lines	$5,818,251	$4,171,860	39%	7
572	Transmission-Maintenance of Underground Lines	$0	$0	100%	
573	Maintenance of Miscellaneous Transmission Plant	$4,979	$0	100%	8
575	Market Administration, Monitoring & Compliance Services	$2,495	$0	100%	9
Transmission Total		**$75,100,630**	**$76,441,776**		
Distribution					
Category		**2025 Actuals**	**2025 Budget**	**Variance %**	**Notes**
580	Operation Supervision and Engineering	$1,749,650	$885,281	98%	7
581	Load Dispatching	$61,511	$349,734	-82%	10
582	Station Expenses	$498,280	$991,907	-50%	11
583	Overhead Line Expenses	$234,988	$298,029	-21%	3
584	Underground Line Expenses	$2,499,724	$2,042,758	22%	12
586	Meter Expenses	$5,329,795	$6,134,477	-13%	13
587	Customer Installations Expenses	$0	$0	100%	
588	Miscellaneous Distribution Expenses	$10,206,386	$9,160,117	11%	5
589	Rents	$3,293	$0	100%	14
590	Maintenance Supervision and Engineering	$482,264	$435,813	11%	12
591	Maintenance of Structures	$0	$0	100%	
592	Maintenance of Station Equipment	$7,784,724	$6,720,753	16%	15
593	Maintenance of Overhead Lines	$73,087,596	$70,174,183	4%	
594	Maintenance of Underground Lines	$1,035,519	$942,712	10%	5
595	Maintenance of Line Transformer	$138,589	$0	100%	5
596	Maintenance of Street Lighting and Signal Systems	$1,201,585	$807,784	49%	16
597	Maintenance of Meters	$1,870,968	$2,033,859	-8%	
598	Maintenance of Miscellaneous Distribution Plant	$193,402	$327,415	-41%	17
Distribution Total		**$106,378,274**	**$101,304,823**		
West Penn Rate District Total		**$181,478,903**	**$177,746,599**		

Variance Explanations (Variances 10% or greater)	
1	Under budget due to supervision and engineering overheads being less than planned.
2	Under budget due to PJM reimbursable services settling to load dispatching.
3	Under budget due to labor requirements being less than planned.
4	Over budget due to lease/rental vehicles & equipment 12 months or greater and agency support (vegetation management) being greater than planned.
5	Over budget due to labor requirements being greater than planned.
6	Under budget due to computer software maintenance being less than planned.
7	Over budget due to labor requirements and Outside Services/Contractors being greater than planned.
8	Over budget due to materials being greater than planned.
9	Over budget due to PJM Ancillary Service Market Administration, Monitoring & Compliance "Schedule 9&10" charges being greater than planned.
10	Under budget due to labor requirements and Outside Services/Contractors being less than planned.
11	Under budget due to labor requirements, transportation, and Materials and supplies being less than planned.
12	Over budget due to Outside Services/Contractors being greater than planned.
13	Under budget due to labor requirements, computer software and hardware, and Outside Services/Contractors being less than planned.
14	Over budget due to Joint use rentals being greater than planned.
15	Over budget due to labor requirements, lease and rental expenses, and Utilities being greater than planned.
16	Over budget due to Labor and transportation requirements being greater than planned.
17	Under budget due to Outside Services/Contractors being less than planned.

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

Budgeted vs. Actual T&D Capital Expenditures[11]

Met-Ed T&D Capital – 2025 ($)				
Category	**2025 Actuals**	**2025 Budget**	**Variance %**	**Notes**
Capacity	$25,693,336	$48,175,199	-47%	1
Condition	$9,136,829	$10,400,397	-12%	2
Facilities	$6,594,213	$5,231,710	26%	3
Forced	$69,144,088	$50,317,294	37%	4
Meter Related	$1,144,605	$1,466,212	-22%	5
New Business	$25,604,769	$19,335,380	32%	6
Other	$8,620,539	$8,822,961	-2%	
Reliability	$93,483,882	$91,741,454	2%	
Street Light	$1,453,414	$1,761,745	-18%	7
Tools & Equip	$3,231,157	$3,554,910	-9%	
Vegetation Mgt.	$0	$0	-100%	
Met-Ed Total	**$244,052,832**	**$240,807,261**		

Penelec T&D Capital – 2025 ($)				
Category	**2025 Actuals**	**2025 Budget**	**Variance %**	**Notes**
Capacity	$998,398	-$44,095	-2364%	8
Condition	$13,967,537	$11,623,462	20%	9
Facilities	$4,001,224	$886,543	351%	3
Forced	$98,220,115	$56,036,705	75%	4
Meter Related	$1,374,396	$989,988	39%	10
New Business	$17,249,786	$13,117,950	31%	11
Other	$10,174,727	$26,964,868	-62%	12
Reliability	$153,777,731	$120,086,682	28%	13
Street Light	$4,065,300	$3,427,655	19%	14
Tools & Equip	$5,075,518	$3,765,892	35%	15
Vegetation Mgt.	$0	$0	100%	
Penelec Total	**$308,904,732**	**$236,855,648**		

[11] Budget calculations reflects FE Forward budget placeholders.

Penn Power T&D Capital – 2025 ($)				
Category	**2025 Actuals**	**2025 Budget**	**Variance %**	**Notes**
Capacity	$21,336	$112,791	-81%	16
Condition	$2,069,952	$1,802,845	15%	17
Facilities	$3,130,712	$2,130,264	47%	3
Forced	$16,263,341	$16,177,611	1%	
Meter Related	$546,309	$510,539	7%	
New Business	$9,234,654	$7,051,315	31%	18
Other	$3,383,722	-$2,499,124	-235%	19
Reliability	$45,281,609	$44,981,236	1%	
Street Light	$765,668	$446,225	72%	14
Tools & Equip	$763,157	$1,110,884	-31%	20
Vegetation Mgt.	$0	$0	100%	
Penn Power Total	**$81,460,461**	**$71,824,586**		

West Penn Power T&D Capital – 2025 ($)				
Category	**2025 Actuals**	**2025 Budget**	**Variance %**	**Notes**
Capacity	$121,187	-$3,949,516	-103%	3
Condition	$10,832,497	$9,077,660	19%	21
Facilities	$11,447,235	$16,483,978	-31%	22
Forced	$123,942,844	$62,413,234	99%	4
Meter Related	$1,338,929	$977,202	37%	10
New Business	$21,146,149	$27,859,596	-24%	23
Other	$11,445,887	$7,251,828	58%	24
Reliability	$78,593,610	$108,682,968	-28%	25
Street Light	$2,511,497	$2,765,189	-9%	26
Tools & Equip	$2,979,886	$4,495,892	-34%	27
Vegetation Mgt.	$0	$0	100%	
West Penn Power Total	**$264,359,721**	**$236,058,033**		

Variance Explanations (Variances 10% or greater)	
1	Under budget due to Substation Projects being delayed due to material availability as well as Emergent Failures being less than planned.
2	Under budget due to Easton Distribution Switchgear Replacement project being less than planned.
3	Over budget due to timing differences in several construction projects.
4	Over budget due to higher capitalized storm expenditures and timing differences in several construction projects.
5	Under budget due to meter exchanges being less than planned.
6	Over budget due to new commercial and residential business being greater than planned.
7	Under budget due to LED streetlight replacement Program being less than planned.
8	Under budget due to timing differences in several construction projects.
9	Over budget due to Substation condition blanket and unscheduled repairs Overhead and Underground being greater than planned.
10	Over budget due to meter exchanges being greater than planned.
11	Over budget due to new commercial and facility relocation business being greater than planned.
12	Under budget due to pole replacements, Joint Use, and Accounting & General Overheads being less than planned.
13	Over budget due to timing differences in several LTIIP and PARC projects.
14	Over budget due to unscheduled repairs being greater than planned.
15	Over budget due to initiative to improve company processes and small tools purchases being greater than planned.
16	Under budget due to Overhead Regulator being less than planned.
17	Over budget due to overhead Overhead facility replacement and substation conditions being greater than planned.
18	Over budget due to new residential business being greater than planned.
19	Over budget due to new forecasting process.
20	Under budget due to MDT purchase and installations and Vehicle purchases being less than planned.
21	Over budget due to Substation Condition being greater than planned.
22	Under budget due to Facility Optimization - Greensburg Corp HQ being less than planned.
23	Under budget due to timing differences in several projects.
24	Over budget due to awards and Joint Use attachment requests being greater than planned.
25	Under budget due to timing differences in several projects including LTIIP and PARC.
26	Under budget due to Upgrade Outdoor Area lighting being less than planned.
27	Under budget due to vehicle purchases being less than planned.

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

T&D Inspection & Maintenance Programs – 2026 Goals / Objectives

T&D Inspection & Maintenance Programs - 2026				
Program/Project by Rate District	**Met-Ed**	**Penelec**	**Penn Power**	**West Penn**
Forestry				
Transmission (Miles)	259	485	137	164
Distribution (Miles)	2,518	3,282	988	3,830
Aerial Patrols	2	2	2	2
Groundline (Poles)	2	2,821	0	355
Substation Inspections Class A	418	782	154	938
Substation Inspections Class B	418	782	154	938
Substation Inspections Class C	1,672	3,128	616	3,752
Transformers	141	403	11	337
Breakers	57	312	12	350
Relay Schemes	165	303	27	242
Capacitors	4,786	8,406	942	3,622
Poles	16,510	40,000	12,658	48,024
Reclosers	1,603	3,877	1,262	4,366
Radio-Controlled Switches (2 / year)	2,230	2,796	Penn Power has no radio-controlled switches	West Penn has no radio-controlled switches

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

2026 T&D O&M Budget

Met-Ed Rate District T&D O&M - Annual 2026($)		
Transmission		
Category		**Annual Budget**
560	Operation Supervision & Engineering	$0
561	Load Dispatching	$18,832
562	Station Expenses	$4,255
563	Overhead Line Expenses	$43,581
565	Transmission of Electricity by Others	$1,756,943
566	Miscellaneous Transmission Expenses	$29,236
567	Rents	$0
568	Maintenance Supervision and Engineering	($0)
569	Maintenance of Structures	$0
570	Maintenance of Station Equipment	$442,787
571	Maintenance of Overhead Lines	$168,962
573	Maintenance of Miscellaneous Transmission Plant	$0
575	Market Administration, Monitoring & Compliance Services	$0
Transmission Total		**$2,464,595**
Distribution		
Category		**Annual Budget**
580	Operation Supervision & Engineering	$1,263,287
581	Load Dispatching	$444,637
582	Station Expenses	$1,630,809
583	Overhead Line Expenses	$1,275,730
584	Underground Line Expenses	$0
586	Meter Expenses	$1,601,401
588	Miscellaneous Distribution Expenses	$10,144,415
589	Rents	$550,619
590	Maintenance Supervision and Engineering	$397,926
591	Maintenance of Structures	$3,192
592	Maintenance of Station Equipment	$5,785,311
593	Maintenance of Overhead Lines	$62,766,435
594	Maintenance of Underground Lines	$4,069,628
595	Maintenance of Line Transformers	$10,470
596	Maintenance of Street Lighting and Signal Systems	$539,165
597	Maintenance of Meters	$2,066,629
598	Maintenance of Miscellaneous Distribution Plant	$1,336,667
Distribution Total		**$93,886,321**
Met-Ed Rate District Total		**$96,350,915**

Penelec Rate District T&D O&M - Annual 2026 ($)		
Transmission		
Category		**Annual Budget**
560	Operation Supervision & Engineering	$0
561	Load Dispatching	$58,485
562	Station Expenses	$41,963
563	Overhead Line Expenses	$42,337
565	Transmission of Electricity by Others	$50,439,007
566	Miscellaneous Transmission Expenses	$71,657
567	Rents	$0
568	Maintenance Supervision and Engineering	$5,369
569	Maintenance of Structures	$0
570	Maintenance of Station Equipment	$0
571	Maintenance of Overhead Lines	$29,112
573	Maintenance of Miscellaneous Transmission Plant	$0
575	Market Administration, Monitoring & Compliance Services	$0
Transmission Total		**$50,687,928**
Distribution		
Category		**Annual Budget**
580	Operation Supervision & Engineering	$2,321,197
581	Load Dispatching	$692,545
582	Station Expenses	($285)
583	Overhead Line Expenses	$1,230,493
584	Underground Line Expenses	$1,215,000
586	Meter Expenses	$2,087,624
588	Miscellaneous Distribution Expenses	$12,525,315
589	Rents	$343,000
590	Maintenance Supervision and Engineering	$434,116
592	Maintenance of Station Equipment	$10,170,713
593	Maintenance of Overhead Lines	$55,060,318
594	Maintenance of Underground Lines	$4,071,905
596	Maintenance of Street Lighting and Signal Systems	$945,224
597	Maintenance of Meters	$3,592,681
598	Maintenance of Miscellaneous Distribution Plant	$120,658
Distribution Total		**$94,810,505**
Penelec Rate District Total		**$145,498,433**

Penn Power Rate District T&D O&M – Annual 2026 ($)		
Transmission		
Category		**Annual Budget**
560	Operation Supervision & Engineering	$743
561	Load Dispatching	$3,310
562	Station Expenses	$0
563	Overhead Line Expenses	$0
565	Transmission of Electricity by Others	$5,244,329
566	Miscellaneous Transmission Expenses	$15,336
568	Maintenance Supervision and Engineering	$17,721
569	Maintenance of Structures	$37
570	Maintenance of Station Equipment	$0
571	Maintenance of Overhead Lines	$17,505
575	Market Administration, Monitoring & Compliance Services	$0
Transmission Total		**$5,298,982**
Distribution		
Category		**Annual Budget**
580	Operation Supervision & Engineering	$999,276
582	Station Expenses	$53,564
583	Overhead Line Expenses	$261,106
584	Underground Line Expenses	$867,194
586	Meter Expenses	$559,878
588	Miscellaneous Distribution Expenses	$1,558,501
589	Rents	$0
590	Maintenance Supervision and Engineering	$106,145
592	Maintenance of Station Equipment	$2,488,871
593	Maintenance of Overhead Lines	$15,531,542
594	Maintenance of Underground Lines	$249,143
596	Maintenance of Street Lighting and Signal Systems	$58,981
597	Maintenance of Meters	$554,101
598	Maintenance of Miscellaneous Distribution Plant	$0
Distribution Total		**$23,288,302**
Penn Power Rate District Total		**$28,587,284**

West Penn Rate District T&D O&M - Annual 2026 ($)		
Transmission		
Category		**Annual Budget**
560	Operation Supervision & Engineering	$0
561	Load Dispatching	$34,412
562	Station Expenses	$75,730
563	Overhead Line Expenses	$26,193
565	Transmission of Electricity by Others	$71,540,007
566	Miscellaneous Transmission Expenses	$45,437
567	Rents	$0
568	Maintenance Supervision and Engineering	$244,981
569	Maintenance of Structures	$0
570	Maintenance of Station Equipment	$619,366
571	Maintenance of Overhead Lines	$2,998,897
573	Maintenance of Miscellaneous Transmission Plant	$0
575	Market Administration, Monitoring & Compliance Services	$0
Transmission Total		**$75,585,024**
Distribution		
Category		**Annual Budget**
580	Operation Supervision & Engineering	$1,535,075
581	Load Dispatching	$200,158
582	Station Expenses	$1,291,964
583	Overhead Line Expenses	$1,340,250
584	Underground Line Expenses	$2,208,000
586	Meter Expenses	$2,424,139
588	Miscellaneous Distribution Expenses	$12,317,663
590	Maintenance Supervision and Engineering	$433,164
592	Maintenance of Station Equipment	$5,957,472
593	Maintenance of Overhead Lines	$59,530,145
594	Maintenance of Underground Lines	$961,889
595	Maintenance of Line Transformers	$0
596	Maintenance of Street Lighting and Signal Systems	$1,026,730
597	Maintenance of Meters	$2,070,342
598	Maintenance of Miscellaneous Distribution Plant	$9,640
Distribution Total		**$91,306,632**
West Penn Rate District Total		**$166,891,656**

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

2026 T&D Capital Budget

Met-Ed Rate District T&D Capital - Annual 2026 ($)	
Category	**Annual Budget**
Capacity	$27,600,566
Condition	$1,804,510
Facilities	$8,675,074
Forced	$57,221,790
Meter Related	$1,840,516
New Business	$17,631,879
Other	-$3,551,417
Reliability	$184,021,827
Street Light	$6,684,266
Tools & Equip	$1,539,079
Vegetation Management	$0
Met-Ed Rate District Total	**$303,468,089**

Penelec Rate District T&D Capital - Annual 2026 ($)	
Category	**Annual Budget**
Capacity	$4,102
Condition	$2,708,627
Facilities	$234,120
Forced	$72,024,375
Meter Related	$704,742
New Business	$13,276,273
Other	$3,078,000
Reliability	$255,968,067
Streetlight	$7,186,086
Tools & Equip	$2,012,687
Vegetation Management	$0
Penelec Rate District Total	**$357,197,079**

Penn Power Rate District T&D Capital - Annual 2026 ($)	
Category	**Annual Budget**
Capacity	$1,297,484
Condition	$734,736
Facilities	$212,569
Forced	$14,441,205
Meter Related	$389,959
New Business	$3,101,853
Other	$654,370
Reliability	$38,670,974
Street Light	$855,862
Tools & Equip	$763,740
Vegetation Management	$0
Penn Power Rate District Total	**$61,122,751**

West Penn Rate District T&D Capital - Annual 2026 ($)	
Category	**Annual Budget**
Capacity	-$2,021,415
Condition	$2,590,902
Facilities	$7,013,714
Forced	$73,952,130
Meter Related	$903,125
New Business	$21,536,104
Other	-$8,906,411
Reliability	$230,520,664
Street Light	$7,057,977
Tools & Equip	$2,382,598
Vegetation Management	$0
West Penn Rate District Total	**$335,029,389**

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

Changes to T&D Maintenance Programs

There were no significant changes to the transmission and distribution maintenance programs for 2025.

ATTACHMENT A

Worst Performing Circuits – Remedial Actions

Met-Ed Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Ottsville Substation	00660-3	Easton	890	92
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	3.66	Trees Off Row-Tree	52%	Q1 2025
SAIDI	2,412.83	Trees Off Row-Limb	24%	Q2 2025
SAIFI	6.66	Equipment Failure	12%	Q3 2025
CAIDI	362.07	All Other	13%	Q4 2025
Customer Minutes	2,147,421			
Customers Affected	5,931			
Remedial Action Planned or Taken			**Status**	**Progress**
Post Storm Forestry Circuit Patrol			Complete	Jul-24
Cycle tree trimming			Complete	Aug-25
PARC TripSaver Installation			Complete	Aug-25
Priority pole replacements			To be completed 2026	50%
Substation	**Circuit**	**District**	**Customers**	**Outages**
No Bangor	00813-3	Easton	1,375	71
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	3.45	Trees Off Row-Tree	56%	Q1 2025
SAIDI	1,470.66	Equipment Failure	16%	Q2 2025
SAIFI	7.25	Trees Off Row-Limb	11%	Q3 2025
CAIDI	202.76	All Other	17%	Q4 2025
Customer Minutes	2,022,155			
Customers Affected	9,973			
Remedial Action Planned or Taken			**Status**	**Progress**
LTIIP line conversion engineering review			Complete	Feb-25
Replace priority poles			Complete	Mar-25
LTIIP Voltage conversion			Complete	Jul-25
Upgrade SCADA device			Complete	Aug-25
Off-cycle tree trimming			Complete	Dec-25
On cycle tree trimming			To be completed 2026	0%
Replace priority items identified during inspection			To be completed 2026	50%

Met-Ed Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
No Bangor	00826-3	Easton	3,331	149
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	3.12	Trees Off Row-Tree	46%	Q1 2025
SAIDI	548.97	Unknown	12%	Q2 2025
SAIFI	2.71	Equipment Failure	11%	Q3 2025
CAIDI	202.21	All Other	31%	Q4 2025
Customer Minutes	1,828,603			
Customers Affected	9,043			
Remedial Action Planned or Taken			**Status**	**Progress**
Forestry Aerial Patrol			Complete	Jul-24
LTIIP Circuit Loop Engineering Review			Complete	Feb-25
Replace priority pole			Complete	Mar-25
Line relocation			Complete	Apr-25
Replace priority items identified during inspection			To be completed 2026	50%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Huffs Church	00600-1	Boyertown	1,516	153
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.84	Trees Off Row-Tree	67%	Q1 2025
SAIDI	1,099.37	Trees Off Row-Limb	15%	Q2 2025
SAIFI	2.51	Equipment Failure	5%	Q3 2025
CAIDI	437.67	All Other	13%	Q4 2025
Customer Minutes	1,666,641			
Customers Affected	3,808			
Remedial Action Planned or Taken			**Status**	**Progress**
Cycle tree trimming			Complete	Feb-25
Zone 2 Overhead Circuit Rehab			Complete	Sep-25
Additional Zone 2 Overhead Circuit Rehab			Complete	Sep-25
Overhead circuit inspection			Complete	Oct-25

Met-Ed Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
North Cornwall Sub	00611-2	Lebanon	970	41
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.47	Trees Off Row-Tree	76%	Q1 2025
SAIDI	1,494.11	Trees Off Row-Limb	12%	Q2 2025
SAIFI	3.54	Equipment Failure	6%	Q3 2025
CAIDI	421.92	All Other	6%	Q4 2025
Customer Minutes	1,449,282			
Customers Affected	3,435			
Remedial Action Planned or Taken			**Status**	**Progress**
Cycle Tree trimming			Complete	Dec-24
Return INOP Reclosers to service			Complete	Jul-25
PARC tripsaver installation			Complete	Sep-25
CEMI - line upgrade			Complete	Oct-25
Voltage conversion			Complete	Aug-25
Overhead circuit inspection			To be completed 2026	0%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Fox Hill Subst	00816-3	Stroudsburg	3,337	56
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.45	Trees Off Row-Tree	36%	Q1 2025
SAIDI	429.69	Equipment Failure	18%	Q2 2025
SAIFI	2.52	Vehicle	18%	Q3 2025
CAIDI	170.37	All Other	27%	Q4 2025
Customer Minutes	1,433,860			
Customers Affected	8,416			
Remedial Action Planned or Taken			**Status**	**Progress**
LTIIP GOAB switch replacement			Complete	Feb-25
PARC tripsaver installation			Complete	Dec-25
Substation	**Circuit**	**District**	**Customers**	**Outages**
Walker Sub	00865-3	Stroudsburg	2,967	69
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.83	Equipment Failure	24%	Q1 2025
SAIDI	362.43	Trees Off Row-Tree	21%	Q2 2025
SAIFI	2.05	Trees On Row	15%	Q3 2025
CAIDI	177.21	All Other	40%	Q4 2025
Customer Minutes	1,075,317			
Customers Affected	6,068			
Remedial Action Planned or Taken			**Status**	**Progress**
On Cyle Tree Trimming			Complete	Feb-24
LTIIP Circuit rehab zone 2			Complete	Dec-25
PARC TripSaver Installation			Complete	Dec-25

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

Met-Ed Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Ottsville Substation	00661-3	Easton	618	74
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.77	Trees Off Row-Tree	67%	Q1 2025
SAIDI	1,675.03	Equipment Failure	25%	Q2 2025
SAIFI	4.78	Trees Off Row-Limb	4%	Q3 2025
CAIDI	350.67	All Other	4%	Q4 2025
Customer Minutes	1,035,171			
Customers Affected	2,952			
Remedial Action Planned or Taken			**Status**	**Progress**
Replace priority pole			Complete	Jan-25
LTIIP Line rehab			To be completed 2025	50%
Cycle tree trimming			Complete	Aug-25

Penelec Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Thompson	00436-65	Montrose	1,398	82
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	7.02	Trees Off Row-Tree	57%	Q1 2025
SAIDI	6,279.58	Unknown	28%	Q2 2025
SAIFI	3.14	Equipment Failure	8%	Q3 2025
CAIDI	947.87	All Other	7%	Q4 2025
Customer Minutes	4,158,288			
Customers Affected	4,387			
Remedial Action Planned or Taken			**Status**	**Progress**
Vac Switch Replacement			Complete	Feb-25
PARC Tripsavers			To Be Completed 2026	50%
LTIIP New Tie Point			Complete	Jul-25
LTIIP - Animal Guarding			To Be Completed 2026	50%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Lake Como	00787-65	Montrose	964	54
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	5.95	Trees Off Row-Tree	89%	Q1 2025
SAIDI	4,456.99	Trees Off Row-Limb	6%	Q2 2025
SAIFI	3.33	Unknown	1%	Q3 2025
CAIDI	1,097.82	All Other	3%	Q4 2025
Customer Minutes	3,525,097			
Customers Affected	3,211			
Remedial Action Planned or Taken			**Status**	**Progress**
Overhead circuit inspection			Complete	May-25
PARC Tripsavers			To Be Completed 2026	50%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Thompson	00446-65	Montrose	1,301	68
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	7.92	Ice	63%	Q1 2024
SAIDI	5.06	Trees Off Row-Tree	23%	Q2 2024
SAIFI	4,366.22	Line Failure	4%	Q3 2024
CAIDI	862.60	All Other	10%	Q4 2024
Customer Minutes	4,686,856			
Customers Affected	6,169			
Remedial Action Planned or Taken			**Status**	**Progress**
On cycle tree trimming			Complete	Feb-25
Replace regulator			Complete	Feb-25
PARC Tripsavers			Complete	Oct-25
LTIIP step tx upgrade			To Be Completed 2026	50%

Penelec Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Falls	00297-65	Montrose	844	47
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	3.05	Trees Off Row-Tree	82%	Q1 2025
SAIDI	1,819.59	Trees Off Row-Limb	9%	Q2 2025
SAIFI	2.87	Unknown	4%	Q3 2025
CAIDI	747.47	All Other	5%	Q4 2025
Customer Minutes	1,808,127			
Customers Affected	2,419			
Remedial Action Planned or Taken			**Status**	**Progress**
On cycle tree trimming			Complete	Jul-25
Overhead circuit inspection			To Be Completed 2026	0%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Grover	00527-63	Towanda	1,098	71
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.58	Trees Off Row-Tree	91%	Q1 2025
SAIDI	2,846.07	Unknown	4%	Q2 2025
SAIFI	4.86	Equipment Failure	3%	Q3 2025
CAIDI	286.66	All Other	3%	Q4 2025
Customer Minutes	1,529,031			
Customers Affected	5,334			
Remedial Action Planned or Taken			**Status**	**Progress**
LTIIP switch replacement with recloser			Complete	Jun-25
On cycle tree trimming			Complete	Nov-25
Substation	**Circuit**	**District**	**Customers**	**Outages**
N Meshoppen Tran	00534-65	Montrose	900	77
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.07	Trees Off Row-Tree	44%	Q1 2025
SAIDI	3,951.76	Overload	24%	Q2 2025
SAIFI	4.37	Equipment Failure	16%	Q3 2025
CAIDI	311.53	All Other	16%	Q4 2025
Customer Minutes	1,225,551			
Customers Affected	3,934			
Remedial Action Planned or Taken			**Status**	**Progress**
Replace Regulator			Complete	Feb-25
PARC tripsaver installation			Complete	Oct-25

Penelec Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Tunkhannock	00533-65	Montrose	1,286	64
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.69	Trees Off Row-Tree	41%	Q1 2025
SAIDI	3,615.88	Unknown	35%	Q2 2025
SAIFI	3.91	Lightning	15%	Q3 2025
CAIDI	198.70	All Other	9%	Q4 2025
Customer Minutes	998,672			
Customers Affected	5,026			
Remedial Action Planned or Taken			**Status**	**Progress**
On cycle tree trimming			Complete	Sep-24
LTIIP Replace recloser			To Be Completed 2026	75%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Brooklyn	00749-65	Montrose	536	41
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.57	Trees Off Row-Tree	68%	Q1 2025
SAIDI	2,298.42	Wind	18%	Q2 2025
SAIFI	3.40	Equipment Failure	6%	Q3 2025
CAIDI	510.33	All Other	8%	Q4 2025
Customer Minutes	931,352			
Customers Affected	1,825			
Remedial Action Planned or Taken			**Status**	**Progress**
PARC tripsaver installation			Complete	Nov-25
Overhead circuit inspection			To Be Completed 2026	0%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Lenox	00755-65	Montrose	717	37
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.56	Trees Off Row-Tree	85%	Q1 2025
SAIDI	3,326.25	Line Failure	5%	Q2 2025
SAIFI	3.87	Human Error - Company	3%	Q3 2025
CAIDI	332.86	All Other	1%	Q4 2025
Customer Minutes	923,683			
Customers Affected	2,775			
Remedial Action Planned or Taken			**Status**	**Progress**
LTIIP Line Rehab			To Be Completed 2026	75%
PARC tripsaver installation			To Be Completed 2026	50%

Penelec Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Lake Como	00788-65	Montrose	673	49
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.53	Trees Off Row-Tree	85%	Q1 2025
SAIDI	3,131.77	Trees On Row	5%	Q2 2025
SAIFI	2.58	Unknown	3%	Q3 2025
CAIDI	523.57	All Other	7%	Q4 2025
Customer Minutes	907,863			
Customers Affected	1,734			
Remedial Action Planned or Taken			**Status**	**Progress**
PARC tripsaver installation			Complete	Nov-25
Substation	**Circuit**	**District**	**Customers**	**Outages**
Lake Como	00786-65	Montrose	334	23
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.37	Trees Off Row-Tree	88%	Q1 2025
SAIDI	1,686.40	Unknown	11%	Q2 2025
SAIFI	2.98	Line Failure	0%	Q3 2025
CAIDI	817.72	All Other	0%	Q4 2025
Customer Minutes	813,629			
Customers Affected	995			
Remedial Action Planned or Taken			**Status**	**Progress**
LTIIP Line rehab			Complete	Oct-25
PARC tripsaver installation			Complete	Sep-25
Substation	**Circuit**	**District**	**Customers**	**Outages**
Dubois Central	00119-23	Dubois	1,381	50
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.35	Line Failure	40%	Q1 2025
SAIDI	1,262.67	Trees Off Row-Tree	39%	Q2 2025
SAIFI	2.53	Vehicle	10%	Q3 2025
CAIDI	229.61	All Other	11%	Q4 2025
Customer Minutes	801,814			
Customers Affected	3,492			
Remedial Action Planned or Taken			**Status**	**Progress**
Underground circuit inspection			Complete	Apr-25
Overhead circuit inspection			Complete	Apr-25
PARC tripsaver installation			Complete	Oct-25

Penelec Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Philipsburg	00162-22	Philipsburg	2,798	67
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.31	Trees Off Row-Tree	69%	Q1 2025
SAIDI	3,734.64	Equipment Failure	17%	Q2 2025
SAIFI	2.40	Vehicle	11%	Q3 2025
CAIDI	115.27	All Other	4%	Q4 2025
Customer Minutes	774,300			
Customers Affected	6,717			
Remedial Action Planned or Taken			**Status**	**Progress**
Overhead circuit inspection			Complete	May-25
Underground circuit inspection			Complete	May-25
LTIIP - circuit rehab			Complete	Aug-25
LTIIP - Overhead Circuit Replacement/Rehabilitation			To Be Completed 2026	25%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Bradford South	00106-42	Bradford	1,216	30
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.26	Trees Off Row-Tree	78%	Q1 2025
SAIDI	1,164.16	Equipment Failure	20%	Q2 2025
SAIFI	3.55	Forced Outage	2%	Q3 2025
CAIDI	172.85	All Other	0%	Q4 2025
Customer Minutes	747,067			
Customers Affected	4,322			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by trees			Complete	Feb-25
Repair damage caused by off ROW trees			Complete	Apr-25
Overhead circuit inspection			Complete	Sep-25
Underground circuit inspection			Complete	Sep-25

Penelec Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Erie South	00259-31	Erie	2,717	116
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.18	Trees Off Row-Tree	41%	Q1 2025
SAIDI	332.13	Unknown	22%	Q2 2025
SAIFI	2.95	Equipment Failure	15%	Q3 2025
CAIDI	87.59	All Other	22%	Q4 2025
Customer Minutes	701,236			
Customers Affected	8,006			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by a tree			Complete	Feb-25
Repair major damage caused by trees			Complete	Jun-25
Replace insulator			Complete	Jan-25
Repair damaged UG cable			Complete	Sep-25
Overhead circuit inspection			Complete	Sep-25
Repair damage caused by trees			Complete	Oct-25
Substation	**Circuit**	**District**	**Customers**	**Outages**
Springboro	00237-52	Meadville	2,804	88
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.17	Trees Off Row-Tree	38%	Q1 2025
SAIDI	3,983.32	Line Failure	37%	Q2 2025
SAIFI	1.84	Equipment Failure	10%	Q3 2025
CAIDI	134.74	All Other	15%	Q4 2025
Customer Minutes	694,061			
Customers Affected	5,151			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair line failure			Complete	Feb-25
LTIIP - replace recloser			Complete	Nov-25
Repair damage caused by trees			Complete	Apr-25
PARC tripsaver installation			Complete	Sep-25
Substation	**Circuit**	**District**	**Customers**	**Outages**
Thompson	00442-65	Montrose	681	40
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.16	Trees Off Row-Tree	65%	Q1 2025
SAIDI	579.03	Unknown	19%	Q2 2025
SAIFI	4.92	Equipment Failure	15%	Q3 2025
CAIDI	204.64	All Other	1%	Q4 2025
Customer Minutes	685,537			
Customers Affected	3,350			
Remedial Action Planned or Taken			**Status**	**Progress**
PARC Tripsavers			Complete	Nov-25
LTIIP Recloser Replacement			To Be Completed 2026	75%

Penelec Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Hooversville	00019-12	Somerset	1,654	58
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.10	Line Failure	41%	Q1 2025
SAIDI	495.21	Unknown	37%	Q2 2025
SAIFI	2.65	Trees Off Row-Tree	14%	Q3 2025
CAIDI	148.48	All Other	8%	Q4 2025
Customer Minutes	650,472			
Customers Affected	4,381			
Remedial Action Planned or Taken			**Status**	**Progress**
On cycle tree trimming			Complete	Dec-25
Overhead circuit inspection			Complete	May-25
Underground circuit inspection			Complete	May-25
PARC tripsaver installation			To Be Completed 2026	50%
LTIIP - voltage conversion			To Be Completed 2026	50%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Piney	00523-51	Oil City	1,548	50
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.06	Trees Off Row-Tree	41%	Q1 2025
SAIDI	595.24	Trees Off Row-Limb	15%	Q2 2025
SAIFI	3.80	Equipment Failure	15%	Q3 2025
CAIDI	106.33	All Other	29%	Q4 2025
Customer Minutes	625,955			
Customers Affected	5,887			
Remedial Action Planned or Taken			**Status**	**Progress**
Tripsaver deployment at one site			Complete	Nov-24
Repair damage caused by equipment failure			Complete	Jan-25
LTIIP - install new bridge switch			Complete	Sep-25
LTIIP - remote sectionalizing			To Be Completed 2026	50%

Penelec Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
East Hickory	00201-41	Warren	333	23
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	0.82	Trees Off Row-Tree	66%	Q1 2025
SAIDI	626.56	Line Failure	18%	Q2 2025
SAIFI	11.16	Unknown	14%	Q3 2025
CAIDI	131.43	All Other	2%	Q4 2025
Customer Minutes	488,256			
Customers Affected	3,715			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by off ROW trees			Complete	Dec-24
Repair damage caused by off ROW trees			Complete	May-25
Overhead Line Rehab			Complete	Sep-25
Overhead circuit inspection			Complete	Aug-25
Repair damage caused by a tree			Complete	Dec-25
Substation	**Circuit**	**District**	**Customers**	**Outages**
Union City	00208-43	Erie	1,617	60
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	0.78	Trees Off Row-Tree	53%	Q1 2025
SAIDI	480.88	Equipment Failure	32%	Q2 2025
SAIFI	4.40	Vehicle	8%	Q3 2025
CAIDI	64.60	All Other	8%	Q4 2025
Customer Minutes	459,422			
Customers Affected	7,112			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by a tree			Complete	Mar-25
Replace failed insulator			Complete	Jan-25
Overhead circuit inspection			To Be Completed 2026	0%

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

Penelec Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Brookville	00125-23	Dubois	635	42
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	0.62	Trees Off Row-Tree	48%	Q1 2025
SAIDI	686.47	Vehicle	33%	Q2 2025
SAIFI	3.44	Equipment Failure	5%	Q3 2025
CAIDI	168.88	All Other	14%	Q4 2025
Customer Minutes	368,999			
Customers Affected	2,185			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair line failure			Complete	Nov-24
Repair damage caused by a tree			Complete	Nov-24
On cycle tree trimming			Complete	Mar-25
Underground circuit inspection			Complete	Apr-25
Overhead circuit inspection			Complete	May-25
PARC tripsaver installation			Complete	Oct-25
LTIIP - overhead conductor			To Be Completed 2026	50%

Penn Power Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Hartstown	W-126	Clark	1,129	37
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.55	Bird	37%	Q4 2024
SAIDI	194.34	Trees Off Row-Tree	29%	Q1 2025
SAIFI	1.02	Equipment Failure	16%	Q2 2025
CAIDI	191	All Other	17%	Q3 2025
Customer Minutes	447,380			
Customers Affected	2,347			
Remedial Action Planned or Taken			**Status**	**Progress**
Repair damage caused by a tree			Complete	Jun-25
Substation	**Circuit**	**District**	**Customers**	**Outages**
Darlington	D-536	Zelienople	625	22
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	3.01	Trees Off Row-Tree	79%	Q1 2025
SAIDI	847.04	Trees On Row	6%	Q2 2025
SAIFI	11.98	Unknown	5%	Q3 2025
CAIDI	71	All Other	10%	Q4 2025
Customer Minutes	529,399			
Customers Affected	7,485			
Remedial Action Planned or Taken			**Status**	**Progress**
LTIIP - Circuit Improvement			To be completed 2026	75%

West Penn Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Rutan	New Freeport	Jefferson	737	72
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	3.08	Trees Off Row-Tree	74%	Q1 2025
SAIDI	3,057.34	Line Failure	13%	Q2 2025
SAIFI	5.21	Wind	6%	Q3 2025
CAIDI	587	All Other	7%	Q4 2025
Customer Minutes	2,253,258			
Customers Affected	3,837			
Remedial Action Planned or Taken		**Status**	**Progress**	
Cycle tree trimming			Complete	Jul-24
Overhead circuit inspection			Complete	Feb-25
Underground Circuit inspection			Complete	Aug-25
Substation	**Circuit**	**District**	**Customers**	**Outages**
Driftwood	Driftwood	St Marys	977	31
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	2.01	Trees Off Row-Tree	95%	Q1 2025
SAIDI	1,502.14	Trees Off Row-Limb	3%	Q2 2025
SAIFI	2.71	Trees On Row	1%	Q3 2025
CAIDI	555	All Other	0%	Q4 2025
Customer Minutes	1,467,592			
Customers Affected	2,644			
Remedial Action Planned or Taken		**Status**	**Progress**	
Overhead circuit inspection			Complete	Mar-25
Repair damage caused by trees			Complete	Mar-25
LTIIP - CEMI			Complete	Jan-26
On cycle tree trimming			To be completed 2026	0%
LTIIP - circuit protection			To be completed 2026	25%
Hickory	Hickory	Washington Pa	951	58
Dutch Fork	Claysville	Washington Pa	1,640	63
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.58	Line Failure	36%	Q1 2025
SAIDI	703.25	Trees Off Row-Tree	35%	Q2 2025
SAIFI	2.91	Unknown	23%	Q3 2025
CAIDI	241	All Other	5%	Q4 2025
Customer Minutes	1,153,322			
Customers Affected	4,777			
Remedial Action Planned or Taken		**Status**	**Progress**	
LTIIP - circuit improvement			To be completed 2026	25%

West Penn Rate District				
Substation	**Circuit**	**District**	**Customers**	**Outages**
Kiski Valley Distrib	Kittanning Rd	Arnold	1,756	40
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	1.04	Trees Off Row-Tree	84%	Q1 2025
SAIDI	433.49	Forced Outage	7%	Q2 2025
SAIFI	1.79	Unknown	4%	Q3 2025
CAIDI	242	All Other	5%	Q4 2025
Customer Minutes	761,209			
Customers Affected	3,140			
Remedial Action Planned or Taken		**Status**	**Progress**	
Repair damage caused by a tree			Complete	Mar-25
ESSS work request			Complete	Mar-25
Overhead circuit inspection			To be completed 2026	0%
Substation	**Circuit**	**District**	**Customers**	**Outages**
Roundhill	Roundhill	Charleroi	953	35
Reliability		**Outage by Cause**		**Previously Ranked**
SAIDI Impact	0.81	Trees Off Row-Tree	38%	Q1 2025
SAIDI	3.53	Wind	35%	Q2 2025
SAIFI	3.53	Animal	9%	Q3 2025
CAIDI	175	All Other	18%	Q4 2025
Customer Minutes	590,421			
Customers Affected	3,366			
Remedial Action Planned or Taken		**Status**	**Progress**	
On cycle tree trimming			Complete	Mar-25
ESSS Work			Complete	Feb-25
Overhead circuit inspection			To be completed 2026	0%
Underground circuit inspection			To be completed 2026	0%

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Purpose

This procedure outlines FirstEnergy (FE) Transmission System Control Center (SCC) actions to be taken in accordance with ***PJM Manual 13 Emergency Operations (PJM M-13),*** when PJM issues Emergency Procedures to the PJM Regional Transmission Organization (RTO).

Scope

This procedure addresses most PJM-issued Emergency Procedures and related FE responses. Refer to the following procedures for guidance on additional PJM-issued Emergency Procedures:

- ***SCC-EOP-002 Conservative Operations***
- ***SCC-EOP-003 Load Dump Actions***

Applicability

All steps to be completed by the FE Transmission System Operator (TSO)/Reliability Coordinator (RelCoor), unless specifically noted otherwise.

TSO/RelCoor activate the necessary processes in this procedure to mitigate operating emergencies and reconfigure the system, as needed.

Introduction and Policy Statement

FE Transmission entities register with the North American Electric Reliability Corporation (NERC) as Transmission Owners (TO) and Distribution Provider (DP), and they serve as members of the PJM RTO. FE TSOs are responsible for complying with the NERC reliability standards applicable to TOs. As a member of PJM, FE Transmission Operations Services (TOS) ensures their procedures are coordinated with those of the other PJM members.

Operational benefits of PJM membership include the mutual assistance provided when need arises. Close cooperation between the SCC and PJM members is expected to analyze and eliminate conditions which threaten the reliable operation of any member company or the interconnection itself.

Power system disturbances are most likely to occur as the result of loss of generation, loss of transmission, or unexpected load changes. These disturbances may be of, or develop into, a magnitude sufficient to affect the reliable operation of the PJM RTO. The associated conditions under severe system disturbances generally result in critically loaded transmission facilities, critical frequency deviations, or high/low voltage conditions.

PJM Interconnection policy states that members must:

- Maintain the integrity of the PJM transmission system at all times. Opening of certain transmission facilities may be desirable if system economy or reliability can be improved without degradation of the bulk electrical supply system.
- Provide maximum reasonable assistance to adjacent systems in case of a system disturbance external to PJM. However, when such disturbance is endangering Bulk Electric System (BES) equipment in the PJM RTO or unduly impairing the operation of the PJM RTO, immediate relief will not be given.
- Prevent cascading loss of transmission facilities. Whenever line loading exceeds emergency ratings and cannot be relieved by other means, or when a contingency results in line loading that exceeds known stability limits or could otherwise cause a major interruption, customer load will be dumped by opening circuits.

Under certain operating conditions it may be necessary to curtail or dump customer load. In view of the coordinated planning and operating policies of the interconnection, PJM may request systems to curtail or dump customer load to meet their obligation to the reliable operation of the PJM RTO.

The PJM monitored bulk power system, 115kV through 345kV, shall be operated so that all bus voltages are maintained within 5% of nominal and not less than 8% post contingency. The 500kV system shall be operated so that all bus voltages are maintained between 500kV and 550kV on a pre-contingency basis except at certain 500kV substations where equipment limitations dictate lower maximum voltage.

SCC TSO responsibilities include:

- Complying with NERC reliability standards.
- During normal and emergency conditions, maintaining authority and responsibility to take or direct timely and appropriate real-time actions, up to and including shedding of firm load, to ensure the stable and reliable operation of the BES without obtaining approval from higher level personnel.
- Reviewing plans to determine if any maintenance or testing scheduled to be performed on any critical monitoring, control, or transmission facility can be deferred or cancelled.
- Notifying PJM in advance of taking any such action, if possible, or if not providing such notification immediately after taking such action.
- Notifying Distribution Control Centers (DCC) of load shed event, and directing DCC to shed load if needed based on current situation.
- Monitoring BES and informing PJM of real-time or anticipated emergency conditions.

PJM Operating Instructions are defined as a command by operating personnel responsible for the Real-time operation of the Interconnected BES to change or preserve the state, status, output, or input of an Element of the BES or Facility of the BES and instructions from PJM to its members to take actions to control Interconnection Reliability Operating Limits (IROL) or initiate load dump measures for capacity or transmission emergencies.

Regarding PJM Operating Instructions, TSO must:

- Comply with PJM Operating Instructions to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.
- Comply with PJM Operating Instructions unless compliance with the PJM Operating Instructions cannot be physically implemented, or unless such actions would violate safety, equipment, regulatory or statutory requirements. If TSO cannot comply with any PJM Operating Instructions for any reason, then TSO informs PJM as soon as possible.

PJM and Member TO Actions

PJM Actions

At all times, PJM is to maintain the integrity of the PJM RTO transmission systems and the Eastern Interconnection. ***PJM M-13*** constitutes the PJM Emergency Operations Plan for mitigating operating emergencies in accordance with NERC and RF reliability standards.

All PJM-issued Advisories, Alerts, Warnings, and Actions are communicated to the Local Control Centers (LCCs) via the ALL-CALL message system.

Member TO Actions

When PJM declares an Emergency, the PJM Members are responsible for performing the actions defined in ***PJM M-13***. PJM has clear decision-making authority to act and to instruct actions to be taken by the PJM Members within its Reliability Coordinator Area to preserve the integrity and reliability of the BES. PJM Members review ***PJM M-13*** on an annual basis through the System Operations Subcommittee.

PJM typically issues Alerts prior to the operating period (usually one day ahead), issues Warnings in real-time prior to the event, and issues Actions in real-time during the event. Emergency procedures often have a specific order and increase in severity. However, this does not preclude the initiation of any of the alerts, warnings, and actions out of sequence due to current system conditions. Additional emergency actions identified in ***PJM M-13*** may have no specific sequence of severity and may be issued at any time.

Events that require SCC actions include, but are not limited to, the following:

- When the TSO becomes aware that a BES facility has tripped off-line (e.g., line, transformer, and capacitor) and will remain out of service for a period of time to investigate or facilitate repairs, the TSO completes the following steps:
  - Update PJM on the status and expected restoration of facility, and create a log entry.
  - Create an eDart entry for that facility outage if the system did not automatically create it (in accordance with ***PJM Manual 3 Transmission Operations (PJM M-03)***, *Section 4: Reportable Transmission Facility Outages*).
- When a BES line trips off-line and does not automatically reclose, the TSO completes the following steps, in accordance with ***SCC-NOP-202 Transmission Equipment Forced Operations***:
  - Notify PJM that the SCC is going to attempt restoration, and create a log entry.
  - Create an eDart entry for facilities that lockout if the PJM system did not create it (in accordance with ***PJM M-3***, *Section 4: Reportable Transmission Facility Outages*).
- When a large area of the BES has experienced an outage, the TSO completes the following steps:
  - Notify PJM that the SCC, under emergency conditions, is going to initiate restoration of the affected area; create a log entry.
  - When restoration of the BES is complete, notify PJM that the SCC is resuming normal operations in that area, and create a log entry.

Governmental Notifications and Public Appeals

When PJM requests FE to make a notification or appeal on their behalf, the appropriate departments receive notification from the TSO via the SCC notification process. The FE department making the notification or appeal notifies the TSO or Transmission Operations Services management that the notification or appeal has been made.

The following are examples of notifications and appeals that are performed by FE, and the responsible entities.

- GM or Director initiates the notifications and public appeals.
  - Public appeals and educational messages through all media for voluntary load reductions and energy conservation are made by the FE External Communications department.
  - Appeals made to large industrial and commercial customers to reduce non-essential energy use and to maximize their use of customer-owned generation that utilize fuels other than the one in short supply are made by the FE Customer Support department.
  - Appeals to government agencies to implement necessary energy reduction programs are made by the FE Governmental Communications department.

Emergency Condition Staffing

Shift Supervisor/Operations Manager has the authority to obtain additional staffing to support the Control Center response to an emergency. This authority extends to personnel outside of Transmission Operations (e.g., Field Personnel) to respond to an emergency on the system.

Transmission Operations is staffed and available 24 hours, 7 days/week, for addressing real-time and emergency conditions.

PJM Advisories, Alerts, Warnings, and Actions

Advisories

PJM Advisories are intended to keep all affected system personnel aware of the forecast and/or actual status of the PJM RTO. All advisories issued by PJM and cancellation thereof are broadcast on the ALL-CALL communication system and posted to selected PJM websites to assure that all members receive the same information.

Personnel that are affected by sections in this procedure, and who do not have access to the ALL-CALL system, receive notification from the TSO.

PJM issues Advisories in advance of a scheduled load period to allow sufficient time for members to prepare for anticipated initial capacity shortages, normally in advance of the operating day.

PJM Advisories offer advanced notice to PJM members of potential cold weather, allowing ample time to gather and report critical information and prepare facilities for cold weather readiness.

PJM aims to issue Advisories as far in advance as possible, typically at least 24 hours in advance and within 3-5 days.

PJM issues Advisories prior to PJM Alerts.

Alerts

PJM Alerts are intended to keep all affected system personnel aware of the forecast and/or actual status of the PJM RTO. All alerts issued by PJM and cancellation thereof are broadcast on the ALL-CALL communication system and posted to selected PJM websites to assure that all members receive the same information.

Personnel that are affected by sections in this procedure, and who do not have access to the ALL-CALL system, receive notification from the TSO.

PJM issues Alerts in advance of a scheduled load period to allow sufficient time for members to prepare for anticipated initial capacity shortages, normally in advance of the operating day.

Warnings

PJM Warnings are intended to keep all affected system personnel aware of the forecast and/or actual status of the PJM RTO. All warnings and cancellations are broadcast on the ALL-CALL system and posted to selective PJM websites to assure that all members receive the same information.

Personnel that are affected by sections in this procedure, and who do not have access to the ALL-CALL system, receive notification from the TSO.

PJM issues Warnings real-time during present operations to inform members of actual capacity shortages or contingencies that may jeopardize the reliable operation of the PJM RTO.

Actions

PJM issues Actions real-time during an event. The PJM RTO generation schedules are normally loaded according to bid prices. However, during periods of reserve deficiencies, other measures must be taken to maintain BES reliability. These measures could include:

- Loading generation that is restricted for reasons other than cost
- Recalling non-capacity backed off-system sales
- Purchasing emergency energy from participants/surrounding pools
- Load relief measures

The emergency procedures used under these conditions are defined in ***PJM M-13*** in the general order of severity in which they may be issued. However, the PJM Dispatcher may issue emergency actions in any order depending on system conditions and on the time required to mitigate operating emergencies and maintain stability of the BES. Issuance and cancellation of emergency procedures are broadcast over the ALL-CALL and posted to selective PJM websites. Only affected systems must take action. The PJM Dispatcher broadcasts the current and projected PJM RTO status periodically using the ALL-CALL during the extent of the implementation of the emergency procedures.

PJM members are expected to implement all emergency procedures immediately to achieve the desired relief within 30 minutes, unless otherwise directed.

1. Unit Startup Notification Alert

The Unit Startup Notification Alert notifies members to place units in state of readiness so they can be brought online within 48 hours for an anticipated shortage of operating capacity, stability issues, or constrained operations for future periods. PJM implements this alert when a reliability assessment determines that long lead time generation is needed for future periods and can be issued for the RTO, for specific Control Zone(s), or on an individual unit basis. PJM issues the Unit Startup Notification Alert so that units can be ready to come online in 48 hours or less, based on the lesser of “submitted notification time + startup time” or 6 days. After reaching the state of readiness, if a unit fails to come online within 48 hours when called by PJM, the unit will be considered as forced outage until it can be online or until PJM cancels the unit.

1. **WHEN** receiving Unit Startup Notification Alert, **LOG AND ISSUE** SCC notifications.
2. **IF** PJM sends additional notification/All-Call **OR** receiving early cancellation of Unit Startup Notification Alert,
   THEN LOG AND ISSUE SCC notifications.
3. **WHEN** receiving cancellation of Unit Startup Notification Alert, **LOG AND ISSUE** SCC notifications.

2. Maximum Generation Emergency/Load Management Alert

The Maximum Generation Emergency/Load Management Alert to provides an early alert that system conditions may require the use of the PJM emergency procedures. PJM implements this alert when Maximum Emergency generation is called into the operating capacity or if Demand Response is projected to be implemented.

1. **WHEN** receiving Maximum Generation Emergency/Load Management Alert, **COMPLETE** the following steps:
    1.A. **LOG AND ISSUE** SCC notifications.
    1.B. **NOTIFY** DCCs,
    AND LOG call(s).
    1.C. **REVIEW** plans to determine if any maintenance or testing scheduled to be performed on any critical monitoring, control, or transmission facility can be deferred or cancelled.
    1.D. **SUSPEND** any high-risk testing of Transmission equipment.
2. **IF** PJM sends additional notification/All-Call,
OR WHEN receiving early cancellation of Maximum Generation Emergency/Load Management Alert,
THEN COMPLETE the following steps:
    2.A. **LOG AND ISSUE** SCC notifications.
    2.B. **NOTIFY** DCCs,
    AND LOG call(s).
3. **WHEN** Maximum Generation Emergency/Load Management Alert expires, **THEN UPDATE AND COMPLETE** existing iTOA log.

3. Primary Reserve Alert

The Primary Reserve Alert notifies PJM members of the anticipated shortage of operating reserve capacity for a future critical period. PJM implements this alert when estimated operating reserve capacity is less than the forecasted primary reserve requirement. PJM may issue this alert for the entire PJM RTO or for specific Control Zones based on projected location of transmission constraints.

1. **WHEN** receiving Primary Reserve Alert, com **COMPLETE** the following steps:
    1.A. **LOG AND ISSUE** SCC notifications.
    1.B. **NOTIFY** DCCs,
    AND LOG call(s).
    1.C. **REVIEW** plans to determine if any maintenance or testing scheduled to be performed, on any critical monitoring, control, or transmission facility can be deferred or cancelled.
2. **WHEN** receiving cancellation of Primary Reserve Alert, **COMPLETE** the following steps:
    2.A. **LOG AND ISSUE** SCC notifications.
    2.B. **NOTIFY** DCCs,
    AND LOG call(s).

4. Voltage Reduction Alert

The Voltage Reduction Alert notifies PJM members that a voltage reduction may be required during a future critical period. PJM implements this alert when the estimated operating reserve capacity is less than the forecasted synchronized reserve requirement. PJM may issue this alert for the entire RTO or for specific Control Zones based on projected location of transmission constraints.

1. **WHEN** receiving Voltage Reduction Alert, **COMPLETE** the following steps:
    - 1.A. **LOG AND ISSUE** SCC notifications.
    - 1.B. **NOTIFY** DCCs,
      AND LOG call(s).
    - 1.C. **ENSURE** all available capacitors are in service.
    - 1.D. **ENSURE** all generating units are operating at their voltage schedule.
    - 1.E. **ENSURE** synchronous condenser(s) and SVC(s) are in service.
    - 1.F. **FE East and FE South only: PROCEED** on the basis that a voltage reduction warning will be issued during this future period,
      AND TAKE steps to expedite implementation of a voltage reduction, should one become necessary.
        - 1.F.1. Steps may include:
            - Verifying that DCCs have taken all steps necessary in preparation of voltage reduction
            - Any maintenance being performed on voltage tap changers has been completed
            - Management has been notified of any tap changers that are out of service, requiring personnel present to adjust
            - Verifying that TSO Management is informed of Voltage Reduction Alert
2. **WHEN** receiving cancellation of Voltage Reduction Alert, **COMPLETE** the following steps:
    - 2.A. **LOG AND ISSUE** SCC notifications.
    - 2.B. **NOTIFY** DCCs,
      AND LOG call(s).

5. Pre-Emergency Load Management Reduction Action (30, 60 or 120-minute)

SECTION NOTE

[redacted]

This Load Management Reduction Action requests end-use customers who need 30, 60, or 120 minutes lead time to reduce load during emergency conditions. PJM may issue this action for the entire PJM RTO or for specific Transmission Zones or Transmission Sub-zones.

1. **WHEN** receiving Pre-Emergency Load Management Reduction Action, **COMPLETE** the following steps:
   - 1.A. **VERIFY** via PJM Emergency Procedures posting website, located at https://emergencyprocedures.pjm.com/ep/pages/dashboard.jsf."
   - 1.B. **LOG AND ISSUE** SCC notifications.
   - 1.C. **NOTIFY** DCCs,
     AND LOG call(s).
2. **WHEN** receiving cancellation of Pre-Emergency Load Management Reduction Action, **COMPLETE** the following steps:
   - 2.A. **LOG AND ISSUE** SCC notifications.
   - 2.B. **NOTIFY** DCCs,
     AND LOG call(s).

6. Emergency Load Management Reduction Action (30, 60 or 120-minute)

SECTION NOTE

[redacted]

The Emergency Load Management Reduction (ELMR) Action (30, 60, or 120 minutes) provides additional load relief by using PJM controllable load management programs. Load relief is expected to be required after initiating Maximum Emergency generation. PJM may issue this action for the entire PJM RTO or for specific Transmission Zones or subset of Transmission Sub-zones.

1. **WHEN** receiving ELMR Action (30, 60, or 120 minutes), **COMPLETE** the following steps:
   - 1.A. **VERIFY** via PJM Emergency Procedures posting website, located at https://emergencyprocedures.pjm.com/ep/pages/dashboard.jsf."
   - 1.B. **LOG AND ISSUE** SCC notifications.
   - 1.C. **NOTIFY** DCCs,
     AND LOG call(s).
2. **WHEN** receiving cancellation of ELMR, **COMPLETE** the following steps:
   - 2.A. **LOG AND ISSUE** SCC notifications.
   - 2.B. **NOTIFY** DCCs,
     AND LOG call(s).

7. Primary Reserve Warning

The Primary Reserve Warning notifies members that available primary reserve is less than required and that present operations are becoming critical. PJM implements this warning when available primary reserve capacity is less than the primary reserve requirement, but greater than the synchronized reserve requirement. PJM may issue this warning for the entire PJM RTO or for specific Control Zones based on the projected location of transmission constraints.

1 **WHEN** receiving Primary Reserve Warning, **COMPLETE** the following steps:

1.A. **LOG AND ISSUE** SCC notifications.

1.B. **NOTIFY** DCCs,
AND LOG call(s).

1.C. **ENSURE** that all deferrable maintenance or testing affecting critical transmission is halted

1.D. **ENSURE** that monitoring or control maintenance work that may impact operation of the system is halted.

2 **WHEN** receiving cancellation of Primary Reserve Warning, **COMPLETE** the following steps:

2.A. **LOG AND ISSUE** SCC notifications.

2.B. **NOTIFY** DCCs,
AND LOG Call(s).

8. Maximum Generation Emergency Action

The Maximum Generation Emergency Action increases the PJM RTO generation above the maximum economic level. It is implemented whenever generation is needed that is greater than the highest incremental cost level. PJM may issue this action for the entire PJM RTO or for specific Control Zones or subset of a Control Zone if transmission limitations exist.

1. **WHEN** receiving Maximum Generation Emergency Action, **COMPLETE** the following steps:

1.A. **LOG AND ISSUE** SCC notifications.

1.B. **NOTIFY** DCCs,
AND LOG call(s).

2. **WHEN** receiving cancellation of Maximum Generation Emergency Action, **COMPLETE** the following steps:

2.A. **LOG AND ISSUE** SCC notifications.

2.B. **NOTIFY** DCCs,
AND LOG call(s).

9. Emergency Voluntary Energy Only Demand Response Reduction Action

This Load Reduction Action requests end-use customers, who participate in the Emergency Voluntary Energy Only Demand Response Program, to reduce load during emergency conditions. PJM may issue this action for the entire PJM RTO or for specific Control Zones or subset of a Control Zone if transmission limitations exist.

1. **WHEN** receiving Emergency Voluntary Energy Only Demand Response Program Action, **COMPLETE** the following steps:
    1.A. **LOG AND ISSUE** SCC notifications.
    1.B. **NOTIFY** DCCs,
    AND LOG call(s).
2. **WHEN** receiving cancellation of Emergency Voluntary Energy Only Demand Response program Action, **COMPLETE** the following steps:
    2.A. **LOG AND ISSUE** SCC notifications.
    2.B. **NOTIFY** DCCs,
    AND LOG call(s).

10. Voltage Reduction Warning and Reduction of Non-Critical Plant Load

The Voltage Reduction Warning and Reduction of Non-Critical Plant Load notifies members that the available synchronized reserve is less than the Synchronized Reserve Requirement and that present operations have deteriorated such that a voltage reduction may be required (refer to the *Reserve Definitions and Applications* section of this procedure). PJM implements this warning when the available synchronized reserve capacity is less than the synchronized reserve requirement, after all available secondary and primary reserve capacity (except restricted Maximum Emergency capacity) is brought to a synchronized reserve status, and emergency operating capacity is scheduled from adjacent systems. PJM may issue this warning for the entire PJM RTO or for specific Control Zones based on the projected location of transmission constraints.

1. **WHEN** receiving Voltage Reduction Warning / Reduction of Non-Critical Plant Load, **COMPLETE** the following steps:
    1.A. **LOG AND ISSUE** SCC notifications.
    1.B. **NOTIFY** DCCs,
    AND LOG call(s).
    1.C. **ENSURE** all available capacitors are in service.
    1.D. **ENSURE** all generating units are operating at their voltage schedule.
    1.E. **ENSURE** synchronous condenser(s) and SVC(s) are in service.
    1.F. **FE East and FE South only: PROCEED** on the basis that a voltage reduction warning will be issued during this future period,
    AND TAKE steps to expedite implementation of a voltage reduction, should one become necessary.
        1.F.1. Steps may include:
        - Verify that DCCs have taken all steps necessary in preparation of voltage reduction
        - Verify that any maintenance being performed on voltage tap changers has been completed
        - Verify that TOS Management has been notified of any tap changers that are out of service, requiring personnel present to adjust
        - Verifying that TOS Management is informed of Voltage Reduction Alert
2. **WHEN** receiving cancellation of Voltage Reduction Warning / Reduction of Non-Critical Plant Load, **COMPLETE** the following steps:
    2.A. **LOG AND ISSUE** SCC notifications.
    2.B. **NOTIFY** DCCs,
    AND LOG call(s).

11. Curtailment of Non-Essential Building Load

The Curtailment of Non-Essential Building Load provides additional load relief to be expedited prior to, but no later than, the same time as a Voltage Reduction Action. PJM may issue this curtailment for the entire PJM RTO or for specific Control Zones or subset of a Control Zone.

1. **WHEN** receiving Curtailment of Non-Essential Building Load, **COMPLETE** the following steps:
    1.A. **LOG AND ISSUE** SCC notifications.
    1.B. **NOTIFY** DCCs,
    AND LOG call(s).
    1.C. **SWITCH OFF** all non-essential light and power in control room area.
2. **WHEN** receiving cancellation of Curtailment of Non-Essential Building Load, **COMPLETE** the following steps:
    2.A. **LOG AND ISSUE** SCC notifications.
    2.B. **NOTIFY** DCCs,
    AND LOG call(s).

12. Deploy All Resources Action

The Deploy All Resources Action, during an emergency condition, instructs PJM Members that all generation resources are needed online immediately. PJM issues this step when unplanned events, such as the loss of a transmission or generating facility(ies), have resulted in reliable operations being jeopardized such that a Voltage Reduction Action or a Manual Load Dump Action may be required. PJM may issue this action for the entire PJM RTO or for specific Control Zones or subset of a Control Zone if transmission limitations exist.

1. **WHEN** receiving Deploy All Resources Action, **COMPLETE** the following steps:

STEP 1.A. NOTE

When management is notified of the emergency procedure, the use of public appeal to conserve electricity should be considered.

1.A. **LOG AND ISSUE** SCC notifications.

1.A.1. **NOTIFY** Jennifer Young, Manager, External Communications, (office: 330-761-4362[redacted] of potential need for public appeal,
AND PROVIDE the following information:

- Control Area (FE East, FE South, or FE West) affected by emergency operations
- Start time and expected duration of emergency
- PJM request language

1.B. **NOTIFY** DCCs,
AND LOG call(s).

2. **WHEN** receiving cancellation of Deploy All Resources Action, **COMPLETE** the following steps:

2.A. **LOG AND ISSUE** SCC notifications.

2.B. **NOTIFY** Jennifer Young, Manager, External Communications, (office: 330-761-4362) [redacted] of cancellation.

2.C. **NOTIFY** DCCs,
AND LOG call(s).

13. Manual Load Dump Warning and Action

REFER to ***SCC-EOP-003 Load Dump Actions***.

14. Voltage Reduction Action

SECTION NOTE

[redacted]

The Voltage Reduction Action, implemented during capacity deficient conditions, reduces voltage on the distribution system to reduce demand and provide enough reserve to maintain tie flow schedules and preserve limited energy sources. Voltage Reduction Actions may be implemented to increase transmission system voltages. PJM may issue this action for the entire PJM RTO or for specific Control Zones or subset of a Control Zone if transmission limitations exist.

PJM implements Curtailment of Non-Essential Building Load prior to or at the same time as a Voltage Reduction Action, when load relief is still needed to maintain tie schedules.

1. **WHEN** receiving Voltage Reduction Action, **COMPLETE** the following steps:
   - 1.A. **LOG** all actions taken,
     AND ISSUE SCC notifications.
   - 1.B. **FE East and FE South only:**
     - 1.B.1. **CALL** DCCs **AND LOG** call(s).
     - 1.B.2. **REQUEST** that the DCC implement Voltage Reduction within 10 minutes and **REPORT** back completion times.
     - 1.B.3. **LOG** completion time(s).
   - 1.C. **FE East only: IMPLEMENT** FE East Sub-Transmission Voltage Reduction process as documented in ***SCC-EOP-001B Att. B: FE East Sub-Transmission Voltage Reduction***.
   - 1.D. **ENSURE** all available capacitors are in service.
   - 1.E. **ENSURE** all generating units are operating at their voltage schedule.
   - 1.F. **ENSURE** synchronous condenser(s) and SVC(s) are in service.
   - 1.G. **NOTIFY** PJM when voltage reduction actions are complete.
2. **WHEN** receiving cancellation of Voltage Reduction Action, **COMPLETE** the following steps:
   - 2.A. **LOG AND ISSUE** SCC notifications.
   - 2.B. **FE EAST only:** Return sub-transmission voltages to Normal, according to ***SCC-EOP-001B Att. B: FE EAST SUB-TRANSMISSION VOLTAGE REDUCTION***.
   - 2.C. **FE East and FE South only: NOTIFY** DCCs,
     AND LOG call(s).

15. Manual Load Dump including IROL

REFER to ***SCC-EOP-003 Load Dump Actions***.

16. Minimum Generation Advisory

PJM Dispatch issues a Minimum Generation Advisory as an informational notice that a Minimum Generation Alert and/or Event is likely to occur, starting two or more days from the Advisory date. PJM Dispatch posts the alert on selected PJM websites and NERC RCIS. PJM provides FE with RCIS notifications via email.

1. **WHEN** receiving Minimum Generation Advisory, **LOG** the information.
2. **WHEN** receiving cancellation of Minimum Generation Advisory,
   THEN UPDATE AND COMPLETE existing iTOA log.

17. Minimum Generation Alert

If the expected generation level is within 2,500MW of normal minimum energy limits, then PJM Dispatch issues Minimum Generation Alert for the specified light load period via the ALL-CALL and posts the alert on selected PJM websites and NERC Reliability Coordinator Information System (RCIS). PJM provides FE with RCIS notifications via email. PJM provides members with adjusted minimum generation, valley load estimate, and margin values.

WHEN receiving Minimum Generation Alert, **LOG** the information.

WHEN receiving cancellation of Minimum Generation Alert,
THEN UPDATE AND COMPLETE existing iTOA log.

18. Minimum Generation Emergency Declaration

PJM Dispatch issues Minimum Generation Emergency Declaration via the ALL-CALL and notifies members of survey results and strategy. PJM provides the anticipated amount of reducible generation to be reduced (by percentage) and a forecast time of the reduction. PJM Dispatcher also posts the Declaration on selected PJM websites and NERC RCIS. PJM provides FE with RCIS notifications via email.

1. **WHEN** receiving Minimum Generation Declaration, **COMPLETE** the following steps:
   1.A. **RECEIVE** information from PJM on the anticipated amount of reducible generation in percent, as well as a forecasted time of the reduction.
   1.B. **LOG** the information.
2. **WHEN** receiving cancellation of Minimum Generation Declaration,
   THEN UPDATE AND COMPLETE existing iTOA log.

19. Minimum Generation Event

PJM implements Minimum Generation Event when PJM Dispatch can no longer match the decreasing load and utilization of emergency reducible generation is necessary. PJM shall not differentiate between resource types during Minimum Generation Event. All resources are expected to reduce proportionally based on the percentage Emergency Reducible Generation declared.

1. **WHEN** receiving Minimum Generation Event, **COMPLETE** the following steps:
   1.A. **RECEIVE** information from PJM on the anticipated amount of reducible generation in percent, as well as a forecasted time of the reduction.
   1.B. **LOG** the information.
2. **WHEN** receiving cancellation of Minimum Generation Event,
   THEN UPDATE AND COMPLETE existing iTOA log.

20. Local Minimum Generation Event

PJM implements Local Minimum Generation Event when there is an excess generation situation in a localized area or set of areas, which could result in stability issues or constrained operations.

1. **WHEN** receiving Local Minimum Generation Event, **COMPLETE** the following steps:
    1.A. **RECEIVE** information from PJM on the anticipated amount of reducible generation in percent, and a forecasted time of the reduction in the FE Area.
    1.B. **LOG** the information.
2. **WHEN** receiving cancellation of Local Minimum Generation Event,
THEN UPDATE AND COMPLETE existing iTOA log.

21. High System Voltage

PJM issues High System Voltage when portions of the PJM RTO are experiencing a low load/high voltage condition. PJM issues an ALL-CALL to PJM members to initiate the Action.

1. **WHEN** receiving High System Voltage, **COMPLETE** the following steps:
    1.A. **LOG AND ISSUE** SCC notifications.
    1.B. **NOTIFY** DCCs,
INSTRUCT to remove SCADA controlled capacitor as able,
AND REQUEST feedback of actions taken.
    1.C. **ENSURE** EDOA log entry indicates if there were no actions left to be taken at this time or if actions were taken.
    1.D. **ENSURE** appropriate substation switchable capacitors, including distribution capacitors, are out of service.
    1.E. **ENSURE** all available shunt reactors are in service where system conditions permit.
    1.F. **OPERATE** SVCs in the lead to absorb VARs from the grid to lower voltage according to the specific SVC procedures.
    1.G. **REVIEW AND ADJUST** LTC settings as appropriate.
        1.G.1. **COORDINATE** all LTC (230kV and above) and voltage schedule adjustments with PJM Dispatch.
    1.H. **ENSURE** synchronous condenser(s) and SVC(s) are in service.
    1.I. **REVIEW AND ADJUST** generator voltage schedules to have generators absorb reactive power as modeled in the unit D-curve or as appropriate.
        1.I.1. **COORDINATE** voltage schedule adjustments (including default voltage schedule) with PJM Dispatch.
    1.J. **REVIEW** plans to determine if any maintenance or testing, scheduled or being performed, on any monitoring, control, or transmission equipment can be deferred or cancelled.
2. **WHEN** receiving cancellation of High System Voltage, **COMPLETE** the following steps:
    2.A. **LOG AND ISSUE** SCC notifications.
    2.B. **NOTIFY** DCCs,
AND LOG call(s).

22. General Assistance to Adjacent Control Areas

When adjacent Balancing Areas are deficient in generation and are requesting assistance from the PJM RTO, specific actions are taken, provided the adjacent Balancing Area has taken the same actions requested of PJM.

1. **WHEN** receiving Request for Assistance, **COMPLETE** the following steps:
    - 1.A. **RECEIVE** information from PJM on the deficient Control Zone and the FE emergency procedure(s) to be implemented.
    - 1.B. **LOG AND ISSUE** SCC notifications.
    - 1.C. **NOTIFY** DCCs,
      AND LOG call(s).
    - 1.D. **PERFORM** emergency procedures requested by PJM until PJM cancels the assistance request.
    - 1.E. **NOTIFY** PJM of the emergency procedures implemented to the PJM power dispatcher,
      AND LOG call(s).
2. **WHEN** receiving cancellation of Request for Assistance, **COMPLETE** the following steps:
    - 2.A. **LOG AND ISSUE** SCC notifications.
    - 2.B. **NOTIFY** DCCs,
      AND LOG call(s).

23. Weather and Environmental Emergencies

To maximize the PJM RTO ability to operate reliably during periods of extreme and/or prolonged severe weather conditions, procedures are necessary to keep all affected system personnel aware of the forecasted and/or actual status of the system and to ensure that maximum levels of unit availability are attained.

A resource restricted unit (less than 72 hours at max capacity) should generally be classified as a Resource Limited Unit. Natural gas-fired units experience fuel supply/transportation restrictions are not considered Resource Limited Units due to the daily nature of their restrictions and are excluded from this reporting. Instead, natural gas-fired units should reflect those fuel restrictions when updating their unit offer parameters within Markets Gateway, and report unplanned outages if they are unable to run.

PJM must be informed about the number of hours available for all Resource Limited Units with restrictions related to on-site fuel, emissions hours, water, or other consumables via Markets Gateway. In addition, when PJM declares Conservative Operations, Cold Weather Alert, or Hot Weather Alert, certain minimum levels have been established for Resource Limited Units where additional reporting is required.

24. Conservative Operations

REFER to ***SCC-EOP-002 Conservative Operations***.

25. Cold Weather Advisory/Alert

Cold Weather Advisory

The Cold Weather Advisory provides early notice that forecasted temperatures may call for a Cold Weather Alert. The early notification of an Advisory aims to provide PJM members ample time to gather information required by NERC standards EOP-011, IRO-10, and TOP-003. Members take any necessary precautions to prepare generating facilities for cold weather operations. PJM issues a Cold Weather Advisory on a zonal basis or RTO basis when temperatures are forecasted to trigger a Cold Weather Alert, typically more than 24 hours in advance.

1. **WHEN** receiving Cold Weather Advisory, **COMPLETE** the following steps:
   - 1.A. **LOG AND ISSUE** SCC notifications.
   - 1.B. **NOTIFY** DCCs,
     AND LOG call(s).
2. **IF** PJM sends additional notification/All-Call,
   OR WHEN receiving early cancellation of a Cold Weather Advisory, **COMPLETE** the following steps:
   - 2.A. **LOG AND ISSUE** SCC notifications.
   - 2.B. **NOTIFY** DCCs,
     AND LOG call(s).
3. **ONCE** a Cold Weather Advisory expires,
   THEN UPDATE AND COMPLETE existing iTOA log.

Cold Weather Alert

The Cold Weather Alert notifies PJM members to prepare personnel and facilities for expected extreme cold weather conditions. As a general guide, PJM can initiate a Cold Weather Alert across the RTO or on a Control Zone basis when the forecasted weather conditions approach minimum or actual temperatures of 10 degrees Fahrenheit or below. PJM can initiate a Cold Weather Alert at higher temperatures if PJM anticipates increased winds or if PJM projects a portion of gas-fired capacity is unable to obtain spot market gas during load pick-up periods (refer to ***PJM M-13***, *Section 3.3: Cold Weather Advisory/Alert* and *Attachment A: Public Notification Statements*). PJM initiates Cold Weather Alert for the appropriate region(s) in advance of the operating day.

IF Conservative Operations is issued, **THEN REFER** to ***SCC-EOP-002 Conservative Operations***.

1. **WHEN** receiving Cold Weather Alert, **COMPLETE** the following steps:
   - 1.A. **LOG AND ISSUE** SCC notifications.
   - 1.B. **NOTIFY** DCCs,
     AND LOG call(s).
   - 1.C. **REVIEW** plans to determine if any maintenance or testing, scheduled or being performed, on any monitoring, control, or transmission equipment can be deferred or cancelled.
   - 1.D. **EVALUATE** all Clearances, CBC, Hold-Offs, and INFO orders.
   - 1.E. **Sub-transmission**: **IF** any work impacts BES components,
     THEN CANCEL or **DEFER** the outage.
   - 1.F. **Transmission**: For RTEP and ETF projects, **CONFER** with PJM on continuation of the outage.

1.F.1. Clearances

- **IF** any work has impacts,
  THEN CANCEL or **DEFER** the outage.
- **IF** no impact,
  THEN CONFER with PJM on continuation of the outage.

1.F.2. CBC, Hold-Offs, and Info Orders

- **IF** loss of facility impacts system,
  THEN CANCEL or **DEFER**.
- **IF** no impact,
  THEN ALLOW to continue.

2. During the PJM issued Cold Weather Alert, GM/Director completes the following steps:

   2.A. **ASSESS** the current situation,
   AND DETERMINE if an issuance of a “Public/Media Notification Message” is warranted.

   2.B. **IF** a “Public/Media Notification Message” is warranted,
   THEN NOTIFY the External Communications Department, who issues the message.

      2.B.1 **REFER** to ***PJM M-13,*** *Attachment A: Public Notification Statements*.

3. **IF** PJM sends additional notification/All-Call,
   OR WHEN receiving early cancellation of a Cold Weather Alert,
   THEN COMPLETE the following steps:

   3.A. **LOG AND ISSUE** SCC notifications.

   3.B. **NOTIFY** DCCs,
   AND LOG call(s).

4. **WHEN** a Cold Weather Alert expires,
   THEN UPDATE AND COMPLETE existing iTOA log.

26. Hot Weather Alert

The Hot Weather Alert notifies PJM members to prepare personnel and facilities for expected extreme hot and/or humid weather conditions which may cause capacity requirements/unit unavailability to be substantially higher than forecast are expected to persist for an extended period. In general, PJM issues Hot Weather Alert on a Control Zone basis if projected temperatures are to exceed 90 degrees with high humidity for multiple days. PJM may also issue Hot Weather Alert at lower temperatures during the Spring and Fall periods if there are significant amounts of generation and transmission outages that reduce available generating capacity (refer to ***PJM M-13***, *Section 3.4: Hot Weather Alert* and *Attachment A: Public Notification Statements*).

IF Conservative Operations is issued, **THEN REFER** to ***SCC-EOP-002 Conservative Operations***.

1. **WHEN** receiving Hot Weather Alert, **COMPLETE** the following steps:
   - 1.A. **LOG AND ISSUE** SCC notifications.
   - 1.B. **NOTIFY** DCCs,
     AND LOG call(s).
   - 1.C. **REVIEW** plans to determine if any maintenance or testing, scheduled or being performed, on any monitoring, control, or transmission equipment can be deferred or cancelled.
   - 1.D. **EVALUATE** all Clearances, CBC, Hold-Offs, and INFO orders.
   - 1.E. **Sub-transmission**: **IF** any work impacts BES components,
     THEN CANCEL or **DEFER** the outage.
   - 1.F. **Transmission**: For RTEP and ETF projects, **CONFER** with PJM on continuation of the outage.
     - 1.F.1. Clearances
       - **IF** any work has impacts,
         THEN CANCEL or **DEFER** the outage.
       - **IF** no impact,
         THEN CONFER with PJM on continuation of the outage.
     - 1.F.2. CBC, Hold-Offs, and Info Orders
       - **IF** loss of facility impacts system,
         THEN CANCEL or **DEFER**.
       - **IF** no impact,
         THEN ALLOW to continue.

During the PJM issued Hot Weather Alert, GM/Director completes the following steps:

ASSESS the current situation,
AND DETERMINE if an issuance of a “Public/Media Notification Message” is warranted.

IF a “Public/Media Notification Message” is warranted,
THEN NOTIFY the External Communications Department, who issues the message.

REFER to ***PJM M-13*** *Attachment A: Public Notification Statements*.

IF PJM sends additional notification/All-Call,
OR WHEN receiving early cancellation of a Hot Weather Alert,
THEN COMPLETE the following steps:

LOG AND ISSUE SCC notifications.

NOTIFY DCCs,
AND LOG call(s).

WHEN a Hot Weather Alert expires,
THEN UPDATE AND COMPLETE existing iTOA log.

27. Inter RTO Natural Gas Coordination Procedure

SECTION NOTE

Transmission Operations has no Inter RTO Natural Gas Coordination Procedure Actions to implement.

PJM, Independent System Operator (ISO) New England, and New York ISO rely on natural gas-fired generation resources for a significant amount of their capacity. During periods of extremely cold weather, the natural gas supply to gas-fired generators may become impacted due to the various demands placed on the pipelines and the manner in which the generation owners may have contracted for their gas transportation.

During normal operations, and when extremely cold weather is expected in any or all parts of the Northeast US, ISO New England, New York ISO, and PJM (the RTOs) will jointly act to communicate with the interstate natural gas pipelines, and coordinate actions to be taken to manage potential gas supply inadequacy situations as described in the Memorandum of Understanding on Natural Gas & Electric Interdependency.

To facilitate this process, PJM has developed the following, to be shared among the RTOs and combined such that each RTO has a complete set of information for facilities in the combined area:

- Database of natural gas-fired generation on its system, including its interstate pipeline supplier or local distribution company (LDC), connection point on the gas pipeline system, and contract arrangements for gas supply and transmission
- Complete set of maps of the interstate gas pipelines serving units on its system
- Contact list for personnel at gas pipelines or LDC.

28. Thunderstorms and Tornadoes

If one or more severe thunderstorms exist in the vicinity of a critical bulk power transmission facility, and automatic reclosing schemes are not in service, then it is necessary to take action. When thunderstorms are in the vicinity of the PJM RTO, automatic reclosing capability should be in service for all Extra High Voltage (EHV) and critical 230kV and above circuits.

If tornadoes are reported in an area, then the failure of automatic reclosing to restore a transmission facility to service should be interpreted as a more serious existing failure.

1. **DETERMINE** whether to manually disable auto-reclosing on certain lines that experience multiple re-close attempts during storms or other times during increased likelihood of “non-self-clearing” faults.
    1.A. **IF** disabling auto-reclose,
    THEN INFORM PJM of disabled auto-reclose on any transmission facilities.
2. **CONSIDER** dispatching line patrol to ensure that line can be safely returned to service or to determine if additional maintenance or repair activity is required.
3. **WHEN** receiving notification of possible or probable tornado or severe thunderstorm, **COMPLETE** the following steps:
    3.A. **LOG AND ISSUE** SCC notifications.
    3.B. **NOTIFY** DCCs,
    AND LOG call(s).
    3.C. **INFORM** PJM dispatcher of any storms in FE system,
    AND LOG call(s).
    3.D. **DETERMINE** which auto reclosing is to be restored to service.
    3.E. **REPORT** this information to PJM dispatcher.
    3.F. **LOG** call(s).
    3.G. **RESTORE** auto-reclosing.

29. Geomagnetic Disturbances (GMD) Operating Plan

Geomagnetically-induced currents (GICs) that are caused by the GMDs that result from solar storms and that flow through the power system equipment and facilities may cause increases in system reactive requirements, equipment damage, voltage drops, and disruption of interconnected system operation.

FE measures GICs on transformer neutrals at several EHV substations [redacted] PJM monitors geomagnetic conditions daily and declares GMD Warnings and GMD Actions.

FE submits this ***SCC-EOP-001 Emergency Operations*** procedure to PJM annually or within 30 days of a GMD Operating Plan change.

IF Conservative Operations is issued, **THEN REFER** to ***SCC-EOP-002 Conservative Operations***.

GMD Warning

SUBSECTION NOTE

PJM Warnings for GMDs may change from one level to another during an event (e.g., K7 to K8). Each change in level must be logged with notifications sent.

PJM Initiates a GMD Warning via the ALL-Call System when the National Oceanic and Atmospheric Administration (NOAA) issues a warning or an alert of a potential geomagnetic storm of severity of K7 or greater.

1. **LOG AND ISSUE** SCC Notifications.
   1.A. **USE** canned messages,
   AND MODIFY them as needed.
2. **NOTIFY** appropriate DCCs, **AND LOG** call(s).
   - DCCs monitor their equipment that is susceptible to a GMD.
3. **PROVIDE** confirmation of measurement values as requested by PJM,
   AND LOG call(s).
4. **FE South: PERFORM** the following steps for a GMD Warning.
   - **ACCESS** the GMD Summary display in EMS,
     AND MONITOR DC Neutral currents at the following Substations:

[redacted]

IF any Xfmr DC neutral current exceeds LIM1 for 10 minutes,

THEN NOTIFY PJM,

AND REQUEST PJM to consider issuing a GMD Action

GMD Action

1. **INITIATE** the GMD procedure if at least one of the following occurs:

- Receipt of PJM ALL-CALL declaring a GMD Action
- **FE South only:** Receipt of an alarm above limit 1 for DC neutral current for any individual transformer shown on the GMD display in EMS for 10 minutes at any FE substation that has monitoring. The EMS display can track the time to determine how long the alarm has been activated.
  - **IF** this condition is observed,
    THEN CONFIRM with PJM the existence of a GMD Action.
  - **IF** PJM confirms a GMD Action,
    THEN CONTINUE with the remaining GMD Action steps in this procedure.
    - FE has transformer DC neutral current monitoring at the following substations:
      [redacted]

2. **COMPLETE** the following steps:
   2.A. **LOG AND ISSUE** SCC Notifications.
   2.A.1 **USE** canned messages,
   AND MODIFY them as needed.
3. **NOTIFY** appropriate DCCs,
   AND LOG call(s).
   - DCCs monitor their equipment that is susceptible to a GMD.
4. **NOTIFY** PJM of transmission equipment that experiences problems resulting from GMD,
   AND LOG call(s).
5. **PROVIDE** confirmation of measurement values as requested by PJM,
   AND LOG call(s).
6. **DISPATCH** field personnel to ensure GIS related measurements at [redacted] match EMS measurements.
7. **FOLLOW** any PJM Operating Instructions associated with a GMD,
   AND LOG call(s).
8. **REPORT** all GMD-related actions to PJM,
   AND LOG call(s).

9. **FE South only:** COMPLETE the following steps.

STEP 5.A. NOTES

Sudden pressure tripping is always enabled for the [redacted]

Gas collector tripping [redacted] is always enabled for the [redacted]

9.A. **RECOMMEND** that PJM consider directing FE South to **TURN OFF** the Global Neutral Protection scheme via the GMD display in EMS, to achieve the following:

[redacted] Enable sudden pressure tripping for [redacted]

- Enable gas collector tripping at 200cc for all 500/138kV and 500/230kV transformers at [redacted]

9.B. **IF** Global Neutral Protection turned off,
THEN LEAVE OFF for at least [redacted] to allow transformer gassing to stabilize.

9.C. **REQUEST** Substation Maintenance to collect samples of bottom oil, as well as gas from the gas collector, for any transformers that trip out of service.

9.D. **LOG** call(s).

10. **FE South only: WHEN** operating in the PE Split, **RECOMMEND** that PJM direct FE South to **CHANGE** the operating configuration [redacted]

10.A. At the direction of PJM, **EXIT** the [redacted]

10.A.1 MONITOR the power flow on [redacted]

[redacted] **IF** flow exceeds the thermal limits of the [redacted] line,
THEN RECOMMEND that PJM direct FE South to CLOSE [redacted]

10.B. **RETAIN** this operating configuration for the greater of one hour or the end of the GMD.

10.C. At PJM direction, **ENERGIZE** EHV and transmission capacitors in area affected by GMD.

10.C.1 **REFER** to the voltage limits listed in ***SCC-NOP-001 Normal Operations***.

11. **DETERMINE** the end/cancellation of a GMD through at least one of the following methods:

- PJM declares the end of the GMD in an ALL-CALL message or via a predetermined time in a PJM Emergency Message(s).
- **FE South only:** DC neutral currents on [redacted] fall below [redacted] for longer than one hour and continue to decrease, AND there is no further evidence of continued GMD.

11.A. **FE South only: IF** the condition above for [redacted]s observed,
THEN VERIFY with PJM.

12. **FE South only: CONTINUE** to observe the actions outlined in this procedure subsection that have time constraints until the time constraints have elapsed.

- Global Neutral Protection scheme
- PE Split configuration

13. **IF** PJM sends additional notification/All-Call,
OR WHEN receiving early cancellation of a GMD alert,
THEN COMPLETE the following steps:

13.A. **LOG AND ISSUE** SCC notifications.

13.B. **NOTIFY** DCCs,
AND LOG call(s).

WHEN a GMD expires,
THEN UPDATE AND COMPLETE existing iTOA log.

30. Sabotage/Terrorism Emergencies/Bomb Threats

For situations involving sabotage/terrorism emergencies or bomb threats, FE TSO completes actions outlined in this section.

Bomb threats are included in the definition of sabotage and must be handled in accordance with ***PJM M-13***, *Section 4: Sabotage/Terrorism Emergencies*. Therefore, any actual or suspected bomb threats related to the BES must be handled in accordance with this procedure section.

REFER to ***SCC-EOP-001A Att. A: PJM Manual 13 Section 4 Sabotage/Terrorism Emergencies*** for more information.

For additional information, **REFER** to ***Form X-2114 Handling Bomb Threats***, available here: [redacted]

1. **WHEN** an actual or suspected incident or disturbance related to the FE transmission system is identified, **COMPLETE** the following steps:
   - 1.A. **NOTIFY** PJM, unless PJM is the source of the information.
   - 1.B. **LOG AND ISSUE** SCC notifications.
   - 1.C. **NOTIFY** DCCs,
     AND LOG call(s).
2. **REPORT** all incidents involving suspected or actual acts of sabotage, cyber or physical in nature, to Corporate Security by contacting the FE Service Desk. at the appropriate number listed below, in accordance with ***Corporate Security Policy 4.0. Security Incident Reporting & Investigation***.

From this location:	Dial this number:
FE East and FE West	3-811-HELP (3-811-4357)
FE South	8-811-HELP (8-811-4357)
External to FE property	[redacted]

   - 2.A. **IF** Cyber Sabotage, **THEN**:
     - 2.A.1. **CHOOSE** Option #1.
     - 2.A.2. **PRESS** 1 again.
     - 2.A.3. **REPORT** to the operator “A Cyber Security Incident.”
   - 2.B. **IF** Physical Sabotage, **THEN**:
     - 2.B.1. **CHOOSE** Option #6.
     - 2.B.2. **REPORT** to the security officer “A Physical Security Incident.”
   - 2.C. **IF** Physical Sabotage at a substation,
     THEN CONSIDER the following actions:
     - 2.C.1. **STUDY AND DISCUSS** with PJM potential impacts to BES if substation is lost.
     - 2.C.2. **WORK** with Corporate Security and Transmission System Operations Center (TSOC) to determine level of threat.
     - 2.C.3. **STUDY AND DISCUSS** with PJM whether to de-energize equipment.
     - 2.C.4. **NOTIFY** Regional and other personnel to stay clear of substation.
   - 2.D. **REFER** to ***SCC-EOP-004 Emergency Incident and Disturbance Reporting and Response***.

2.E. **LOG** PJM Security messages and TSO actions taken during the periods when PJM is in a Threat Level.

- PJM may determine to operate more conservatively than in normal conditions.
- Responses should involve plans to safeguard personnel and maintain reliable operations.

2.E.1. **COORDINATE** actions taken with PJM, supporting the goal to keep those who need to know informed of all PJM/TSO security communications.

2.E.2. **MAINTAIN** diligence in logging all information, with the appropriate time(s) recorded.

2.F. For additional information, **REFER** to:

- ***Corporate Security Policy 4.0 Security Incident Reporting & Investigation***
- ***SCC-EOP-004 Emergency Incident and Disturbance Reporting and Response***
- ***SCC-EOP-001A Att. A: PJM Manual 13 Section 4: Sabotage/Terrorism Emergencies***

3. **WHEN** receiving cancellation of Sabotage or Terrorism Emergency, **COMPLETE** the following steps:

3.A. **LOG AND ISSUE** SCC notifications.

3.B. **NOTIFY** DCCs,
AND LOG call(s).

31. Low Voltage Alert

The Low Voltage Alert serves to heighten awareness, increase planning, analysis, and preparation efforts when heavy loads and low voltages are anticipated in upcoming operating periods. PJM issues this alert to members (Generation and Transmission) when projections show these conditions are expected. PJM may issue this Alert for the entire PJM RTO or for specific Control Zones or subset of Control Zones.

1. **WHEN** receiving Low Voltage Alert, **COMPLETE** the following steps:
    - 1.A. **LOG AND ISSUE** SCC notifications.
    - 1.B. **NOTIFY** DCCs,
      AND LOG calls.
    - 1.C. **ENSURE** all capacitors are available for service,
      AND CANCEL any scheduled, non-emergency capacitor work.
    - 1.D. **ENSURE** synchronous condenser(s) and SVC(s) are in service.
    - 1.E. **ENSURE** all generating units are operating at their voltage schedule,
      AND CONFIRM the reactive capability available.
    - 1.F. **ENSURE** that all deferrable maintenance or testing that affects capacity or critical transmission is halted.
    - 1.G. **ENSURE** that monitoring or control maintenance work that may impact the system is halted.
    - 1.H. **PREPARE** for a Reactive Reserve Check by reviewing the status and availability of all critical reactive resources.
        - 1.H.1. **IF** discovered while reviewing reactive resources,
          THEN LOG AND REPORT to PJM any deviations or deficiencies of reactive capabilities from what is modeled.
2. **IF** PJM sends additional notification/All-Call
   OR WHEN receiving early cancellation of a Low Voltage Alert,
   THEN COMPLETE the following steps:
    - 2.A. **LOG AND ISSUE** SCC notifications.
    - 2.B. **NOTIFY** DCCs,
      AND LOG call(s).
3. **WHEN** a Low Voltage Alert expires,
   THEN UPDATE AND COMPLETE existing iTOA log.

32. Heavy Load Voltage Schedule Warning

PJM issues a Heavy Load Voltage Schedule Warning to members (Generation and Transmission) via the ALL-CALL system to request members to prepare for maximum support of voltages on the bulk power system. PJM may issue this Warning for the entire PJM RTO or for specific Control Zones or subset of Control Zones.

1. **WHEN** receiving Heavy Load Voltage Schedule Warning, **COMPLETE** the following steps:
    - 1.A. **LOG AND ISSUE** SCC notifications.
    - 1.B. **NOTIFY** DCCs,
      AND LOG call(s).
    - 1.C. **ENSURE** all available capacitors are in service.
    - 1.D. **ENSURE** all generating units are operating at their voltage schedule.
    - 1.E. **CONFIRM** the reactive capability available.
    - 1.F. **ENSURE** that where possible, all underlying reactors are out of service, all capacitors on the underlying system are in service, and transformer taps are adjusted to ensure distribution capacitors are in service.
    - 1.G. **ENSURE** synchronous condenser(s) and SVC(s) are in service.
    - 1.H. **ENSURE** all voltage regulators are in service.
2. **WHEN** receiving cancellation of Heavy Load Voltage Schedule Warning, **COMPLETE** the following steps:
    - 2.A. **LOG AND ISSUE** SCC notifications.
    - 2.B. **NOTIFY** DCCs,
      AND LOG call(s).

33. Heavy Load Voltage Schedule Action

PJM issues a Heavy Load Voltage Schedule Action to members (Generation and Transmission) at peak load periods via the ALL-CALL system to request maximum support of voltages on the bulk power system and increase reactive reserves at the EHV level. PJM may issue this Action for entire PJM RTO or for specific Control Zones or subset of Control Zones.

1. **WHEN** receiving Heavy Load Voltage Schedule Action, **COMPLETE** the following steps:
    - 1.A. **LOG AND ISSUE** SCC notifications.
    - 1.B. **NOTIFY** DCCs,
      AND LOG call(s).
    - 1.C. **FE East only: SELECT** “Heavy Schedule” ON from any of the Voltage Schedule displays.
        - 1.C.1. The HEAVY_SC indicator should display within 60 seconds.
        - 1.C.2. This automatically changes the bar charts and the input to PJM Generator Performance Monitor program.
    - 1.D. **ENSURE** that where possible, all reactors are out of service, all capacitors on the underlying system are in service, and transformer taps are adjusted to ensure distribution capacitors are in-service.
    - 1.E. **ENSURE** all voltage regulators are in service.
    - 1.F. **ENSURE** all units on the 230kV system and below increase MVAR output as necessary to maintain designated bus voltage schedules or nominal voltage, whichever is greater.
    - 1.G. **ENSURE** synchronous condenser(s) and SVC(s) are in service.
    - 1.H. **FE West, Cleveland Area only: ENSURE** all generators, synchronous condenser(s), and SVC(s) are operated so that a 1000 MVAR reserve is maintained.
        - 1.H.1. Maintaining the units AVR in ON and ensuring the capacitors at the EHV level are in service will help in establishing a 1000 MVAR reserve.
    - 1.I. **NOTIFY** PJM power dispatcher if any units are approaching maximum MVAR output, abnormal unit MVAR restrictions or any voltage regulator taken out of service,
      AND LOG call(s).
2. **WHEN** receiving cancellation of Heavy Load Voltage Schedule Action, **COMPLETE** the following steps:
    - 2.A. **LOG AND ISSUE** SCC notifications.
    - 2.B. **NOTIFY** DCCs,
      AND LOG call(s).
    - 2.C. **FE East only: SELECT** “Heavy Schedule” OFF from any of the Voltage Schedule displays.
        - 1.I.1. The HEAVY_SC indicator should return to the normal schedule in 60 seconds.

34. Post Contingency Local Load Relief Warning

Post Contingency Local Load Relief Warnings (PCLLRWs) can be initiated by PJM for market facilities and by the TSO for non-market facilities.

PJM initiates PCLLRW for market facilities to provide advance notice to a TO of the potential for load shed in their area. PJM issues the PCLLRW after all other means of transmission constraint control have been exhausted or until sufficient generation is on-line to control the constraint within designated limits and timelines as identified in ***PJM M-03***, *Section 2: Thermal Operating Guidelines* and *Section 3: Voltage & Stability Operating Guidelines*. PJM provides to the TO the amount of load, if the contingency concern is thermal or voltage, and the effective location.

PCLLRWs aim to relieve localized constraints, generally 230kV and below. **REFER** to ***SCC-DG-006 PCLLRW Tool*** for additional information on PJM and TSO issued PCLLRWs.

1. Periodically, **REVIEW** the PCLLRW application to ensure that enough load is selected for the issued PCLLRWs and that the status is not deficient.
2. **WHEN** receiving PCLLRW, **COMPLETE** the following steps:
   - 2.A. **RECEIVE** information from PJM via the PCLLRW Tool, or information about an FE-issued PCLLRW, regarding the amount of relief needed on the constrained facility to return flows or voltages below the Emergency ratings.
   - 2.B. **PERFORM** STNET studies to determine the amount and location of load relief needed for the constrained facility.
   - 2.C. **REVIEW** any limiting factors and determine if ratings are correct.
     - 2.C.1. **IF** valid switching solution exists,
       THEN CONTACT Transmission Line Loadability (TLL) Engineers during business hours or next business day to verify ratings. **REFER** to ***SCC-NOP-202A Att. A: Forced Operations Contact List***.
     - 2.C.2. **IF** no valid switching solution exists,
       AND/OR the solution is load dump,
       THEN Shift Supervisor makes an immediate call-out to TLL Engineers.
   - 2.D. **REVIEW** any Post-Contingency Switching Options or Post-Contingency Local Load Relief Actions if the switching options fail.
   - 2.E. **REVIEW** any work that could potentially impact the contingency element,
     AND DETERMINE if work should be stopped.
   - 2.F. **NOTIFY** the affected DCCs. The Distribution Dispatchers prepare to dump load in the amount requested, with minimal delay, if required. They should also review their load dump procedures and be prepared to promptly dump load in the amount requested.
   - 2.G. **NOTIFY** PJM when the load to shed has been identified. Include in the notification if there is insufficient load to shed, or insufficient time to implement the load shed, to reduce the post contingency flows below the emergency rating.
   - 2.H. **LOG AND ISSUE** SCC notifications, including the following information:
     - MVA/MW flow to be maintained or voltage level to be maintained
     - Area where load is to be curtailed
     - Total MW to be shed
     - Overloaded facility (thermal) or the area of low voltage
     - Lost facility causing the contingency
     - Percentage of the violation OR the contingency figure and the rating of the facility
     - Post contingency switching solution (if there is one)
     - Post contingency generation re-dispatch (if applicable)
     - Time issued

2.I. **SEND** an Update Notification for every 10 MW increase in PCLLRW.

2.J. **INCREASE** monitoring of the constraint.

2.J.1 **IF** the contingency occurs,
THEN REPORT its occurrence to PJM.

- PJM directs load shedding as needed.

3. **IF** FE issued the PCLLRW,
THEN CANCEL warning, when appropriate.
ELSE, **CANCEL** warning as PJM directs.

3.A. **LOG AND ISSUE** SCC notifications.

3.B. **NOTIFY** affected DCCs,
AND LOG call(s).

4. **PERFORM** Post-Contingency Load Dump Limit Exceedance Analysis.

4.A. **REFER** to the following documents for more information:

4.A.1 ***PJM M-13***, *Section 5.4.1: Post-Contingency Load Dump Limit Exceedance Analysis (Cascade Analysis)*

4.A.2 ***SCC-NOP-001A Att. A Limit Reference***

4.A.3 ***SCC-NOP-001H Att. H Subtransmission Limit Reference***

4.B. **WHEN** receiving notice of an N-2 Post-Contingency Load Dump Violation, **COMPLETE** the following steps:

4.B.1 **RECEIVE** information from PJM regarding the N-2 Load Dump Violation condition.

4.B.2 **PERFORM** STNET studies to determine if N-2 Load Dump Violation condition is localized or a potential cascade situation.

4.B.3 **REVIEW** STNET results with PJM,
AND LOG call(s).

4.C. **IF** it is determined that it is a localized event,
THEN DO NOT TAKE additional pre-contingency actions.

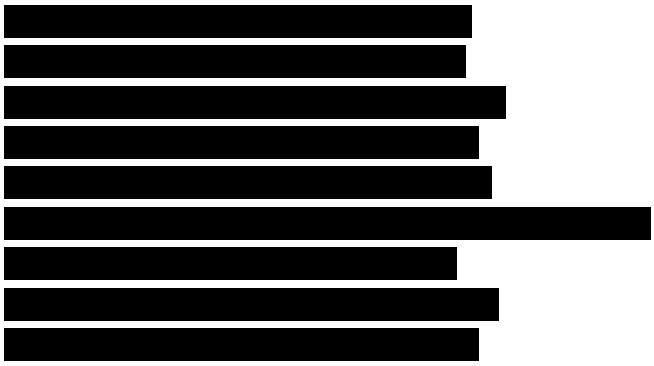
4.D. **IF** it is determined that it is a potential cascade situation,
THEN SHED load as directed by PJM,
AND LOG call(s).

4.D.1 **DIRECT** DCC to dump load in the amount requested, with minimal delay,
AND LOG call(s).

35. Interconnection Reliability Operating Limits (IROL) Manual Load Dump Warning/Action

PJM identifies specific facilities that, if loaded above a designated limit, could significantly impact system reliability. Such facilities are not localized constraint, but rather wide-area limits that are a result of excessive transfers or an indication of wide-area capacity deficiencies. PJM dispatch must quickly act to mitigate IROL facilities in accordance with operating procedures identified in ***PJM M- 03***, *Section 2: Thermal Operating Guidelines* and *Section 3: Voltage & Stability Operating Guidelines*, and in ***PJM M-13***, *Section 5: Transmission Security Emergencies*.

1. Using the following list of identified IROL facilities, **REVIEW** EMS to determine which line(s) are included in the IROL:



2. For IROL Limit Mitigation Procedures, **COMPLETE** the following steps:
   - 2.A. **TAKE** immediate actions based on PJM operating instructions.
   - 2.B. **USE** applicable actions located within this procedure.
   - 2.C. **NOTIFY** DCCs as soon as possible (prior to taking action, or immediately after taking action).
   - 2.D. **LOG** call(s), operating instruction(s), and actions(s).
3. **REFER** to ***SCC-EOP-003 Load Dump Actions***.

36. Transmission Loading Relief (TLR)

SECTION NOTE

Currently there are no FE actions required for a TLR.

PJM monitors designated transmission facilities within the PJM RTO, as well as tie-lines with adjacent interconnected control areas. When PJM determines overload conditions exist on any designated facility, or would exist for the first contingency loss of another facility, PJM will take all reasonable, necessary action(s) to restore transmission facilities within operating security limits.

During periods of excessive circulation, PJM issues a TLR and curtails transactions that are not willing to pay congestion on the PJM system. However, under normal system conditions, PJM redispatches internal generation to the extent possible. If more relief is needed, then PJM performs the following actions:

- Implement the NERC Transmission Loading Relief Procedure
- Curtail external transactions and/or charge external customers for the cost of congestion as specified in the PJM Open Access Transmission Tariff

If all transactions for which transmission customers have elected not to pay through congestion have been curtailed and further relief is still required on the transmission facility, then PJM begins to curtail all transactions (internal and external) for which transmission customers have elected to pay through congestion, in priority order.

37. RCIS Notifications

SECTION NOTE

RCIS notifications may name or describe FE East as GPU, FE South as AP, and FE West as ATSI.

PJM sends RCIS notifications (via OATI.net) to FE control areas via the following email distribution group: [redacted]

1. **RelCoor for each control area: COMPLETE** the following steps.
   - 1.A. **MONITOR** RCIS emails from PJM for events that include FirstEnergy by name.
   - 1.B. **WHEN** receiving email for an event that mentions any specific FE control area, **LOG AND ISSUE** SCC notifications.

38. Reserve Definitions and Applications

REFER to ***PJM Manual 10 Pre-Scheduling Operations (PJM M-10)***, *Section 3.1 Reserve Definition*, for more information about:

- Day-ahead Scheduling (Operating) Reserve
- Contingency (Primary) Reserve
- Synchronized Reserve
- Non-Synchronized Reserve
- Secondary Reserve

39. Fault Location Isolation and Service Restoration (FLISR) Operations

SECTION NOTE

FLISR Operations applies to FE West only.

DMS uses FLISR to automatically perform switching based on a fault location system. When a substation supply is de-energized, FLISR attempts to restore the load from other sources. FLISR becomes DISABLED during the following events to prevent this load from being automatically restored:

- Automatic Load Shed (Under Frequency Load Shed [UFLS]) event
- Manual Load Shed (Block Load Shed [BLS] or Rotating Load Shed [RLS]) event

FLISR Operations During Manual Load Shed Event (BLS/RLS)

- When BLS or RLS is ARMED, FLISR automatically becomes disabled.
- When BLS or RLS is DISARMED, FLISR automatically becomes enabled.
- No TSO or RelCoor system actions are needed.
  - **REFER** to ***SCC-EOP-003 Load Dump Actions*** for more information.

FLISR Operations During Automatic Load Shed Event (UFLS)

When system frequency drops below the UFLS setpoint, the FLISR Sys Frequency alarm locks in the alarm state, which disables FLISR.

1. **RelCoor: VERIFY** that FLISR is disabled.
2. **RelCoor: WHEN** Load Shed Event concludes and system returns to stable state, as determined by the Shift Supervisor,
   RESET FLISR Sys Frequency point in EMS, allowing FLISR to return to the enabled state.
3. **Shift Supervisor: WHEN** system returns to stable state,
   DIRECT RelCoor to coordinate with DCCs.
4. **RelCoor: COMPLETE** the following steps:
   - 4.A. **COORDINATE** with DCCs to ensure FLISR can be enabled.
   - 4.B. **RESET** FLISR.
     - 4.B.1 On the EMS Energy System Summary display, **CLICK FLISR Sys Freq point**.
     - 4.B.2 **CLICK Reset** on pop-up window.
     - 4.B.3 **VERIFY** that FLISR Sys Freq point returns to normal.
     - 4.B.4 **VERIFY** that FLISR is enabled.
   - 4.C. **DIRECT** DCC to restore any UFLS loads that have not automatically restored.

40. Revision and Availability

TOS Compliance and Procedures (C&P) Team completes the steps in this section.

Revision

1. **PERFORM** an annual review of this procedure and applicable attachments.

Availability

1. **WHEN** completing the annual review, **OR WHEN** completing a revision to the GMD content in the main procedure,
   THEN COMPLETE the following steps on release day:

1.A. **UPLOAD** PDF copy of the procedure to each control area within PJM PERCS, per ***SCC-CP-023 Procedural Document Tasks***, *Additional Document Tasks* section.

[redacted]

Acronyms

Acronym	Full Title
ATSI	American Transmission Systems Inc.
BES	Bulk Electric System
BLS	Block Load Shed
CEI	Cleveland Electric Illuminating
DCC	Distribution Control Center
DP	Distribution Provider
EHV	Extra High Voltage
ELMR	Emergency Load Management Reduction
FE	FirstEnergy
FLISR	Fault Location Isolation and Service Restoration
GIC	Geomagnetically-Induced Current
GM	General Manager
GMD	Geo-Magnetic Disturbances
IROL	Interconnection Reliability Operating Limits
ISO	Independent System Operator
LCC	Local Control Center
LDC	Local Distribution Company
NERC	North American Electric Reliability Corporation
OE	Ohio Edison
PCLLRW	Post Contingency Local Load Relief Warning
RCIS	Reliability Coordinator Information System
RelCoor	Reliability Coordinator
RLS	Rotating Load Shed
RTO	Regional Transmission Organization
SCC	System Control Center
TE	Toledo Edison
TEEC	Transmission Emergency Event Communication

Acronym	Full Title
TLL	Transmission Line Loadability
TLR	Transmission Loading Relief
TO	Transmission Owner
TOS	Transmission Operations Services
TSO	Transmission System Operator
UFLS	Under Frequency Load Shed

Compliance Information

Standard/Requirement	Procedure Section(s)	PJM TO/TOP Matrix	NERC/RF 693
EOP-010 R1.2	Geo-Magnetic Disturbances (GMD) Operating Plan Revision History	X	
EOP-010 R3.2	Geo-Magnetic Disturbances (GMD) Operating Plan	X	
EOP-010 R3.3	Section 33: Geo-Magnetic Disturbances (GMD) Operating Plan	X	
EOP-011 R1	Entire Procedure	X	
EOP-011 R1.1	Applicability Section	X	
EOP-011 R1.2.2	Introduction and Policy Statement Section	X	
EOP-011 R1.2.3	Applicability Section	X	
IRO-001 R2	Introduction and Policy Statement	X	X
IRO-001 R3	Introduction and Policy Statement	X	X
TOP-001 R1	Introduction and Policy Statement	X	
TOP-001 R3	Introduction and Policy Statement		X
TOP-001 R4	Introduction and Policy Statement		X
TOP-001 R5	Introduction and Policy Statement	X	X
TOP-001 R6	Introduction and Policy Statement	X	X
TOP-001 R8	Introduction and Policy Statement	X	
TOP-001 R12	Introduction and Policy Statement	X	

Related Documents

Title
SCC-EOP-001A Att. A: PJM Manual 13 Section 4 Sabotage/Terrorism Emergencies

Title
SCC-EOP-001B Att. B: FE East Voltage Reduction
SCC-EOP-001C Att. C: NERC EEAs and Related PJM Responses
SCC-EOP-002 Conservative Operations
SCC-EOP-003 Load Dump Actions
SCC-EOP-004 Emergency Incident and Disturbance Reporting and Response
SCC-DG-006 PCLLRW Tool
SCC-DG-008 RCIS
SCC-NOP-001A Att. A Limit Reference
SCC-NOP-001H Att. H Subtransmission Limit Reference
FLISR Overview Training Module
PJM Manual 3 Transmission Operations
PJM Manual 10 Pre-Scheduling Operations
PJM Manual 13 Emergency Operations
Corporate Security Policy 4.0 Security Incident Reporting & Investigation (FE Portal > Workspaces > Work Center > Security > Corporate Security)
Transmission Emergency Event Communication (TEEC) Plan

Revision History

Rev.	Effective Date	Preparer	Comments
31	10/01/2025	J. Giordano	Off-Cycle Revision SMEs: N. Mostyn (FEE), A. Beougher (FEW), J. Satterfield (FES) Section 12, Curtailment of Customer (FEW): Removed section, per K. Weidrick (FEW Manager) and TOS Mgmt. Section 16, Minimum Generation Advisory: Added new section. Section 37, RCIS Notifications: Updated Step 1B to clarify email received from PJM. Section 40: Added new section for existing C&P process. Applicable sections: Replaced “UNCHECK Carry Over flag” with “AND COMPLETE existing iTOA log.” (Sections 2, 17, 18, 19, 20, 21, 25, 26, 29, 31)
30	06/11/2025	J. Giordano	Off-Cycle Revision Section 17: Updated to indicate that PJM sends RCIS notifications to FE via email. Section 18: Updated to indicate that PJM sends RCIS notifications to FE via email. Section 37: Updated to reflect that FE can no longer access RCIS website and will receive RCIS emails from PJM via new email distribution group.
29	03/12/2025	O. Khan	Annual review of procedure and attachments SME’s: N. Mostyn (FEE), A. Beougher (FEW), J. Satterfield (FES) Section 1: Added Step 2 for instructions regarding additional PJM notifications Section 2: Updated Step 2 for instructions regarding additional PJM notifications. Added Step 3 with instructions regarding Maximum Generation Emergency/Load Management alert expiration Section 3: Updated the structure of instructions in Primary Reserve Alert Section 5: Added Step 1 ”Verify via PJM Emergency Procedure posting website” Section 6: Added Step1 ”Verify via PJM Emergency Procedure posting website” Section 10: Added Step 1F, instructions regarding FE East and FE South only Section 12: Updated Curtailment of Customer (FE West only) table with the latest information received from Rates and Regulatory Affairs. Updated Contact information in Step 4 Section 15: Updated sections for FE East and FE South only and FE EAST only for cancellation of Voltage Reduction Action Section 17: Updated Step 2 for UNCHECK Carry Over Flag verbiage Section 18: Updated Step 2 for UNCHECK Carry Over Flag verbiage Section 19: Updated Step 2 for UNCHECK Carry Over Flag verbiage Section 20: Updated Step 2 for UNCHECK Carry Over Flag verbiage Section 25: Modified Step 2 and added Step 3 for Cold Weather Advisory. Removed Step 2 and added Steps 3-4 for Cold Weather Alert. Section 26: Updated Step 2 for handling Hot Weather Alert. Added Steps 3 and 4 for Hot Weather Alerts. Section 29: Updated Steps 9 and 10 for FE South Only under the GMD Action Section 31: Modified Step 2 for handling Additional PJM notification/All-Call or early cancellation of a Low Voltage Alert and added Step 3 for Low Voltage Alert expiration. Section 34: Updated Step 4 with verbiage regarding SCC-NOP-001A and SCC-NOP-001H Section 35: Added Step 3 regarding SCC-EOP-003 Updated Compliance Information Table with EOP-011 R1, R1.1, R1.2.2 and R1.2.3 SCC-NOP-001A and SCC-NOP-001H. Added procedure hyperlinks Att. A: Obtained current excerpt from PJM M-13 Att. B and C: No changes

Rev.	Effective Date	Preparer	Comments
28	08/07/2024	K. Nino	Off-Cycle Review Applicability: Wording added to section to align with NERC Standard. Introduction and Policy Statement: Bullet point added to clarify SCC TSO Responsibilities.
27	07/24/2024	J. Giordano	Off-Cycle Review SMEs: P. Williams (FES), A. Forsch (FEW) Section 29: Rewrote section and split into subsections to align with PJM M-13 and current process for GMD Warnings and GMD Actions. Approvals: Updated to reflect changes in FEE and FEW Managers.
26	05/16/2024	J. Giordano	Errata change: Updated cross-references to SCC-EOP-001ConsOps (now SCC-EOP-002) and SCC-EOP-001LD (now SCC-EOP-003), including titles.
26	03/07/2024	J. Giordano	Annual Review of procedure and attachments SMEs: N. Mostyn (FEE), J. Satterfield (FES), K. Kelly (FEW) Section 2: Removed “Transmission Security” from section heading. Replaced intro paragraph with “capacity shortage” intro paragraph from PJM M-13. Section 33: Clarified as “Action” throughout section to align with PJM M-13. Section 34: Removed 2nd sentence from 3rd paragraph per SMEs; the information is intended for PJM Operator rather than FE TSOs. Section 34: Removed step 2B per SMEs; it duplicates step 2I, which reflects the actual process. Throughout procedure: Clarified coverage of PJM-initiated alerts, warnings, and actions (entire RTO, specific control zones, subset of control zones). Att. A: Obtained current excerpt from PJM M-13. Att. B, Section 1: Step 3, removed LTCs that have been disabled, per FE East Manager[redacted] Att. C: No changes. Throughout documents: Updated style and formatting to align with current template and style guide.
25	01/11/2024	K. Nino	Off-Cycle Review Section 30: Removed reference to SCC-NOP-100 and disabling all substation digital relay access from Step 1. Related documents: Removed SCC-NOP-100.

Rev.	Effective Date	Preparer	Comments
24	03/09/2023	J. Giordano	Annual Review SMEs: J.Townsley (FEE), T.Martin (FES), J.Syvanych (FEW) Purpose: Added required section. Scope: Added optional section. Applicability: Added required section. Introduction & Policy Statement: Streamlined and simplified content. PJM and Member TO Actions: – PJM Actions: Moved portion of 2nd paragraph to Purpose. – Member TO Actions: Deleted portion of 3rd paragraph; stated in Purpose. Section 12: Verified customer information with Rates and Regulatory Affairs. Moved NOTE to appear above table. Section 13: Moved step 1A1 to STEP 1A NOTE. Section 15: Moved 5% NOTE to SECTION NOTE. Removed NOTE above step 2; stated earlier in section. Section 25: Moved NOTE to section intro. Section 26: Moved NOTE to section intro. Section 27: Moved NOTE to SECTION NOTE. Section 29: Moved NOTE to intro section. Removed NOTE below step 1; information not necessary. Moved portion of step 2 to STEP 2A NOTE. Moved NOTES within step 3 to align with applicable substeps. Section 30: Moved Corporate Security contact info to table. Moved step 3 content to section intro. Section 34: Changed intro section to reference “Manual Load Dump Action… which may result in…” to align with SCC-EOP-001LD and to allow for flexibility. Section 36: Moved NOTE to SECTION NOTE. Section 37: Moved NOTE to SECTION NOTE. Section 39: Added new section for FLISR Operations content. Acronyms: Added optional section. Compliance Information: Added required section. Att.A: Obtained current excerpt from PJM M-13. Att.B: – Section 1: Removed 2nd bullet point from intro statement. Moved portion of step 2 to STEP 2 NOTE. Moved NOTE from below step 4 to STEP 3 NOTE. – Section 2: Moved table note to SECTION NOTE. Att.C: No content changes. Throughout documents: Updated style and formatting to align with 2022 C&P template and style guide.
23	10/13/2022	J. Giordano	Periodic Review Section 4: Updated section title to include Advisories. Added new Section 4.1 to address Advisories, in alignment with PJM M-13. Section 29: Updated section title and content to address Cold Weather Advisory, in alignment with PJM M-13.

Rev.	Effective Date	Preparer	Comments
22	03/10/2022	J. Johnson	Annual Review. Date review started: 01/21/2022. SMEs: M. Robison (FEE), N. Biggs (FES), M. Backer (FEW) Section 1: Compared most recent PJM M-13 revisions to this procedure and determined there is no impact to this procedure. Section 33.4: Per FE South personnel, inserted language to address the [redacted] Throughout documents: Updated formatting to align with current process, style guide, and formatting.
21	03/04/2021	J. Giordano	Annual Review SMEs: M. Robison (FEE), M. Mollohan (FES), M. Backer (FEW) Introduction: Updated to align with PJM definitions; completed minor corrections. Section 1.2.2: Clarified second sub-section; added cross-reference to SCC-NOP-202. Section 15: Added "action" to end of section introduction. Section 16: Clarified that curtailment of customers is not specific to PJM actions. Completed table verification and updated with Rates and Regulations Dept. Sections 17.1.1 and 17.2: Added steps to contact Jennifer Young (External Comms) for initial notification and for cancelation. Sections 19.1.2 and 19.2: Added timeframe to 19.1.2, and removed 19.2 (not TSO tasks). Section 25.1: Updated TSO actions to align with current process. Section 38: Added 2nd item to NOTE to align with PJM M-13. Section 38.1.3: Updated 2nd bullet and removed 3rd bullet. Section 38.2: Clarified TSO steps based on who created PCLLRW. Section 42: Removed content duplicated from PJM M-10 and updated cross-reference to M-10. Att. A: Obtained current excerpt from PJM M-13. Att. B: Updated Met-Ed and PN substations. Att. C: No content changes. Confirmed through NERC Active Registry that AMP is a TO. Referencing the "American Transmission Systems Inc. – Filing of Revised Service Agreement" dated 12/12/2018, it appears that FE West does not have external DPs (Cuyahoga Falls, Hudson, Niles, Wadsworth), but rather they are owned by AMP as the TO. Throughout documents: Updated to align with current process, style guide, and formatting.

Rev.	Effective Date	Preparer	Comments
20	0303/2020	J. Giordano	SMEs: M.Robison (FEE), M.Mollohan (FES), M.Backer (FEW) Annual Review Sec 16: Updated table data per Rates & Regulatory Affairs review. Sec 19.2 and 19.2.1: Reordered steps 19.1-19.3 to align with process. Clarified timeframe for voltage reduction. Sec 25.1.4: Added shunt reactors bullet to align with PJM M-13. Sec 27: Updated content to align with PJM M-13. Sec 33: Removed information related to [redacted] substation; no longer needed. Sec 34.3: Updated to provide full form title and URL. Sec 38.1.3: Clarified "valid switching." Sec 39.2.3: Added DCC notification step. Sec 41: Updated RCIS Monitoring content. Removed cross-reference to SCC-EOP-001ConsOps. Sec 43: Removed; content not needed. Sec 44: Removed; content not needed. Related Documents: Added SCC-EOP-001B and SCC-EOP-001C. Reordered list and updated procedure numbers. Att. B: Reordered steps to align with process. Added sub-bullet for Lyons banks. Added Note for step 1.7. Att. C: Added to provide relevant NERC EEA and PJM content. Throughout procedure and attachments: Reorganized sections to align with PJM M-13. Applied consistent formatting and language to align with C&P style guide. Verified and updated procedure titles and numbers.
19	03/11/19	A. Graybill	Annual Review Introduction and Policy Statement: Updated PJM Operating Instructions sections. Sections 4, 12, 17, 33: Note added to reference SCC-EOP-001ConsOps. Section 5: Moved to SCC-EOP-001ConsOps procedure. Section 7.1.1: Example added for load relief. Section 7.1.1 Table: Firm Service Level header updated to clarify this is the load level the customer agreed to reduce operations down to, [redacted] was removed from list of customers, and remaining customers verified. Section 15.1.8: Updated generators to units, to AVR ON, and added 1000 MVAR reserve. Section 29: Added PJM Manual 3 Section 3 reference and updated IROL to Reactive Transfer Interface and Constraint Management. Moved refer to SCC-DG-006 to note section. Section 29.1.1: Added FE issued PCLLRW. Section 29.1.3: Added new step to review limiting factors. Section 29.1.5: Added new step to review work that could impact contingency element. Section 34.3: Added Handling Bomb Threats SharePoint tool. Section 35.2: Added manually disabling reclose during storm events to align with PJM Manual 13. Section 35.3: Changed Transmission Owner to TSO. Section 43: Example #4 updated to all operating companies. Related Documents: Added SCC-EOP-001ConsOps. Throughout procedure: Updated grammatical errors and completed minor formatting. Attachment A: No changes. Attachment B: Updated [redacted]

Rev.	Effective Date	Preparer	Comments
18	06/01/18	A. Graybill	Annual Review Introduction and Policy Statement: Updated section to align with PJM Operating Instruction and removed PJM Directive. Section 4.3: Removed Cold Weather Alert advisories to align with PJM Manual 13. Section 5: Updated to include environmental, physical or cyber security events as reasons for conservative operations. Section 6: Removed note; it is duplicated in section. Section 7: Updated ATSI Curtailment information. Removed PJM Demand Response and added curtailable load cap amounts. Section 7.1.3: Updated naming of Transmission Emergency Event Communication Plan. Section 7.1.4: Removed Reading PA as location for Regulated Dispatch. Section 12.1: Reworded for clarity. Section 15.1.8: Combined section 15.1.8 and 15.1.9 to a new 15.1.8 that reflects Cleveland Area reserve requirements. Section 17.3.3: Removed Hot Weather Alert advisories to align with PJM Manual 13. Section 19: Added Manual Load Dump Warning/Action to section heading. Section 19.1: Updated names of IROL to include transfer. Sections 22 and 23: Updated to new SCC-EOP-001LD and retirement of FE East, South, and West procedures. Section 24: Added for Transmission Security to section heading and updated description to align with PJM Manual 13. Section 29: Added statement for non-market facilities and clarified section to reference market PJM initiated PCLLRWs. Section 34.1.5: Updated internal and external FE Service desk phone numbers. Section 34.1.6: Added reference to SCC-EOP-088. Section 34.1.8: Added path for FE Portal. Sections 34.4 and 34.5: Removed duplicate information and combined sections with section 34.3. Section 36: Relocated note. Section 38: Aligned with PJM Manual 13. Section 39: Updated appendix to section 42. Section 40: Aligned to PJM Manual 13 and removed Appendix B reference and replaced with see SCC-EOP-001B. Section 41: Updated to align with PJM Manual 13. Attachments A and B: Verified during annual review. Related Documents: Updated to reflect current procedure references. Throughout procedure: Updated language to align with current PJM manual versions, updated to SCC-EOP-088, and updated operating company names.
17	06/26/17	G. Mali	Annual Review: Section 7: Reviewed and revised based on revised curtailment procedure. Section: 12.2.3: Updated to align with current practice. Section 40.1.3: Updated from Appendix to Attachment B.
16	04/04/17	A. Graybill	Annual Review of procedure and attachments. Section 34: Updated to provide further instruction for Physical Sabotage of Substations. Appendix A & B: Transformed into new Attachment B. Appendix D, E and F: Transformed into sections 42, 43 and 44. Throughout procedure: Updated PJM Manual references.

Rev.	Effective Date	Preparer	Comments
15	11/08/16	G. Mali	Annual Review of procedure and attachment. Introduction and Policy Section: Added PJM definitions for PJM Directives and PJM Instructions. Section 1.2.2: Reformatted for clarification of steps. Section 4.3.3: Removed “FE East Only”. Section 6: Split into two sections. Section 7.3.1: Curtailment table updated. Section 8: New section added “Deploy All Resources Action” to align with PJM M13 revision, and re-numbered subsequent sections. Section 12.1.2: Updated for clarification. Section 13: Added first bullet. Sections 15.1.3 and 15.2.3: Removed, Generators are notified via PJM. Sections 15.1.9 and 15.1.10: Replaced “reasonable” for clarification. Section17.3.3: Removed “FE East and FE South Only”. Section 25: Added “Action” to align with PJM M13 revision. Section 29: Re-arranged steps for clarification. Section 29.1.6: 1st bullet, added Voltage level. Section 29.1.6: Added 3rd bullet. Section 33: New section added for RCIS monitoring. Section 34.1.4: New section added for procedure reference. Related Documents Section: Updated with procedures SCC-NOP-100 and SCC-DG-008. Annual Review Section: Removed and merged with Revision History table to align with current practice. Throughout procedure: Updated from RFC to RF, Regional Dispatcher to Distribution Dispatcher
14	02/08/16	G. Mali	A revision of PJM M13 required rewording changes in the following Sections for alignment: Section 10: Changed title of GMD section and removed reference to conservative operations Sections 22, 23, 35, 38 and TOC: Renamed from Maximum Emergency Generation to Maximum Generation Emergency Section 37: Change title of section from Voltage Reduction to Voltage Reduction Action
13	12/22/15	G. Mali	Annual Review; Attachment A updated with current PJM M-13. Introduction and Policy Statement Section: Added definition for RTO and BES. Section 1: Added definition for TO Section 1.2.4: Replaced “attempt to” with “automatically” Section 1.2.3 and 1.2.4 second bullets: Added “if the system did not automatically create it” Section 2.3: Replaced “or” with “and” Section 4.3: Updated to align with PJM notification template Section 6: Updated for FE West curtailment only
12	08/31/15	G. Mali	Section 17.1 expanded IROL statement. Per PJM M-13 update: added bullet to section 27.2.1 to reference the PJM PCLLRW tool and removed “Mandatory” throughout section 7 and section 28. Removed step 34.1.2 there are no DCC actions.
11	03/31/15	G. Mali	Section 10: updated to the new GMD assigned task requirements from PJM TOP/TO Matrix for NERC EOP-010. Throughout procedure: updated from Regional Dispatch Office (RDO) to Distribution Control Center DCC. Updated formatting.

Rev.	Effective Date	Preparer	Comments
10	12/12/14	G. Mali	Annual Review. Updated attachment A due to PJM Manual 13 revision. Added section 10.7 for the cancellation of a GMD.
9	08/01/2014	G Mali	Added section 2.3. Updated sections: 3,4, 5, 7, 10, 12, 13, 15, 22, 25, 26, 29, 31, 33, 34, 35, Appendix D to align with current PJM Manual 13 revision Added section 28 to align with current PJM Manual 13 revision. Section 17: Removed [redacted] from the IROL list to align with current PJM Manual 13 and PJM Manual 37 revision. Section 7: removed note for Demand Response Programs Group and PJM Data Mart Group. Section 11: Removed first paragraph. Section 14.1.4: removed the two bullets and clarified original statement. Section 27.2.3 clarified original statement. Section 35.1.7 updated to include FE South. Removed original section 31 "Scarcity Conditions Procedure" (to align with PJM M13), Section 34 "Transmission Security Emergency Procedure" (information is available in section 3). Throughout procedure added to ensure SVCs are in service and removed FE West only.
8	03/11/14	G. Mali	Updated Section 4 to reference PJM Manual and reflect changes for OE-417 submittal and included together with section 30 (Sabotage…). Section 14.1.3: Removed [redacted]. Section 27 updates per PJM M13 requirements. Section 27.2.5. Updated to clarify PCLLRW logging and notification requirements. Added section 27.3. Throughout procedure removed references to specific section numbers leaving references to section titles. Throughout procedure: Replaced specifying TSO vs RelCoor positions with TSO/RelCoor.
7	01/15/14	G. Mali	Procedure revised due to name change from FCC/RCC/WCC to FE South/East/West
6	11/14/13	S. Wittenauer	Annual Review. Started 10/9/13. Completed 11/13/13. Reviewed for alignment with PJM Manual 13 Rev 54 Entire Procedure: added FCC to RelCoor actions and added logging requirements to each section Section 6 – added PJM enters an unknown operating state as a potential reason to enter conservative operations Section 7 - Deleted entire section "Constraint Management for BES2 Facilities (RCC Only)" and renumbered procedure sections from Section 7 to the end Section 11.5 – added report GMD-related actions taken to PJM Sections 13.1.6., 14.1.8, 15.1.6. 20.1.4., 37.1.6., 28.1.5., 39.1.6., added verify synchronous condenser(s) are in service. Section 14.1.7 – added or nominal voltage, whichever is greater Section 15.1.5. – added 230kV and above Section 18.1 – added ComEd to list of IROLs Section 20.1.7 – added sentence to report deviations to PJM. Appendix A: [redacted] voltage reduction procedure and deleted paragraph about logging voltages as replaced by EMS [redacted] Voltage Reduction display.
5	04/11/12	L Hughes	Revised header logo Updated document references Introduction and Policy Statement – updated paragraph 4 to better align with PJM requirements Section 6.1 – Updated to better align with PJM requirements 32.1 – Updated language for clarity Section 40.1.2 – Added FCC to be included
4	12/20/12	T Oborn	FCC effective date changed from 01/08/13 Section 12.5.3 – Corrected section references

Rev.	Effective Date	Preparer	Comments
3	11/13/2012	G Mali T Oborn	Annual Review Entire Document – Reviewed for use at FCC; added appropriate references to FCC and FCC procedures; Corrections to grammar, punctuation, and spelling. Section 2 – Added staffing guidelines Section 12 – Added FCC specific steps for GMD Section 15 – Removed [redacted] Section 16 – Added references to procedures for SVC operation Updated section 29.2.1 and 29.2.6, Added section 29.2.2 and bullet under section 29.2.6. Section 32 – Rewritten to coordinate with Corporate Security; PJM table of alert descriptions moved to Attachment A Related Documents Section – Added SCC-EOP-001A, SCC-NOP-088, and Corporate Security Police 4.0
2	06/25/2012	G Mali	Annual Review: Added Section for Unit Startup Notification Alert per PJM Manual 13 Update. Transferred sections 20&21 to RCC-EOP-001LD / WCC-EOP-001LD. Corrected language in Appendix A. Updated Related Documents section, formatting and approval section per SCC-AP-001
1	01/23/2012	T. Oborn G. Mali	Section 5 – Added fuel delivery bullet Section 6 – Deleted steps that repeated step 6.2.14 and 6.2.15 Section 13 – Identified RCC only steps. Section 15 – Deleted Steps 15.1.3 and 15.1.4; Section 38 – Moved Step 38.1.4 to end of actions for Section 38.1. Related Documents – Added PJM Manuals 3 & 10 and WCC-EOP-001LD. Applied current procedure formatting, including TOC. Corrected and Completed various titles of referenced documents Added Table names to all tables. Appendix C – Deleted. Appendices E&F – added example number references. Corrected spelling and grammar in various locations Per PJM M13 revision: Clarified Section 29, 32 including changing SMD to GMD; section 30 removed references to color schemes. Whole document – Removed references to notification by “Lotus Notes”
0	1/27/11	Jim Eckels / David Kibler	Create a SCC version of RCC-EOP-001. Updated for PJM Integration. Consolidates WCC-AP-006, WCC-EOP-107 (partial), WCC-EOP-108 WCC-EOP-141, WCC-EOP-171 (partial), WCC-NOP-010 RCC-EOP-01

Approvals

This document was reviewed and approved electronically. Records are available upon request through the Transmission Operations Support Compliance & Procedures group.

Name	Title	Date
J. Kinney	FE East Manager, Transmission Operations	09-30-2025
K. Berger	FE South Manager, Transmission Operations	09-29-2025
K. Weidrick	FE West Manager, Transmission Operations	09-29-2025
J. Trout	Manager, Transmission Operations Support	09-29-2025

TABLE OF CONTENTS

Purpose

This document describes the warnings and actions issued by PJM regarding the need to shed load to ensure the stability of the Bulk Electric System (BES). It also outlines the expectations of PJM regarding the associated corrective actions taken by FirstEnergy (FE) Transmission System Operators (TSOs). Refer to ***PJM Manual 13 Emergency Operations (PJM M-13)*** for additional information regarding PJM requirements.

Each of the operating companies performs a review of the load shed plan to ensure that the needs of critical loads essential to the health, safety, and welfare of the community are addressed.

The TSO notifies the Distribution Control Center (DCC) of a load-shed event, and the TSO directs the DCC to shed load if needed based on the current situation.

Scope

This document serves as a supplement to procedure ***SCC-EOP-001 Emergency Operations.***

Applicability

All steps to be completed by Reliability Coordinator (RelCoor) unless specifically noted otherwise. TSO completes steps when RelCoor is unable to do so.

General Requirements of Manual Load Dump Warnings and Actions

SECTION NOTE

The values for Manual Load Dump provided in this document are for reference only. These values may change based on PJM requirements and system loads.

Transmission Operations Services (TOS) is responsible for performing Manual Load Dump per PJM operating instructions.

TSO is responsible for completing the actions for a Post-Contingency Local Load Relief Warning (PCLLRW).

Loadshed and PCLLRW Coordination with DCCs

TSO either directs the DCC to shed load or uses the Loadshed Application during the Load Shed operating instruction from PJM or for a PCLLRW. TSO removes additional circuits if needed to meet PJM requirements.

- **REFER** to the *Post Contingency Local Load Relief Warning (PCLLRW) Manual Load Dump* section of this procedure for more information.

Manual Load Dump Action and Warning

PJM issues an Interconnection Reliability Operating Limits (IROL) Manual Load Dump Warning when the IROL limit is exceeded for five (5) minutes or more. If the violation still exists after 25 minutes, then PJM issues a Manual Load Dump Action.

- For Manual Load Dump Warning, the approximate time to implement actions is 15 minutes.
- For Manual Load Dump Action, PJM requires the Transmission Owner (TO) to initiate load shed within five (5) minutes of receiving the PJM instruction.

1. Manual Load Dump Warning

SECTION NOTE

This section can be used for system wide or IROL manual load dump.

The Manual Load Dump Warning alerts PJM members to the increasingly critical condition of present operations that may require manually dumping load and allows the TSO time to prepare for a Manual Load Dump Action if needed. PJM issues the warning when available primary reserve capacity is less than the largest operating generator, or when the loss of a transmission facility jeopardizes reliable operations after implementing all other possible measures to correct the problem.

When issuing a Manual Load Dump Warning, PJM provides the amount of load and location of the requested manual load dump.

1. Upon receiving Manual Load Dump Warning from PJM, **CREATE** Integrated Tools for Transmission Application (iTOA) log entry using applicable canned phrase,
   AND ISSUE System Control Center (SCC) notifications.
2. **NOTIFY** DCCs,
   AND LOG calls.
3. **PREPARE** a manual load dump in the requested amount for the requested area(s) (i.e., system wide or IROL).

STEP 3.A. NOTE

The Manual Load Dump Allocation Table calculates for both system wide and IROL manual load dump.

3.A. **PERFORM** one of the following actions on the Manual Load Dump Allocation Table from the Energy Management System (EMS) Custom Displays drop-down.

- **IF** System Wide,
  THEN ENTER the amount of manual load dump in the **PJM REQUIRED LOAD DUMP MW** field.
- **FE East and FE West only: IF** IROL,
  THEN ENTER the amount of manual load dump in the **PJM REQUIRED LOAD DUMP MW** field for the applicable IROL.

3.B. **OPEN** the following Rotating Load Shed (RLS) displays:

RLS display	Steps to open
RLS Overview	3.B.1. **EITHER SELECT** SCADA Applications > Rotating Loadshed; **OR CLICK** the **RLS Overview** button on the Manual Load Dump Allocations display.
Rotating Load Shed Control	3.B.2. **EITHER SELECT** Related Displays > Rotating Load Shed Area Control, **OPEN** Go to Area, **AND SELECT** the Area Name; **OR CLICK** the **Area Name** button on the Rotating Loadshed Overview display.
RLS Circuits List	3.B.3. **EITHER SELECT** Related Displays > Rotating Load Shed Circuits > Circuits List (page down for each area), **OR CLICK** the **Area Name** button on the Rotating Load Shed Control display > Activity page.
RLS Message Log	3.B.4. **SELECT** Related Displays > Rotating Load Shed Application Log.

3.C. **COMPLETE** the following steps on the RLS Circuits List display (page down for each area).

STEP 3.C.1. NOTES

If a circuit is disabled, then *Enable All Circuits* appears.

If RLS is armed, then the **Enable All Circuits** button does not appear; RLS must be disarmed (per Step 3.C.1.) in order for the **Enable All Circuits** button to appear.

Clicking **Enable All Devices** selects each circuit.

The **Available Load** field updates for each device on RLS Circuits List display, as well as the **Total Available Load** on all RLS displays.

Alarms display on the **System Activity Log** and the **Rotating Load Shed Message Log** shows *ALL RLS CIRCUITS ENABLED AT AREA (Operating Company)*.

3.C.1. **VERIFY** that Rotating Load Shed Control is in *DISARM* status.

- **IF** in *ARMED* status,
  THEN UPDATE settings to *DISARM*.
  - **CLICK DISARM**.
  - **REVIEW** the confirmation box.
  - **CLICK Yes**.

3.C.2. **VERIFY** that *DISABLE ALL CIRCUITS* appears for each area, indicating that all circuits are enabled.

- **IF** *Enable All Circuits* appears,
  THEN CLICK Enable All Circuits,
  REVIEW the confirmation box,
  AND CLICK Execute.

3.C.3. **IF** needed**,**
THEN DESELECT Station checkbox to remove circuits (critical load, etc.).

3.C.4. **REPEAT** *Step 3.C.* for each area requiring manual load dump.

3.D. **COMPLETE** the following steps on the Rotating Load Shed Control display, paging down for each area.

3.D.1. **VERIFY** that Rotating Load Shed Control is in *LOCAL MODE* status, using the **View Change Mode** button.

- **IF** in *SYSTEM MODE*,
  THEN UPDATE settings to *LOCAL MODE*.
  - **CLICK CHANGE MODE**.
  - **REVIEW** the confirmation box.
  - **CLICK Execute**.

STEP 3.D.3. NOTES

Rotation Period may be less than 30 minutes at the direction of the Shift Supervisor.

If Shed Target is ≤ [redacted] then Transition Block Size can be equal to Shed Target.

If Shed Target is > [redacted] then use an amount that can be divided into the Shed Target amount making each block size approximately the same. **DO NOT EXCEED** [redacted]

EXAMPLE: If [redacted] is Shed Target, then Transition Block Size can be [redacted] resulting in two (2) cycles to rotate the load.

Starting Sequence Number corresponds to the first device to be shed in the Shed Device List display. Devices are prioritized based on lowest priority non-critical circuits. Starting Sequence Number can be set to a different number for situations such as repeated days of load shed to eliminate the same customers being impacted over multiple days.

3.D.2. **ENTER** the Load Shed Parameters for each Area on the **Settings** tab.

- **Shed Target: ENTER** total MW amount to shed.
- **Rotation Period: ENTER** 30 minutes for load dump to rotate.
- **Transition block size: ENTER** ≤ [redacted] MW for the amount of load to rotate during rotation period.
- **Starting seq. #: SET** to 1
- **Minimum Restore Time:** 0
- **Subset Circuit Buffer:** 20%
- **Use All Circuits in Entire Area: SELECT** checkbox.

3.D.3. **REPEAT** *Step 3.D.* for each area requiring manual load dump.

2. Manual Load Dump Action

SECTION NOTE

Reporting requirements apply if the actual MW load that is shed is ≥[redacted] MW. REFER to ***SCC-EOP-004 Emergency Incident and Disturbance Reporting and Response*** for more information.

When issuing a Manual Load Dump Action, PJM provides the amount of load and location of the requested Manual Load Dump Action.

The Manual Load Dump Action serves to dump load to protect the reliability of the Interconnection by maintaining tie schedules, or to prevent a catastrophic failure of the transmission system.

1. **COMPLETE** a Manual Load Dump Action when:
   - PJM cannot provide adequate capacity for the load within the Regional Transmission Organization (RTO) footprint.
   - Critically overloaded transmission lines or equipment cannot be relieved through any other means.
   - Low frequency operation occurs in all or part of the PJM footprint, or in the PJM footprint and adjacent Control Areas that have separated into islands.
   - Relief is needed for an IROL overload.
2. **IF** PJM issues a Manual Load Shed Action without first issuing a Manual Load Shed Warning**,**
   THEN COMPLETE Manual Load Dump Warning steps in the *Manual Load Dump Warning* section of this procedure.
   2.A. **COMPLETE** logs and SCC notifications **after** completing the load dump steps for the Manual Load Dump Warning.
3. **IF** time permits,
   THEN NOTIFY DCCs prior to load dump or immediately following,
   AND LOG calls.
4. **IF** time permits prior to load dump,
   THEN CREATE iTOA log entry using applicable canned phrase,
   AND ISSUE SCC notifications;
   OTHERWISE COMPLETE steps immediately following load dump.
5. **COMPLETE** the following steps on the Rotating Load Shed Control display to arm RLS for all areas.
   5.A. **CLICK ARM**.
   5.B. **REVIEW** the confirmation box,
   AND CLICK Yes.
6. **ACTIVATE** RLS in the requested amount for the requested area(s) (i.e. system wide or IROL).

STEP 6.A. NOTES

RLS proceeds automatically based on the parameters entered.

Updated Actual Shed Load, Actual Shed Target, Total Rotating Load in Subset, Total Shed Load, and Total Load in the Area populate at the top of the Rotating Load Shed Control display.

6.A. **COMPLETE** the following steps on the Rotating Load Shed Area Control display.
   6.A.1. **CLICK Activate** on the left of the display to open the Activating Rotating Load Shed display.
   6.A.2. **VERIFY** that CONTROL AREA, SHED TARGET, and TOTAL ROTATING LOAD IN SUBSET are adequate to cover the Shed Target.
   6.A.3. **CLICK Execute**.
   6.A.4. **REPEAT** *Step 6.A.* for each area requiring manual load dump.

7. **NOTIFY** TOS Management, PJM, and DCCs of the completion of Manual Load Dump Action.
   - 7.A. **INDICATE** the total amount of load shed **AND** the amount of load shed for each area.
   - 7.B. **LOG** calls.
8. **CONTINUE** Rotating Manual Load Dump in the amount requested by PJM until PJM cancels the Manual Load Dump Action.
   - 8.A. **NOTIFY** DCCs,
     AND LOG calls.
   - 8.B. **COMPLETE** SCC notifications.

3. Changing Manual Load Dump Parameters

SECTION NOTE

Rotating Load Shed can be reinitialized immediately (using the **Reinitialize Now** button) or at the beginning of the next rotation (using the **Reinitialize Next Rotation** button).

Reinitializing Load Shed is required when any parameters are changed on the Rotating Load Shed Control display.

Upon receipt of information from PJM to shed additional load and/or change the location of load to be shed, **PERFORM** the steps outlined in this section.

1. **IF** time permits,
   THEN LOG AND ISSUE SCC notifications prior to load dump or immediately following.
2. **PREPARE** a manual load dump for the updated requested amount for the requested area(s) (i.e. system wide or IROL).

STEP 2.A. NOTE

The Manual Load Dump Allocation Table calculates for both system wide and IROL manual load dump.

2.A. On the Manual Load Dump Allocation Table from the EMS Custom Displays dropdown:

2.A.1. **IF** System Wide,
THEN CHANGE the amount of manual load dump in the **PJM REQUIRED LOAD DUMP MW** field.

2.A.2. **FE East/FE West only: IF** IROL,
THEN CHANGE the amount of manual load dump in the **PJM REQUIRED LOAD DUMP MW** field for the applicable IROL.

STEP 3 NOTES

If Shed Target is ≤ [redacted] then Transition Block Size can be equal to Shed Target.

If Shed Target is > [redacted] then use an amount that can be divided into the Shed Target amount making each block size approximately the same. **DO NOT EXCEED** [redacted]

EXAMPLE: If [redacted] is Shed Target, then Transition Block Size can be set to [redacted] resulting in 2 cycles to rotate the load.

Other Parameter Entry fields should not be changed if PJM changes only the Shed Target amount.

3. **UPDATE** the following items on the **Rotating Load Shed Area Control** display.

3.A. **Shed Target**: **CHANGE** total MW amount to shed.

3.B. **Transition Block Size**: **ENTER** ≤ [redacted] for the amount of load to rotate during rotation period.

STEP 3.C. NOTE

With **Reinitialize Now** selected, changes to parameters take effect immediately.

With **Reinit - Next Rotation** selected, changes to parameters take effect at the start of the next rotation.

3.C. **CLICK Reinitialize Now** at the bottom of the display to Reinitialize Load Shed.

3.D. **REVIEW** the confirmation box,
AND CLICK Execute.

3.E. **REPEAT** *Step 3* for each area requiring manual load dump.

4. Restoration from Manual Load Dump

1. Upon receiving PJM cancellation of a Manual Load Dump Action, **PERFORM** the following steps:
   - 1.A. **NOTIFY** DCCs,
     AND LOG calls.
   - 1.B. **LOG AND ISSUE** SCC notifications.
2. **COMPLETE** the following steps on the Rotating Load Shed Area Control display.
   - 2.A. **RESTORE** load by selecting ONE of the following items at the left side of the display, based on system conditions:
     - **CLICK Deactivate With Restore** to restore all load.
     - **CLICK Deactivate Without Restore** for reliability concerns restoring load.
   - 2.B. **REVIEW** confirmation box,
     AND CLICK Execute.
   - 2.C. **REPEAT** *Steps 2.A. and 2.B.* for each area requiring restoration.
   - 2.D. **UPDATE** the **Starting Seq. #** to **1**.
   - 2.E. **IF** a circuit does not close or trips-open during the restoration,
     THEN TURN OVER the circuit to the DCC for final restoration.
3. **COMPLETE** the following steps on the Rotating Load Shed Overview display.
   - 3.A. **VERIFY** that **Status** for all areas is **Inactive**.
   - 3.B. **VERIFY** that **Shed Load = 0** for all areas.

STEP 3.C. NOTE

Completing this step disarms Rotating Load Shed for all areas.

   - 3.C. **CLICK DISARM** to disarm Rotating Load Shed.
   - 3.D. **REVIEW** the confirmation box,
     AND CLICK Yes.
4. **IF** unable to complete any of the above conditions,
   THEN NOTIFY TOS Management.
5. **NOTIFY** TOS Management, DCCs, and PJM of the amount of load restored and that restoration of Manual Load Dump is complete.
6. **LOG** calls.
7. **COMPLETE** SCC notifications.

5. Post-Contingency Local Load Relief Warning (PCLLRW) Manual Load Dump

PJM may initiate a PCLLRW for market facilities; TSO may initiate a PCLLRW for non-market facilities. In either situation, the PCLLRW provides advance notice of the potential for load shed in an area.

TSO maintains responsibility for completing the actions for a PCLLRW; however, TSO directs the DCC to shed load during the Load Shed event. TSO must consider removing additional circuits if needed.

As the primary action for addressing a PCLLRW, the TSO first contacts the DCC to shed load. The "manual load dump by station" outlined below is an alternate action for performing the PCLLRW load shed.

Upon identification of a potential cascade situation that requires the TSO to take action to manually dump load (market or non-market PCCLRW), **PERFORM** the steps outlined in this section.

1. **LOG AND ISSUE** SCC notifications.
2. **COMPLETE** the following steps on the LOADSHED Overview display (SCADA Applications > Loadshed).
    - 2.A. **ARM** LOADSHED
        - 2.A.1. **CLICK DISARMED**.
        - 2.A.2. **REVIEW** the confirmation box,
          AND CLICK Execute.
    - 2.B. **CLICK View Level Details** in the Areas BY_STATION section to open the LOADSHED LEVEL Information Display.
    - 2.C. **LOCATE** Station(s) and Devices(s) to be shed.
    - 2.D. **CLICK** corresponding **Device Status** box.
    - 2.E. **REVIEW** the confirmation box,
      AND CLICK Execute.
    - 2.F. **REPEAT** *Step 2* for each area requiring manual load dump.
3. **NOTIFY** DCCs,
   AND LOG calls.
4. **IF** PJM provided instruction for manual load dump,
   THEN NOTIFY PJM.
5. **INFORM** TOS Management and PJM of the performance of Manual Load Dump Action.
    - 5.A. **INDICATE** the total amount of load and the amount of load for areas.
    - 5.B. **LOG** calls.

6. PCLLRW Restoration of Manual Load Dump

1. Upon cancellation of a Manual Load Dump Action (market or non-market PCLLRW), **PERFORM** the following steps:
   - 1.A. **NOTIFY** DCCs,
     AND LOG calls.
   - 1.B. **LOG AND ISSUE** SCC notifications.
2. **COMPLETE** the following steps on the LOADSHED Level Information display.
   - 2.A. **LOCATE** the Station(s) and Devices(s) to be restored.
   - 2.B. **CLICK** the corresponding **Device Status** box(es).
   - 2.C. **REVIEW** the confirmation box,
     AND CLICK Execute.
   - 2.D. **REPEAT** *Step 2 and substeps* for each area requiring restoration.
3. **IF** a circuit does not close during the restoration,
   OR if a circuit trips open during the restoration,
   THEN TURN OVER the circuit to the DCC for final restoration.
4. **COMPLETE** the following steps on the LOADSHED Level Information display to disarm LOADSHED.
   - 4.A. **CLICK ARMED**.
   - 4.B. **REVIEW** the confirmation box,
     AND CLICK Execute.
5. **IF** unable to complete any of the above conditions,
   THEN NOTIFY TOS Management.
6. **NOTIFY** TOS Management, DCCs, and PJM of the amount of load restored and that restoration of Manual Load Dump is complete.
7. **LOG** calls.

7. Revision and Availability

TOS Compliance and Procedures (C&P) Team completes the steps in this section.

Revision

1. **PERFORM** an annual review of this procedure.

Availability

1. **SEND** email on release day to each Manager, Distribution Support Operations,
   AND PROVIDE PDF copy of procedure.

Acronyms

Acronym	Full Title
BES	Bulk Electric System
DCC	Distribution Control Center
EMS	Energy Management System
FE	FirstEnergy
IROL	Interconnection Reliability Operating Limits
iTOA	Integrated Tools for Transmission Application (formerly EDOA)
PCLLRW	Post-Contingency Local Load Relief Warning
RelCoor	Reliability Coordinator
RLS	Rotating Load Shed
RTO	Regional Transmission Organization
SCC	System Control Center
TO	Transmission Owner
TOS	Transmission Operations Services
TSO	Transmission System Operator

Related Documents

Title
SCC-DG-006 PCLLRW Tool
SCC-EOP-001 Emergency Operations
PJM Manual 13 Emergency Operations

Revision History

Rev.	Effective Date	Preparer	Comments
7	09/17/2025	J. Giordano	Errata Change Section1: Corrected step 3D1 change documented and intended for prior release. Added reference to existing step 3C1 NOTE.
7	08/20/2025	O. Khan, J. Giordano	Annual Review SMEs: M. O'Brien (FEE), J. Fabery (FES), A. Forsch (FEW) Section 1, Step 1: Expanded details for creating iTOA log entry. Section 1, Step 3B3: Clarified access method per SME. Section 1, Step 3C1: Moved " verify DISARM status" step up from Step 3D1. Section 1, Step 3C2 Notes: Changed to "Controllable Load" and "Total Load in Area" per SME Review. Section 2, Step 2: Updated to align with approach when PJM doesn't issue Warning before issuing Action. Added substep to indicate priority of TSO tasks. Section 2, Step 4: Expanded details for creating iTOA log entry. Section 4, Step 7: Added for SCC notifications per SME Review. Section 5, Step 5: Removed DCCs; already notified in step 3. Section 7: Added new section to reflect additional release steps. Related Documents: Added TOS procedure hyperlinks. Throughout document: Changed "Rotating Load Shed Control display" to "Rotating Load Shed Area Control display" per SME Review.
6	06/12/2024	J. Giordano	Annual Review SMEs: A. Bowers (FEE), T. Martin (FES), P. Deemer (FEW) Procedure number and title: • Updated from SCC-EOP-001LD Emergency Operations – Load Dump Actions. • Control Room Manager approval obtained. Section 1: Numbered substeps in table under Step 3.B. Reversed order of Steps 3C and 3D to align with current process. Section 2: Moved intro paragraph from above Step 2 into SECTION NOTE. Started numbering at COMPLETE and updated throughout rest of list. Section 4, Step 2: Split substeps into bullets. Moved one substep up 1 level. Approvals: Removed J. Trout; document is not used as Compliance evidence. Throughout document: Updated to align with current C&P template, style, and formatting.
5	05/25/2023	J. Giordano	Annual Review SMEs: A. Bowers (FEE), D. Conaway (FES), M. Backer (FEW) Scope: Added optional section. Applicability: Added required section. Moved intro statement about RelCoor and TSO from "General Requirements" section here. General Requirements: Reorganized existing content into two new subsections. Section 1 and Section 2, Step 1: Added "upon receiving" stem sentence. Section 1, Step 3B: Moved content to table format for readability and clarity. Section 1, Step 3C and Step 3D: Consolidated multiple notes into single box for each applicable substep. Section 2, Steps 6-7: Consolidate into a single "notify" step. Acronyms: Added optional section. Throughout document: Updated style and formatting to align with 2022 C&P template and style guide.

Rev.	Effective Date	Preparer	Comments
4	04/28/2022	J. Johnson	Annual Review. SMEs: M. Kirkhart (FEE), J. Satterfield (FES), P. Deemer (FEW) Section 5: 5.2.1 numbering was added to follow the correct sequence. 5.3.2 numbering was added to follow correct sequence. This did not change the text.
3	03/25/2021	J. Giordano	Annual Review SMEs: M. Kirkhart (FEE), J. Satterfield (FES), P. Deemer (FEW) Section 5.2: Updated to align with current process. Throughout documents: Updated to align with current process, style guide, and formatting.
2	03/27/2020	J. Giordano	SMEs: M. Kirkhart (FEE), J. Satterfield (FES), P. Deemer (FEW) Annual Review Sec 2.2.1: Added step. Sec 2.3.2: Removed Note regarding AOR Permissions. Sec 2.3.3: Changed Subset Circuit Buffer to 20%. Sec 3: Added Note regarding reporting requirements and included cross-reference to SCC-EOP-004. Sec 4: Clarified wording of Note. Sec 4.1: Clarified statement. Throughout procedure: Applied consistent formatting and language to align with C&P style guide, including IF-THEN statements where applicable. Clarified procedure section references. Verified and updated procedure titles and numbers.
1	03/27/2019	L. Bush A. Graybill	Throughout procedure: Updated to reflect EMS 3.2 nomenclature and functionality. Related Documents: Removed retired procedure FE-WEST-EOP-402.
0	05/16/2018	J. Eckels A. Graybill	Initial SCC procedure creation for rotating load shed and PCLLRW block manual load dump. Converted from FE-EAST-EOP-001LD, FE-SOUTH-EOP-001LD, and FE-WEST-EOP-001LD.

Approvals

This document was reviewed and approved electronically. Records are available upon request through the Transmission Operations Support Compliance & Procedures group.

Name	Title	Date
A. Park, signing for J. Kinney	FE East Shift Supervisor, Transmission Operations	08-14-2025
K. Berger	FE South Manager, Transmission Operations	08-15-2025
K. Weidrick	FE West Manager, Transmission Operations	08-14-2025

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

2025 Annual Reliability Report – FirstEnergy Pennsylvania Electric Company on behalf of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company	:	**Docket No. M-2023-3039027**

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).

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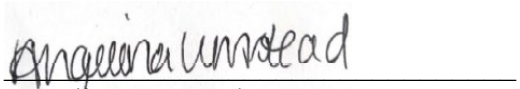

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