

Annual ARR Allocation and FTR Auction Transmission Outage Modeling

PJM determines the transmission outages to model in the simultaneous feasibility test utilized in the Annual ARR Allocation and FTR Auction using the following procedure.

PJM executes the SFT analysis on transmission outages as follows:

1. PJM begins with the initial outage list as it is submitted to PJM by the transmission owners posted on the PJM OASIS. This is a raw list of outages available to the public on the PJM OASIS page. This list is not necessarily a list of approved outages or actual outages that will be occurring as it changes daily and many of the outages are not yet approved. This list consists of all transmission outages of duration of two weeks or longer. Transmission outages will only be considered in final model if scheduled for at least two months or if identified in step four below.
2. PJM reviews the initial outage list for all PJM transmission zones and identifies outages that are occurring during the period of the Annual ARR allocation and FTR Auction which do not occur simultaneously. Outages often occur during different times of the year and would not be approved to occur simultaneously because they would cause reliability concerns. Therefore, PJM models the best representation of outages to reflect the expected conditions of the auction time period. In many instances it is impractical and unrealistic to model multiple outages in a similar region that occur during different time periods because the Annual ARR/FTR model is a single year period and if these multiple outages were modeled the optimization program would fail because of a power imbalance or infeasibility.
3. PJM market engineers also review all transmission outages of interest with the PJM interconnection and operations group for the likelihood of the outages actually occurring. In many instances outages are submitted to PJM and posted on OASIS that are not yet approved and will be delayed, cancelled, or rescheduled. Outages might be rescheduled, cancelled, or delayed for reasons such as cancelled transmission upgrades, conflicts with other outages, maintenance cancellations, etc. This information is gathered by the PJM Interconnection Planning department, PJM System Operations department, and the actual transmission owners.
4. PJM market engineers will review the transmission outage list and identify transmission outages that could have a large impact on congestion and possibly FTR revenue adequacy. This determination is made by comparing transmission outages to historical data, focusing on higher voltage transmission outages, considering outage duration, and performing power flow congestion analysis.
5. After this analysis is performed on the initial OASIS outage list and PJM determines the actual outages that will be placed in the optimization program, PJM posts a separate FTR outage list to the FTR web page. This separate FTR outage list is posted publicly along with the actual FTR model usually at least one week before the

bidding window opens so that PJM members have a transparent view of the conditions to be used for the optimization program.

PJM must use reasonable assumptions for the topology to be used as part of the optimization program. The goal of the simultaneous feasibility determination shall be to ensure that there are sufficient revenues from Transmission Congestion Charges to satisfy all Financial Transmission Rights obligations for the auction period under expected conditions and to ensure that there are sufficient revenues from the Annual Financial Transmission Right Auction to satisfy all Auction Revenue Rights obligations.

The SFT analysis has resulted in the below transmission outages to be modeled in the 2022/2023 Annual ARR Allocation and FTR Auction.

2022/2023 Annual ARR/FTR Outages						
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day	
AE	BECKETT 69 KV BEC-CHU	LINE	All	9/23/2022	12/6/2022	
AE	CARNEYPT69 KV CAR-CHU	LINE	All	9/23/2022	12/15/2022	
AE	CARNEYPT69 KV CAR-PENN	LINE	All	9/23/2022	12/15/2022	
AE	CHURCHTO69 KV CHU-WOO5	LINE	All	9/23/2022 11/29/2022	11/18/2022 12/16/2022	
AE	CHURCHTO69 KV CHU-WOO6	LINE	All	9/23/2022 11/29/2022	11/18/2022 12/16/2022	
AE	ENGLAND 138 KV ENG-MDT	LINE	All	10/4/2022	4/18/2023	
AE	ENGLAND 138 KV ENG-MER	LINE	All	10/4/2022	11/14/2022	
AE	MONR AE 69 KV MON-PIN	LINE	All	9/19/2022	5/6/2023	
AE	OLDMAN 69 KV OLD-PEN	LINE	All	9/23/2022	12/15/2022	
AE	QUINTON 69 KV QUI-ROA	LINE	All	2/21/2023	5/6/2023	
AEP-AP	AMOS 765 KV AMO-NPR1	LINE	All	6/1/2022	6/24/2022	
AEP-AP	BOONSBO2138 KV BOO-FOR1	LINE	All	8/2/2022 9/20/2022 3/13/2023	9/9/2022 12/8/2022 6/8/2023	
AEP-AP	BRADLEY 138 KV BRA-DAM1	LINE	All	10/24/2022 12/15/2022	10/27/2022 11/15/2023	
AEP-AP	CHEMICAL138 KV . 1	XFRM	All	9/30/2017	12/31/2022	
AEP-AP	CHEMICAL138 KV . 2	XFRM	All	8/14/2019	12/31/2022	
AEP-AP	GRAVESMI138 KV GRA-REU1	LINE	All	9/20/2022 3/13/2023	12/8/2022 6/8/2023	
AEP-AP	HANCOCK 138 KV 1-P	XFRM	All	3/13/2023	5/25/2023	
AEP-AP	HANCOCK 34 KV 1-T	XFRM	All	3/13/2023	5/25/2023	
AEP-AP	HANCOCK 69 KV 1-S	XFRM	All	3/13/2023	5/25/2023	
AEP-AP	HARMON 138 KV HAR-PAD	LINE	All	11/1/2022 3/1/2023	11/3/2022 6/15/2023	
AEP-AP	HARMON 138 KV HAR-SOU	LINE	All	9/1/2022 4/3/2023 5/9/2023	12/15/2022 4/7/2023 5/11/2023	
AEP-AP	HOLSTON 138 KV HOL-ORE1	LINE	All	9/26/2022 10/21/2022 11/8/2022	9/26/2022 10/22/2022 12/5/2022	

2022/2023 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
AEP-AP	WYOMING2765 KV 2	XFRM	All	9/20/2022 12/5/2022	10/20/2022 12/14/2022
AEP-IM	ADAMSIM 138 KV ADA-MAG1	LINE	All	3/13/2023	6/22/2023
AEP-IM	ADAMSIM 138 KV TR1	XFRM	All	3/13/2023	5/25/2023
AEP-IM	ALLENIM 138 KV ALL-LIN3	LINE	All	4/28/2022	10/31/2022
AEP-IM	BERNE 69 KV ADA-BER	LINE	All	3/13/2023	5/25/2023
AEP-IM	BLUFFTON69 KV ADA-BLU	LINE	All	3/13/2023	5/25/2023
AEP-IM	CONCORD 138 KV CON-TWI	LINE	All	2/1/2023	5/23/2023
AEP-IM	COOK 345 KV 4-S	XFRM	All	10/8/2022	11/9/2022
AEP-IM	COOK 765 KV 4-P	XFRM	All	10/8/2022	11/9/2022
AEP-IM	DELAWAIM138 KV DEL-VAN1	LINE	All	6/13/2022 10/5/2022	7/20/2022 5/1/2023
AEP-IM	DEQUINE 345 KV DEQ-WES2	LINE	All	10/10/2022	10/28/2022
AEP-IM	FISHERBO138 KV FIS-GRA1	LINE	All	9/15/2022	10/31/2022
AEP-IM	GRANT 138 KV GRA-GRE1	LINE	All	9/15/2022	10/31/2022
AEP-IM	GUARDIAN138 KV GUA-TWI1	LINE	All	2/1/2023	5/23/2023
AEP-IM	HACIENDA138 KV HAC-HAR1	LINE	All	2/21/2022 6/30/2022 1/28/2023	6/2/2022 10/26/2022 6/16/2023
AEP-IM	HARPER 138 KV HAR-MIL1	LINE	All	6/27/2022	11/4/2022
AEP-IM	ILLINOIS138 KV ILL-IND1	LINE	All	1/17/2023	5/13/2023
AEP-IM	ILLINOIS138 KV ILL-SOR1	LINE	All	1/17/2023	5/13/2023
AEP-IM	ILLINOIS138 KV XF1	XFRM	All	1/17/2023	5/5/2023
AEP-IM	JEFFERSO765 KV JEF-GRE1	LINE	All	9/1/2022	5/23/2023
AEP-IM	LINCOLN2138 KV LIN-ROB1	LINE	All	5/12/2022 8/24/2022 11/8/2022 1/28/2023	6/2/2022 10/26/2022 1/3/2023 6/16/2023
AEP-IM	MEADOWLK345 KV MEA-REY	LINE	All	9/6/2022	10/14/2022
AEP-IM	MEADOWLK345 KV MEA-REY2	LINE	All	9/6/2022	10/14/2022
AEP-IM	OLIVE 345 KV OLI-OLIV	LINE	All	9/15/2022 3/15/2023	12/31/2022 6/15/2023
AEP-IM	PENNVILL138 KV PEN-ADA1	LINE	All	9/6/2022 2/27/2023 3/13/2023	12/29/2022 3/3/2023 5/25/2023
AEP-IM	PIPECREE138 KV PIP-STR	LINE	All	1/3/2023	11/3/2023
AEP-IM	TANNERSC345 KV TAN-EBE1	LINE	All	9/11/2022 11/28/2022 4/24/2023	9/23/2022 12/9/2022 6/9/2023
AEP-IM	TANNERSC345 KV TAN-MIA1	LINE	All	9/11/2022 11/28/2022 4/24/2023	9/23/2022 12/9/2022 6/9/2023
AEP-KY	BAKER 765 KV .300	XFRM	All	4/3/2023	5/26/2023
AEP-KY	BELLEFON138 KV BEL-OXY1	LINE	All	6/21/2021	12/30/2022
AEP-KY	BULAN 69 KV BUL-HAZ1	LINE	All	8/1/2022	12/8/2022
AEP-KY	HAZARD 138 KV 1	XFRM	All	8/1/2022	12/8/2022

2022/2023 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
AEP-KY	HAZARD 138 KV 2	XFRM	All	9/12/2022 3/13/2023	9/30/2022 6/28/2023
AEP-KY	HAZARD 138 KV HAZ-VIC1	LINE	All	8/1/2022	12/8/2022
AEP-KY	HAZARD 161 KV 3	XFRM	All	9/12/2022 3/13/2023	9/30/2022 6/28/2023
AEP-KY	HAZARD 161 KV HAZ-WOO	LINE	All	9/12/2022 3/13/2023	9/30/2022 6/28/2023
AEP-KY	HAZARD 69 KV HAZ-LES	LINE	All	8/1/2022	12/8/2022
AEP-OH	ACADEMIA138 KV ACA-MIL1	LINE	All	2/14/2023 2/27/2023	2/24/2023 12/19/2024
AEP-OH	BENTONVI69 KV BEN-BRO	LINE	All	2/22/2023	5/23/2023
AEP-OH	BRICE 138 KV BRI-REFU	LINE	All	1/11/2023	5/16/2023
AEP-OH	CANALAE138 KV CAN-MAR2	LINE	All	5/10/2022 9/7/2022	6/7/2022 1/19/2023
AEP-OH	CANALAE138 KV CAN-WHI	LINE	All	6/8/2022	5/11/2023
AEP-OH	CARROLLT138 KV CAR-GAB	LINE	All	1/5/2022	1/10/2025
AEP-OH	CROOKSVI138 KV CRO-CAN1	LINE	All	7/6/2022	8/29/2023
AEP-OH	ELEIPSIC138 KV ELE-RIC1	LINE	All	3/6/2023	11/19/2023
AEP-OH	ESIDELIM138 KV ESI-NDE1	LINE	All	10/5/2022 2/15/2023	11/15/2022 6/13/2023
AEP-OH	ISABELLA138 KV ISA-NNEW	LINE	All	3/31/2022	6/23/2023
AEP-OH	LICK 13 KV 3-T	XFRM	All	7/18/2022	11/18/2022
AEP-OH	LICK 138 KV 3-P	XFRM	All	7/18/2022	11/18/2022
AEP-OH	LICK 69 KV 3-S	XFRM	All	7/18/2022	11/18/2022
AEP-OH	MELMORE 138 KV MEL-STI	LINE	All	9/7/2022	12/6/2022
AEP-OH	MILLWOO2138 KV MIL-NBE	LINE	All	2/27/2023	9/14/2023
AEP-OH	MILLWOO2138 KV MIL-WAKA	LINE	All	2/27/2023	9/14/2023
AEP-OH	MILLWOO2138 KV MIL-WTR1	LINE	All	2/14/2023 2/27/2023	2/24/2023 12/19/2024
AEP-OH	NBLUFFTO69 KV NBL-NWO	LINE	All	1/13/2022	10/4/2022
AEP-OH	NNEWARK 138 KV NNE-SHA1	LINE	All	2/14/2022 9/13/2022	7/1/2022 4/27/2023
AEP-OH	NWOODCOC138 KV 1-P	XFRM	All	1/13/2022	10/4/2022
AEP-OH	NWOODCOC34 KV 1-T	XFRM	All	1/13/2022	10/4/2022
AEP-OH	NWOODCOC69 KV 1-S	XFRM	All	1/13/2022	10/4/2022
AEP-OH	PANHANDL69 KV PAN-SEA1	LINE	All	7/6/2022	10/12/2022
AEP-OH	STIFFIN 138 KV STI-WEF	LINE	All	9/7/2022	12/6/2022
AEP-OH	STIFFIN 138 KV T2 XF	XFRM	All	9/7/2022	12/6/2022
AEP-OH	WARNERSS138 KV TOR-WAR	LINE	All	5/2/2022	9/30/2022
AEP-OH	WCANTON 138 KV WCA-DAL1	LINE	All	10/17/2022	11/14/2022
AEP-OH	WEFOSTOR138 KV WEF-02W1	LINE	All	10/24/2022	3/10/2023
APSS	502JCT 500 KV MTS-502	LINE	All	3/13/2023	4/27/2023
APSS	CATOCTIN138 KV CAT-GAR	LINE	All	9/1/2022 1/3/2023 3/6/2023 5/12/2023	9/5/2022 1/12/2023 3/26/2023 6/2/2023

2022/2023 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
APSS	CHARLERO138 KV CHA-UNI	LINE	All	9/19/2022 10/17/2022 4/17/2023	10/14/2022 11/14/2022 5/31/2023
APSS	FROSTOWN230 KV FRO-RIN	LINE	All	9/1/2022	3/16/2023
APSS	GARFLD_T138 KV GAR-RIN	LINE	All	9/1/2022 4/4/2023	3/13/2023 6/2/2023
APSS	GARRETT 138 KV TRAN 2	XFRM	All	5/30/2022 6/13/2022 9/1/2022	6/10/2022 6/24/2022 11/30/2022
APSS	OLDFARM 230 KV OLD-RIN	LINE	All	3/13/2023	6/1/2023
APSS	RINGGOLD230 KV T3	XFRM	All	3/13/2023	6/2/2023
APSS	RINGGOLD230 KV T4	XFRM	All	9/2/2022 3/20/2023	3/16/2023 4/3/2023
APSS	SALTSBUR138 KV SAL-SOC	LINE	All	11/12/2022 3/1/2023	11/12/2022 6/9/2023
APSS	SHEPLJCT138 KV SHE-SMI	LINE	All	9/15/2022	12/31/2022
BC	COLONIAL115 KV COL-GLE1	LINE	All	9/3/2022	11/15/2022
BC	COLONIAL115 KV COL-ROC1	LINE	All	9/3/2022	11/15/2022
BC	CONASTON230 KV CNS-OTT	LINE	All	9/27/2022 12/1/2022 5/2/2023	10/26/2022 12/20/2022 5/31/2023
BC	FIVEFORK115 KV FIV-ROC1	LINE	All	9/3/2022	11/15/2022
BC	GLENARM 115 KV GLE-WIN1	LINE	All	9/3/2022	11/15/2022
BC	GOULDST 34 KV GOU-RIV1	LINE	All	9/4/2020	9/9/2022
BC	GOULDST 34 KV GOU-RIV2	LINE	All	9/4/2020	9/9/2022
BC	GRACETON230 KV GRA-SAF	LINE	All	10/26/2022 11/29/2022 3/23/2023	11/23/2022 12/11/2022 4/30/2023
BC	GREE BC 115 KV GRE-WES4	LINE	All	11/3/2022	11/17/2022
COMED	150 CALU345 KV 17723 2	LINE	All	10/25/2022	12/19/2022
COMED	150 CALU345 KV 17723 3	LINE	All	10/25/2022	12/19/2022
COMED	153 TAYL345 KV 17723 1	LINE	All	10/25/2022	12/19/2022
COMED	155 NELS138 KV 15507 1	LINE	All	9/12/2022	10/9/2022
COMED	155 NELS138 KV TR84CT-S	XFRM	All	9/12/2022	10/9/2022
COMED	155 NELS34.5 KV TR84CT-T	XFRM	All	9/12/2022	10/9/2022
COMED	155 NELS345 KV TR84CT-P	XFRM	All	9/12/2022	10/9/2022
CPL	CTYRCKMT230 KV CTY-NASH	LINE	All	3/1/2023	6/15/2023
CPL	PERSON4 230 KV 296C	LINE	All	5/9/2022 9/19/2022	6/7/2022 10/7/2022
CPL	WARRENT 115 KV 45B	LINE	All	6/1/2022	12/31/2022
DAYTON	13822TAP138 KV 138-NOR	LINE	All	6/4/2022	8/5/2022
DAYTON	NORMAN 69 KV NOR-SUGA	LINE	All	3/28/2022	8/5/2022
DEOK	08ASHLD7138 KV ASH-OAK1	LINE	All	3/23/2021	12/22/2023
DEOK	08BROWN 138 KV 08B-STU1	LINE	All	10/14/2022	1/13/2023
DEOK	08GRANT 69 KV GRA-WILL	LINE	All	3/14/2022	9/2/2022
DEOK	AERO1 138 KV AER-WOOD	LINE	All	12/3/2020	9/2/2022

2022/2023 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
DEOK	BECKJORD138 KV BK9	XFRM	All	2/27/2023	5/5/2023
DEOK	BECKJORD69 KV BEC-08T1	LINE	All	2/27/2023	5/5/2023
DEOK	COLLINSV138 KV HUS-COL	LINE	All	10/16/2022 3/6/2023	11/4/2022 4/21/2023
DEOK	HENKEL 138 KV HEN-TER	LINE	All	9/12/2022 3/6/2023	10/21/2022 3/31/2023
DEOK	REDBANK 138 KV RED-OAK	LINE	All	3/23/2021	12/22/2023
DOM-C	CHANCELR500 KV 4	XFRM	All	9/19/2022 10/31/2022 3/1/2023	10/1/2022 11/20/2022 6/14/2023
DOM-C	CHANCELR500 KV 581	LINE	All	9/19/2022 10/31/2022 3/1/2023	10/1/2022 11/20/2022 6/14/2023
DOM-C	CHANCELR500 KV TX1	XFRM	All	3/1/2022 9/16/2022 3/13/2023 4/3/2023	6/14/2022 12/31/2022 3/19/2023 4/23/2023
DOM-C	CHESTER4115 KV 17A	LINE	All	1/18/2022	1/31/2023
DOM-C	CHESTER4230 KV 205A	LINE	All	5/15/2022	12/19/2022
DOM-C	CHICKHOM230 KV 2075C	LINE	All	9/1/2022 3/15/2023	12/31/2022 6/30/2023
DOM-C	CHICKHOM500 KV 557A	LINE	All	9/1/2022 3/15/2023	12/31/2022 6/30/2023
DOM-C	CHICKHOM500 KV TX1	XFRM	All	9/1/2022 3/15/2023	12/31/2022 6/30/2023
DOM-C	ELMONT4 115 KV 73A	LINE	All	6/1/2022 3/20/2023	12/9/2022 3/24/2023
DOM-C	ELMONT4 500 KV TX1	XFRM	All	8/16/2022	11/30/2022
DOM-C	FOURRIVR115 KV 73B	LINE	All	6/1/2022	12/31/2022
DOM-C	ICI 230 KV 2050A	LINE	All	9/1/2022	12/31/2022
DOM-C	KERR45 115 KV 45A	LINE	All	6/1/2022	12/31/2022
DOM-C	KEVLAR 115 KV 53A	LINE	All	6/6/2022	11/30/2022
DOM-C	NANNA4 500 KV RSS2	XFRM	All	3/6/2023	5/1/2023
DOM-C	NANNA4 500 KV TX5	XFRM	All	3/6/2023	5/1/2023
DOM-C	PIPELINE115 KV 63B	LINE	All	8/1/2022 2/1/2023	9/30/2022 4/3/2023
DOM-C	POE 230 KV 2002A	LINE	All	2/27/2023	6/16/2023
DOM-C	TWELFTHS115 KV TX2	XFRM	All	8/1/2022 2/1/2023	9/30/2022 4/3/2023
DOM-C	TYLER 230 KV 2003A1	LINE	All	5/15/2022	12/16/2022
DOM-E	BOYKINS 115 KV 108A	LINE	All	9/6/2022	12/16/2022
DOM-E	DRYBREAD230 KV DRY-LAKE	LINE	All	11/22/2022	12/22/2023
DOM-E	FTEUSTIS115 KV FTE-SKFF	LINE	All	8/2/2022	12/22/2022
DOM-E	GRASSFID115 KV 74CA	LINE	All	7/26/2022	11/10/2022
DOM-E	HODGESFY115 KV 87A	LINE	All	8/2/2022	12/31/2022
DOM-E	LANEXA 230 KV 224A	LINE	All	1/5/2022	7/31/2023

2022/2023 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
DOM-E	LITLCREK115 KV 181A	LINE	All	8/1/2022	11/3/2022
DOM-E	OAKWOOD 115 KV 107A	LINE	All	8/1/2022	11/3/2022
DOM-E	OAKWOOD 115 KV TX2	XFRM	All	8/1/2022	11/3/2022
DOM-E	OAKWOOD 115 KV TX4	XFRM	All	8/1/2022	11/3/2022
DOM-E	OAKWOOD 115 KV TX5	XFRM	All	8/1/2022	11/3/2022
DOM-E	SEPTA4 500 KV 578A	LINE	All	9/15/2022	10/14/2022
DOM-E	SURRY4 500 KV 567A	LINE	All	9/1/2022 3/15/2023	12/31/2022 6/30/2023
DOM-N	ARLINGTON230 KV 258A	LINE	All	4/18/2022	4/19/2024
DOM-N	BRISTERS500 KV 552	LINE	All	3/1/2022 9/16/2022 3/13/2023 4/3/2023	6/14/2022 12/31/2022 3/19/2023 4/23/2023
DOM-N	BULLRUN 230 KV 295C	LINE	All	4/29/2022	12/21/2022
DOM-N	BULLRUN 230 KV BUL-JOHN	LINE	All	4/29/2022	12/15/2022
DOM-N	BULLRUN 230 KV TX3	XFRM	All	9/12/2022	12/15/2022
DOM-N	CARLYLES230 KV CAR-POT1	LINE	All	4/18/2022	4/19/2024
DOM-N	CARLYLES230 KV CAR-VAHI	LINE	All	4/18/2022	4/19/2024
DOM-N	GLEBE 230 KV 2036A1	LINE	All	4/18/2022	4/19/2024
DOM-N	GLEBE 230 KV GLE-POTO	LINE	All	4/18/2022	4/19/2024
DOM-N	OX4 500 KV TX2	XFRM	All	10/3/2022	12/1/2022
DOM-N	POSS560 500 KV 560A	LINE	All	8/30/2022	9/30/2022
DOM-N	RESTON 230 KV 2010A	LINE	All	1/1/2023	12/31/2023
DOM-N	SHELHORN230 KV TX1	XFRM	All	1/1/2023	6/15/2023
DOM-N	TYSONS 230 KV TX2	XFRM	All	1/2/2023 1/30/2023 3/6/2023	1/27/2023 2/3/2023 5/19/2023
DOM-S	BETHELCA115 KV TX1	XFRM	All	1/3/2023	3/31/2023
DOM-S	CAROLINA115 KV 81G	LINE	All	7/11/2022 1/9/2023	8/31/2022 4/3/2023
DOM-S	EVERETTS115 KV 139A	LINE	All	3/9/2022	12/31/2022
DOM-S	HATHAWAY230 KV 2058A1	LINE	All	3/1/2023	6/15/2023
DOM-S	TARBORO 230 KV 229B	LINE	All	10/3/2022	11/30/2023
DOM-S	WILROBDP115 KV 96D	LINE	All	8/8/2022	12/22/2022
DOM-W	EDINBUR4138 KV TX3	XFRM	All	8/11/2022	12/17/2022
DOM-W	HARRSNBG115 KV 170A	LINE	All	7/4/2022	11/3/2022
DOM-W	HARRSNBG115 KV 43A2	LINE	All	5/16/2022 7/4/2022	6/30/2022 11/3/2022
DOM-W	HARRSNBG115 KV TX1	XFRM	All	7/4/2022	11/3/2022
DOM-W	HARRSNBG115 KV TX2	XFRM	All	7/4/2022	11/3/2022
DOM-W	HARRSNBG115 KV TX3	XFRM	All	7/4/2022	11/3/2022
DOM-W	HARRSNBG230 KV TX4	XFRM	All	7/4/2022	11/4/2022
DOM-W	HARRSNBG230 KV TX5	XFRM	All	7/4/2022	11/3/2022
DOM-W	LEXINGTON500 KV 555A	LINE	All	9/6/2022	9/29/2022
DOM-W	LOWMOOR 230 KV TX4	XFRM	All	9/25/2019	1/25/2024
DOM-W	MTSTORM422 KV SS2A	XFRM	All	2/27/2023	5/31/2023

2022/2023 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
DOM-W	MTSTORM422 KV SS2B	XFRM	All	2/27/2023	5/31/2023
DOM-W	MTSTORM4500 KV 550A	LINE	All	3/1/2022 9/12/2022 3/6/2023	6/15/2022 12/16/2022 6/15/2023
DOM-W	SKIMMER4115 KV 141A	LINE	All	7/1/2022 3/7/2023	3/5/2023 10/31/2023
DOM-W	TRIMBLDP115 KV 83A	LINE	All	9/30/2022	11/2/2023
DPL	CHESWOLD138 KV CHE-FEL	LINE	All	9/19/2022 3/6/2023	10/7/2022 5/12/2023
DPL	CHURCH 69 KV CHU-MAS	LINE	All	8/8/2022 9/6/2022 9/20/2022 12/3/2022 4/1/2023	8/31/2022 9/18/2022 11/23/2022 12/22/2022 5/14/2023
DPL	ENEWMARK69 KV ENE-ENE	LINE	All	9/12/2022	12/16/2022
DPL	ENEWMARK69 KV ENE-JAC	LINE	All	9/12/2022	12/16/2022
DPL	HARBESON69 KV HAR-SUS	LINE	All	9/26/2022 10/31/2022	9/30/2022 11/23/2022
DPL	INDIANRI230 KV IND-PIN	LINE	All	3/6/2023	4/15/2023
DPL	KEENEY 230 KV KEE-STE9	LINE	All	4/3/2023	4/21/2023
DPL	PINEYGRO230 KV AT20	XFRM	All	3/6/2023	4/15/2023
DPL	STVNSVIL69 KV STV-WYE	LINE	All	3/6/2023	6/2/2023
DUQU	BRUNOTIS138 KV BRU-NEV	LINE	All	9/26/2022	11/11/2022
DUQU	BRUNOTIS345 KV BR1-COL	LINE	All	10/3/2022	10/31/2022
DUQU	COLLIER 345 KV COL-CRE	LINE	All	10/3/2022	10/31/2022
DUQU	CRES DUQ138 KV CRE-MON	LINE	All	9/26/2022	5/19/2023
DUQU	CRES DUQ138 KV CRE-SEW	LINE	All	9/26/2022	5/19/2023
DUQU	CRES DUQ345 KV T2	XFRM	All	10/3/2022	10/31/2022
DUQU	NEVILLE 138 KV NEV-NEV	LINE	All	9/26/2022	11/11/2022
DUQU	NEVILTAP138 KV NEV-SEW	LINE	All	9/26/2022	11/11/2022
EKPC	CONWAYJ 69 KV THR-CNWJ	LINE	All	10/17/2022	8/11/2023
EKPC	MAGNOLI269 KV MAG-SMRS	LINE	All	5/16/2022	12/29/2022
EKPC	MUNK 69 KV MUN-OAK9	LINE	All	6/15/2022 4/10/2023	7/6/2022 8/11/2023
EKPC	MUNKJCT 69 KV MUN-WILL	LINE	All	3/14/2022	9/2/2022
EKPC	ROWAN_CO138 KV ROW-SKAG	LINE	All	3/14/2022	11/25/2022
EKPC	SKAGGS 138 KV XF1810	XFRM	All	3/14/2022	11/25/2022
FECL	AVONLAK2345 KV 91-AVT	XFRM	All	10/31/2022	11/18/2022
FECL	EASTLAKE138 KV EAS-02L1	LINE	All	11/28/2022	3/3/2023
FECL	EASTLAKE138 KV EAS-04M1	LINE	All	11/28/2022	3/3/2023
FECL	JENNING 138 KV JEN-LTV7	LINE	All	1/24/2020	12/31/2025
FECL	MAYFLD 138 KV 04M-PAW1	LINE	All	2/6/2023	5/26/2023
FECL	MAYFLD 138 KV 04M-PAW2	LINE	All	2/6/2023	5/26/2023
FECL	PAWNEETP138 KV PAW-02P1	LINE	All	2/6/2023	5/26/2023
FECL	PAWNEETP138 KV PAW-02P2	LINE	All	2/6/2023	5/26/2023
FECL	PAWNEETP138 KV PAW-LER1	LINE	All	2/6/2023	5/26/2023

2022/2023 Annual ARR/FTR Outages						
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day	
FECL	PAWNEETP138 KV PAW-LER2	LINE	All	2/6/2023	5/26/2023	
FEOE	GARDENOE138 KV GAR-CNT1	LINE	All	9/6/2022	10/14/2022	
FEOE	LAKVIEW 138 KV LAK-OTT1	LINE	All	2/1/2023	5/17/2023	
FETE	GARLING 138 KV GAR-WOOD	LINE	All	10/31/2022	3/10/2023	
FETE	RICHLND 138 KV RIC-02G1	LINE	All	1/16/2023	3/17/2023	
FETE	WFREMONT138 KV WFR-WOO1	LINE	All	10/31/2022	3/10/2023	
ILL_EQ	PANA 345 KV PAN-21K	LINE	All	9/24/2022	11/5/2022	
JC-N	BELVEDER115 KV BEL-DRA	LINE	All	9/15/2022	3/31/2023	
JC-N	BELVEDER115 KV BEL-MER	LINE	All	9/15/2022	3/31/2023	
JC-N	BELVEDER115 KV BEL-PEQ	LINE	All	9/15/2022	3/31/2023	
JC-N	DRAKESTO115 KV DRA-FLA	LINE	All	1/30/2023	3/31/2023	
JC-N	EFLEMING230 KV BK 3TR	XFRM	All	9/15/2022	5/31/2023	
JC-N	EFLEMING230 KV EFL-PLV	LINE	All	9/15/2022	5/31/2023	
JC-N	FLANDERS115 KV TR2	XFRM	All	1/30/2023	3/31/2023	
JC-N	GILBERT 115 KV GIL-MRP1	LINE	All	9/15/2022	3/31/2023	
JC-N	GLENGARD230 KV BK 2	XFRM	All	10/17/2022	12/16/2022	
JC-N	MERRILCR115 KV MER-MRP	LINE	All	9/15/2022	3/31/2023	
JC-N	MORRISPA115 KV BK1	XFRM	All	9/15/2022	3/31/2023	
JC-N	MORRISTO230 KV MOR-STO	LINE	All	10/10/2022	12/10/2022	
JC-N	READINGT230 KV BK 2TR	XFRM	All	9/7/2021 9/15/2022	6/4/2022 2/3/2023	
JC-N	READINGT230 KV REA-ROS	LINE	All	9/7/2021 9/15/2022	6/4/2022 2/3/2023	
JC-N	STON JC 230 KV STO-WHI2	LINE	All	10/10/2022	12/10/2022	
JC-S	WILL JC 230 KV WIL-PAR	LINE	All	2/27/2023 4/3/2023 5/15/2023	3/30/2023 5/7/2023 5/19/2023	
ME	FOXHILL 230 KV FOX-MON	LINE	All	9/9/2022	11/14/2022	
ME	FOXHILL 230 KV FOX-SHA	LINE	All	8/1/2022 10/17/2022	9/23/2022 11/11/2022	
ME	HARLEY D115 KV HAR-PLV	LINE	All	9/19/2022	12/16/2022	
ME	HUNTERST500 KV HUN-VIN	LINE	All	10/31/2022 4/3/2023	12/3/2022 5/12/2023	
ME	NHERSHEY230 KV NHE-NTE	LINE	All	3/20/2023	5/26/2023	
ME	PORTLAND230 KV 3 BANK	XFRM	All	9/12/2022 10/20/2022	10/18/2022 10/25/2022	
ME	TMI 500 KV 1 BANK	XFRM	All	6/1/2022	12/1/2022	
NXTERA	GRACOLIV345 KV GRA-GREE	LINE	All	9/15/2022	11/21/2022	
NXTERA	GRACOLIV345 KV GRA-OLIV	LINE	All	9/15/2022	11/21/2022	
NXTERA	OLIVUNPA345 KV OLI-UNPA	LINE	All	9/15/2022 3/15/2023	12/31/2022 6/15/2023	
PE	CALLOWHI138 KV CAL 1TR	XFRM	All	6/11/2022 9/19/2022 12/5/2022	6/12/2022 11/23/2022 12/18/2022	

2022/2023 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
PE	CALLOWHI138 KV CAL 4TR	XFRM	All	6/11/2022 9/19/2022 12/5/2022	6/12/2022 11/23/2022 12/18/2022
PE	CALLOWHI138 KV CAL 7TR	XFRM	All	6/11/2022 9/19/2022 12/5/2022	6/12/2022 11/23/2022 12/18/2022
PE	CALLOWHI138 KV CAL-MAS4	LINE	All	6/11/2022 9/19/2022 12/5/2022 4/29/2023	6/12/2022 11/23/2022 12/18/2022 5/1/2023
PE	COOPERPE230 KV COO-GRA	LINE	All	9/27/2022 10/7/2022 10/21/2022 11/29/2022 3/1/2023	9/27/2022 10/7/2022 10/26/2022 12/10/2022 3/23/2023
PE	MASTER 230 KV MAS 8TR	XFRM	All	12/5/2022	5/3/2023
PE	PASSYUNK69 KV PAS-SWA	LINE	All	9/12/2022	9/30/2022
PE	PEACHBOT13 KV 1-T	XFRM	All	11/3/2022 3/6/2023	11/4/2022 3/22/2023
PE	PEACHBOT230 KV 1-S	XFRM	All	11/3/2022 3/6/2023	11/4/2022 3/22/2023
PE	PEACHBOT500 KV 1-P	XFRM	All	11/3/2022 3/6/2023	11/4/2022 3/22/2023
PE	SWARK 69 KV SWK 3TR	XFRM	All	9/12/2022	9/30/2022
PE	WHITEMAR230 KV WHI-WHI	LINE	All	12/6/2022 3/1/2023	12/9/2022 3/12/2023
PEP	10THST 138 KV 10T-BUZ4	LINE	All	9/1/2022	2/28/2023
PEP	ALABAMA 230 KV 3T	XFRM	All	9/12/2022	10/7/2022
PEP	ALABAMA 230 KV ALA-PAL	LINE	All	9/12/2022	10/7/2022
PEP	BRIGHTON230 KV BRI-BUR3	LINE	All	3/28/2022 9/6/2022	6/13/2022 12/13/2022
PEP	BURCHESH500 KV BUR-POS	LINE	All	8/30/2022	9/30/2022
PEP	BUZZARD 138 KV BUZ-WAT3	LINE	All	6/22/2022 9/1/2022	7/8/2022 2/28/2023
PEP	BUZZARD 230 KV BUZ-RIT	LINE	All	9/1/2022	2/28/2023
PEP	BUZZARD 230 KV STAB-7-	XFRM	All	9/1/2022	2/28/2023
PEP	METZTAP 230 KV 163-3T	XFRM	All	9/6/2022	12/13/2022
PEP	MTZION 230 KV MTZ-NOR9	LINE	All	6/27/2022 9/19/2022	8/5/2022 12/16/2022
PEP	NORBECK 230 KV 158-4T	XFRM	All	6/27/2022 9/19/2022	8/5/2022 12/16/2022
PL-N	BLOOMING230 KV 2	XFRM	All	9/15/2022	12/21/2022
PL-N	CHEROKE169 KV CHE-DAN1	LINE	All	6/6/2022	8/22/2022
PL-N	CHEROKE169 KV CHE-SUNB	LINE	All	6/6/2022	8/22/2022
PL-N	COLU PL 69 KV COL-POI1	LINE	All	4/4/2022 6/27/2022	6/17/2022 12/29/2022

2022/2023 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
PL-N	HARWOOD 230 KV HAR-SUS2	LINE	All	5/21/2022 9/29/2022	6/11/2022 10/6/2022
PL-N	LACKAWAN230 KV 2	XFRM	All	9/14/2022 3/1/2023	10/14/2022 3/31/2023
PL-N	LACKAWAN500 KV 4	XFRM	All	9/14/2022	10/14/2022
PL-N	MILTON 230 KV MIL-MON	LINE	All	10/14/2022	8/18/2023
PL-N	MONR PL 138 KV MON-STR	LINE	All	8/24/2022 9/9/2022	9/7/2022 11/14/2022
PL-N	MONR PL 138 KV MON-STR2	LINE	All	6/2/2022 9/9/2022 11/16/2022 12/15/2022	6/7/2022 11/14/2022 11/29/2022 12/17/2022
PL-N	MONR PL 230 KV 2 TR	XFRM	All	9/9/2022	11/14/2022
PL-N	STANTON 230 KV 1	XFRM	All	6/28/2022	9/26/2022
PL-N	SUNBURY 500 KV 24	XFRM	All	6/15/2022	11/2/2022
PL-S	BLUEMONT138 KV BLU-SIE	LINE	All	5/10/2023	6/15/2023
PL-S	BRUNNERI230 KV BRU-SMA	LINE	All	11/8/2022	1/12/2023
PL-S	DONEG_PL69 KV DGL-SMA2	LINE	All	11/8/2022	1/12/2023
PL-S	EGYPT 138 KV EGY-SIE2	LINE	All	5/10/2023	6/15/2023
PL-S	HOWMET 69 KV HOW-SMA2	LINE	All	11/8/2022	1/12/2023
PL-S	JUNIATA 500 KV 2	XFRM	All	11/2/2022 1/28/2023 4/1/2023	12/23/2022 2/1/2023 4/5/2023
PL-S	MANOR 230 KV MAN-SAF1	LINE	All	8/8/2022	11/14/2022
PL-S	MARTINSC230 KV MAR-MON	LINE	All	9/9/2022	11/14/2022
PL-S	NAMPTON 138 KV NHA-SIE1	LINE	All	5/10/2023	6/15/2023
PL-S	OTTCRKL230 KV OTT-SAF	LINE	All	8/8/2022	11/14/2022
PL-S	SAFEHARB230 KV 2301	XFRM	All	8/8/2022	11/14/2022
PL-S	SAFEHARB230 KV 2302	XFRM	All	8/8/2022	11/14/2022
PL-S	SAKRON 230 KV 7	XFRM	All	6/1/2022 8/15/2022	7/14/2022 9/18/2022
PL-S	SIEGFRIE230 KV 5	XFRM	All	5/10/2023	6/15/2023
PL-S	SMANHEIM230 KV 3	XFRM	All	11/8/2022	1/12/2023
PN	BEARROCK230 KV BEA-JOH	LINE	All	10/10/2022	10/28/2022
PN	ELDORADO46 KV ELD-WES	LINE	All	10/10/2022	10/28/2022
PN	ERIES 230 KV 6 TX	XFRM	All	9/19/2022	12/30/2022
PN	ETOWANDA115 KV ETO-NME	LINE	All	9/15/2022 3/1/2023	12/30/2022 5/26/2023
PN	ETOWANDA230 KV 4 TX	XFRM	All	3/1/2023	5/26/2023
PN	FOREST 115 KV FOR-RID	LINE	All	3/1/2022 9/19/2022	6/14/2022 10/7/2022
PN	FOREST 230 KV 1 TX	XFRM	All	3/1/2022 9/19/2022	6/14/2022 10/7/2022
PN	FOREST 230 KV FOR-SQU	LINE	All	6/8/2022 9/19/2022	6/14/2022 10/7/2022

2022/2023 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
PN	GARRETAP115 KV GAR-GAR	LINE	All	5/30/2022 6/13/2022 9/1/2022	6/10/2022 6/24/2022 11/30/2022
PN	GLADE 230 KV FOR-GLA1	LINE	All	6/8/2022 9/19/2022	6/14/2022 10/7/2022
PN	HOOVERSV230 KV 3 TX 1	XFRM	All	9/19/2022	12/9/2022
PN	HOOVERSV230 KV HOO-QUE	LINE	All	9/19/2022	12/9/2022
PN	LEWISTOW230 KV NO2 -P	XFRM	All	9/12/2022	11/11/2022
PN	TYRONEN 115 KV BK 1	XFRM	All	10/7/2022	12/16/2022
PN	TYRONEN 115 KV TYR-WES	LINE	All	10/7/2022	12/16/2022
PS-N	ATHENIA 230 KV ATH-BEL	LINE	All	10/7/2022 11/28/2022 12/27/2022	10/27/2022 12/22/2022 1/25/2023
PS-N	COOKRD 230 KV COO-KIN	LINE	All	10/7/2022 11/28/2022 12/27/2022	10/27/2022 12/22/2022 1/25/2023
PS-N	DEANS 230 KV DEA-NEW	LINE	All	4/3/2023	5/15/2023
PS-N	HUDSON 345 KV 345-1	XFRM	All	1/15/2018	12/31/2023
PS-N	NEWARK 138 KV 132-4TX	XFRM	All	10/29/2021	12/30/2022
PS-N	NEWDOVER230 KV NEW-WES	LINE	All	4/3/2023	5/15/2023
PS-N	ROSELAND230 KV ROS-WHI	LINE	All	10/14/2022	10/27/2022
PS-N	ROSELAND500 KV 2TRX	XFRM	All	10/14/2022 12/6/2022	10/27/2022 1/4/2023
PS-S	HOPECREE500 KV HOP-RED	LINE	All	9/30/2022 11/5/2022 3/1/2023 4/1/2023	10/16/2022 12/13/2022 3/22/2023 5/21/2023
PS-S	HOPEWEL1230 KV HOP-PLVY	LINE	All	1/9/2023	5/31/2023
PS-S	PLVY PS 230 KV PLVY-ROC	LINE	All	1/9/2023	5/31/2023
SENY	FARRAGUT345 KV FAR-HUDB	LINE	All	1/15/2018	12/31/2023
SENY	FARRAGUT345 KV FAR-MAR	LINE	All	1/15/2018	12/31/2023
SENY	FARRAGUT345 KV FAR-MAR2	LINE	All	1/15/2018	12/31/2023