

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 2023/2024 Annual ARR Allocation and FTR Auction.

2023/2024 Annual ARR/FTR Outages						
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day	
AE	CAPEMAY 69 KV CAP-RIO5	LINE	All	1/26/2024	5/13/2024	
AE	CAPEMAY 69 KV CAP-RIO7	LINE	All	1/4/2024	4/6/2024	
AE	CUMB AE 138 KV CUM-UNI	LINE	All	9/6/2023 11/28/2023	10/13/2023 12/21/2023	
AE	MICKLETO69 KV MIC-VALT	LINE	All	9/25/2023	12/18/2023	
AE	MONR AE 69 KV MON-PIN	LINE	All	9/18/2023	12/20/2023	
AE	PAULSBRO69 KV PAU-VALT	LINE	All	9/25/2023	12/18/2023	
AE	QUINTON 69 KV QUI-ROA	LINE	All	9/18/2023	12/7/2023	
AE	SECONDDST69 KV SEC-SHE1	LINE	All	9/6/2023	11/6/2023	
AE	SECONDDST69 KV SEC-WHTP	LINE	All	9/25/2023	12/6/2023	
AE	SMILLVIL69 KV SMI-WHTP	LINE	All	10/26/2023 3/25/2024	12/6/2023 5/6/2024	
AE	VALERO 69 KV VAL-VALT	LINE	All	9/25/2023	12/18/2023	
AEP-AP	BOLT 138 KV BOL-BOL1	LINE	All	9/16/2023	12/5/2023	
AEP-AP	BOONSBO2138 KV BOO-REU1	LINE	All	9/14/2023	12/8/2023	
AEP-AP	BRADLEY 138 KV BRA-DAM1	LINE	All	6/1/2023 6/5/2023 7/21/2023	6/1/2023 6/8/2023 11/15/2023	
AEP-AP	BRUES 138 KV BRU-WBE2	LINE	All	8/28/2023	11/7/2023	
AEP-AP	CLOVERD2345 KV 11A	XFRM	All	3/19/2024	6/20/2024	
AEP-AP	CLOVERD2345 KV 11B	XFRM	All	3/19/2024	6/20/2024	
AEP-AP	DANVILLE138 KV DAN-EDA1	LINE	All	3/12/2024	6/14/2024	
AEP-AP	GRAVESMI138 KV GRA-REU1	LINE	All	3/31/2023 9/11/2023	6/8/2023 12/13/2023	
AEP-AP	HANCOCK 138 KV 1-P	XFRM	All	9/11/2023	12/7/2023	
AEP-AP	HANCOCK 34 KV 1-T	XFRM	All	9/11/2023	12/7/2023	
AEP-AP	HANCOCK 69 KV 1-S	XFRM	All	9/11/2023	12/7/2023	
AEP-AP	KAMMER2 765 KV 400	XFRM	All	10/16/2023 12/4/2023 1/29/2024 3/18/2024	12/1/2023 12/4/2023 1/29/2024 3/18/2024	
AEP-IM	23RDSTRE138 KV 23R-WES2	LINE	All	10/2/2023	1/8/2024	

2023/2024 Annual ARR/FTR Outages

Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
AEP-IM	AKSTEEL 138 KV AKS-ROC2	LINE	All	6/22/2023 9/14/2023	7/28/2023 10/16/2023
AEP-IM	ANTHONY 138 KV ANT-ANT2	LINE	All	9/11/2023 1/3/2024	11/10/2023 1/4/2024
AEP-IM	ANTHONYT138 KV ANT-LIN2	LINE	All	9/11/2023 1/3/2024	11/10/2023 1/4/2024
AEP-IM	ANTHONYT138 KV ANT-STA1	LINE	All	9/11/2023 1/3/2024	11/10/2023 1/4/2024
AEP-IM	CONCORD 138 KV CON-TWI	LINE	All	9/18/2023	12/21/2023
AEP-IM	COOK 34 KV 4-T	XFRM	All	4/13/2024	5/15/2024
AEP-IM	COOK 345 KV 4-S	XFRM	All	4/13/2024	5/15/2024
AEP-IM	COOK 345 KV T9	XFRM	All	4/13/2024	5/15/2024
AEP-IM	COOK 765 KV 4-P	XFRM	All	4/13/2024	5/15/2024
AEP-IM	DELAWAIM138 KV DEL-VAN1	LINE	All	1/17/2023	9/22/2023
AEP-IM	EWATERVT138 KV EAS-HAR	LINE	All	4/1/2024	5/31/2024
AEP-IM	GUARDIAN138 KV GUA-TWI1	LINE	All	9/18/2023	12/21/2023
AEP-IM	HODGIN 138 KV HOD-RAN1	LINE	All	1/3/2024	7/15/2024
AEP-IM	JAY 138 KV JAY-PEN1	LINE	All	3/4/2024	6/21/2024
AEP-IM	JEFFERSO765 KV JEF-ROC1	LINE	All	8/14/2023 10/30/2023	9/29/2023 11/3/2023
AEP-IM	MADISON 138 KV MAD-MEA1	LINE	All	9/5/2023 1/22/2024	12/1/2023 3/15/2024
AEP-IM	MEADOW 138 KV MEA-PEN1	LINE	All	9/5/2023	12/1/2023
AEP-IM	MTETNATP69 KV MTE-VAN	LINE	All	8/7/2023	9/22/2023
AEP-IM	OLIVE 345 KV OLI-OLIV	LINE	All	3/1/2023 9/15/2023	6/15/2023 12/31/2023
AEP-IM	PIPECREE138 KV PIP-STR	LINE	All	1/8/2024	10/25/2024
AEP-IM	RANDOLPH12 KV 1-T	XFRM	All	2/5/2024 4/16/2024	2/15/2024 5/23/2024
AEP-IM	RANDOLPH138 KV 1-P	XFRM	All	2/5/2024 4/16/2024	2/15/2024 5/23/2024
AEP-IM	RANDOLPH69 KV 1-S	XFRM	All	2/5/2024 4/16/2024	2/15/2024 5/23/2024
AEP-IM	ROCKPOR2138 KV . 6	XFRM	All	6/22/2023 9/14/2023	7/28/2023 10/16/2023
AEP-IM	ROCKPOR2138 KV 3-S	XFRM	All	6/22/2023 9/14/2023	7/28/2023 10/16/2023
AEP-IM	ROCKPOR234 KV 3-T	XFRM	All	6/22/2023 9/14/2023	7/28/2023 10/16/2023
AEP-IM	ROCKPOR2765 KV 3-P	XFRM	All	6/22/2023 9/14/2023	7/28/2023 10/16/2023
AEP-IM	ROCKPOR2765 KV ROC-ROC3	LINE	All	6/22/2023 9/14/2023	7/28/2023 10/16/2023
AEP-IM	ROCKPWKS765 KV 8	XFRM	All	6/22/2023 9/14/2023	7/28/2023 10/16/2023
AEP-IM	VANBUREN12 KV 1-T	XFRM	All	8/7/2023	9/22/2023

2023/2024 Annual ARR/FTR Outages

Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
AEP-IM	VANBUREN138 KV 1-P	XFRM	All	8/7/2023	9/22/2023
AEP-IM	VANBUREN138 KV VAN-SOR1	LINE	All	8/7/2023	9/22/2023
AEP-IM	VANBUREN69 KV 1-S	XFRM	All	8/7/2023	9/22/2023
AEP-KY	BLUEGRA269 KV BLU-HAZ1	LINE	All	3/13/2023	6/28/2023
AEP-KY	GRAYSBRA69 KV GRA-ARG1	LINE	All	10/2/2023	11/1/2023
AEP-KY	HAZARD 138 KV 2	XFRM	All	3/13/2023	6/28/2023
AEP-KY	HAZARD 161 KV 3	XFRM	All	3/13/2023	6/28/2023
AEP-KY	HAZARD 161 KV HAZ-WOO	LINE	All	3/13/2023	6/28/2023
AEP-KY	HAZARD 69 KV HAZ-JEF	LINE	All	3/13/2023	6/28/2023
AEP-OH	AMLIN 138 KV AML-HYA	LINE	All	6/5/2023 7/3/2023 7/31/2023 8/22/2023 8/28/2023	6/30/2023 7/28/2023 8/1/2023 8/25/2023 8/31/2023
AEP-OH	ANGUIN 138 KV ANG-BAB1	LINE	All	7/31/2023 8/28/2023 11/1/2023	8/3/2023 8/31/2023 1/11/2024
AEP-OH	ASTOR 138 KV AST-BRIC	LINE	All	1/17/2024	5/16/2024
AEP-OH	BEATTY 138 KV BEA-WHI	LINE	All	6/14/2023 12/14/2023	10/4/2023 12/20/2023
AEP-OH	BEATTY 345 KV BEA-GRE1	LINE	All	8/28/2023 4/1/2024	9/1/2023 5/27/2024
AEP-OH	BRICE 138 KV BRI-REFU	LINE	All	3/8/2023 11/22/2023	7/11/2023 11/22/2024
AEP-OH	BROWNHIL69 KV BRO-RAV	LINE	All	8/16/2023 2/28/2024	11/28/2023 5/21/2024
AEP-OH	CANNELVI138 KV CAN-PHI	LINE	All	11/1/2023	10/8/2024
AEP-OH	CANTONCE138 KV CAN-CLO1	LINE	All	11/13/2023	12/1/2023
AEP-OH	CARROLLT138 KV CAR-GAB	LINE	All	1/5/2022 8/4/2023	7/28/2023 12/2/2024
AEP-OH	COSGRAY 345 KV COS-ROBE	LINE	All	1/8/2024	3/28/2024
AEP-OH	EBROAD 138 KV EBR-YEA1	LINE	All	8/21/2023	10/27/2023
AEP-OH	ELIMA 138 KV ELI-HAV1	LINE	All	2/15/2023 9/13/2023 2/14/2024	6/13/2023 12/12/2023 6/11/2024
AEP-OH	ESIDELIM138 KV ESI-NDE1	LINE	All	2/15/2023 9/13/2023 2/14/2024	6/13/2023 12/12/2023 6/11/2024
AEP-OH	EWOOSTER138 KV EWO-CLO1	LINE	All	6/22/2023 11/13/2023	6/22/2023 12/1/2023
AEP-OH	FIFTHAVE138 KV FIF-HES1	LINE	All	9/24/2023	12/5/2023
AEP-OH	GEORGEWA138 KV GEO-KAM	LINE	All	10/2/2023	5/29/2024
AEP-OH	GROVES 138 KV GRO-REF	LINE	All	6/21/2023 11/22/2023	7/11/2023 11/22/2024
AEP-OH	HEDDINGR138 KV HED-FUL1	LINE	All	3/6/2023	10/24/2023
AEP-OH	ISABELLA138 KV ISA-NNEW	LINE	All	11/19/2022	12/1/2024

2023/2024 Annual ARR/FTR Outages						
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day	
AEP-OH	LICK 13 KV 3-T	XFRM	All	6/27/2023	11/9/2023	
AEP-OH	LICK 138 KV 3-P	XFRM	All	6/27/2023	11/9/2023	
AEP-OH	LICK 69 KV 3-S	XFRM	All	6/27/2023	11/9/2023	
AEP-OH	LOCKWOOD138 KV LOC-RIC1	LINE	All	10/25/2023	1/24/2024	
AEP-OH	MARYSVI2765 KV XF2	XFRM	All	8/30/2023 11/29/2023	10/24/2023 12/12/2023	
AEP-OH	REFUGEE 138 KV REF-SHA1	LINE	All	6/21/2023 9/13/2023	7/11/2023 11/22/2024	
AEP-OH	ROBERTS2345 KV T-1	XFRM	All	1/8/2024	3/28/2024	
AEP-OH	STRABURG138 KV STR-WDO	LINE	All	9/12/2023 1/16/2024	9/22/2023 1/26/2024	
AEP-OH	WDOVER 138 KV T1_XF	XFRM	All	9/12/2023	1/26/2024	
AEP-OH	WDOVER 138 KV WDO-BLO1	LINE	All	9/12/2023 1/16/2024 3/4/2024	9/22/2023 1/26/2024 4/13/2024	
AEP-OH	WEFOSTOR138 KV WEF-02W1	LINE	All	10/4/2023	12/8/2023	
APSS	ALBRIGHT138 KV ALB-KIN	LINE	All	6/5/2023 9/15/2023	7/3/2023 12/22/2023	
APSS	BOONSBOR230 KV BOO-FRO	LINE	All	9/4/2023 3/1/2024	9/4/2023 3/15/2024	
APSS	BOONSBOR230 KV T5	XFRM	All	9/4/2023 3/1/2024	9/4/2023 3/15/2024	
APSS	BUTL APS138 KV BUT-KAR	LINE	All	9/18/2023 4/26/2024	10/13/2023 5/4/2024	
APSS	DOUBS 230 KV DOU-FRO	LINE	All	9/4/2023 3/1/2024	9/4/2023 3/15/2024	
APSS	DOUBS 500 KV DOU-GOO	LINE	All	3/1/2024	6/14/2024	
APSS	FROSTOWN230 KV FRO-RIN	LINE	All	9/4/2023	3/15/2024	
APSS	GARFLD_T138 KV GAR-RIN	LINE	All	9/4/2023	3/14/2024	
APSS	GLENFALL138 KV GLE-HAR	LINE	All	6/1/2023 10/30/2023 1/8/2024	6/29/2023 11/10/2023 7/3/2024	
APSS	GREENGAP500 KV GRE-MTS	LINE	All	9/18/2023	10/27/2023	
APSS	HARSNRES138 KV HAR-MAR2	LINE	All	10/30/2023 1/8/2024	11/10/2023 7/3/2024	
APSS	HARSNRES138 KV HAR-ROB	LINE	All	10/30/2023 1/8/2024	11/10/2023 7/3/2024	
APSS	HATFIELD500 KV HAT-RON	LINE	All	9/18/2023	10/20/2023	
APSS	MEADOWBR500 KV MTS-MEA	LINE	All	9/18/2023	10/27/2023	
APSS	RINGGOLD230 KV T4	XFRM	All	9/5/2023	3/15/2024	
APSS	WYLIERID500 KV TRAN 5	XFRM	All	11/15/2023	12/22/2023	
APSS	WYLIERID500 KV TRAN 6	XFRM	All	11/15/2023	12/22/2023	
BC	CONASTON500 KV 500-2	XFRM	All	9/11/2023 10/12/2023	9/15/2023 11/17/2023	

2023/2024 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
BC	FIVEFORK115 KV FIV-ROC1	LINE	All	7/17/2023 8/1/2023 11/6/2023 11/12/2023 1/2/2024 1/15/2024 1/29/2024 2/12/2024 2/26/2024 4/26/2024	7/17/2023 8/1/2023 11/10/2023 11/18/2023 1/5/2024 1/19/2024 2/2/2024 2/16/2024 3/1/2024 5/3/2024
BC	FIVEFORK115 KV FIV-ROC2	LINE	All	7/6/2023 8/3/2023 10/8/2023 10/31/2023 11/12/2023 1/8/2024 1/22/2024 2/5/2024 2/19/2024 5/6/2024	7/6/2023 8/3/2023 10/14/2023 10/31/2023 11/18/2023 1/12/2024 1/26/2024 2/9/2024 2/23/2024 5/6/2024
BC	GOULDST 34 KV GOU-RIV1	LINE	All	9/4/2020	1/3/2025
BC	GOULDST 34 KV GOU-RIV2	LINE	All	9/4/2020	1/3/2025
COMED	101 ITAS138 KV TR81CT-S	XFRM	All	1/22/2024	3/15/2024
COMED	101 ITAS34.5 KV TR81CT-T	XFRM	All	1/22/2024	3/15/2024
COMED	101 ITAS345 KV 12001	LINE	All	1/22/2024	3/15/2024
COMED	101 ITAS345 KV TR81CT-P	XFRM	All	1/22/2024	3/15/2024
COMED	108 LOCK345 KV 10808	LINE	All	1/8/2024	3/15/2024
COMED	112 WILT345 KV TR93CT-S	XFRM	All	3/12/2024	4/22/2024
COMED	112 WILT765 KV TR93CT-P	XFRM	All	3/12/2024	4/22/2024
COMED	115 BEDF138 KV TR83CT-S	XFRM	All	10/30/2023	12/28/2023
COMED	115 BEDF345 KV TR83CT-P	XFRM	All	10/30/2023	12/28/2023
COMED	163 ROSC138 KV 17105 7	LINE	All	9/18/2023	11/22/2023
COMED	174 UNIV138 KV 17401	LINE	All	10/23/2023	12/19/2023
COMED	46 DESPL345 KV 10111 1	LINE	All	1/22/2024	3/15/2024
COMED	K320 138 KV 8604 5	LINE	All	7/15/2021	12/31/2023
CPL	CTYRCKMT230 KV CTY-NASH	LINE	All	11/1/2023 3/1/2024	12/31/2023 6/15/2024
CPL	PERSON4 230 KV 296C	LINE	All	10/2/2023 4/1/2024	10/31/2023 4/30/2024
DAYTON	09AMSTRD138 KV AMS-WMOU	LINE	All	12/21/2022	11/12/2024
DAYTON	09ESIDNY138 KV 09E-09Q1	LINE	All	3/1/2024	4/30/2024
DAYTON	SHELBY 138 KV SHE-09E1	LINE	All	3/1/2024	4/30/2024
DEOK	08CLRMT1138 KV BK1	XFRM	All	10/2/2023 11/13/2023	11/10/2023 12/8/2023
DEOK	08CLRMT1138 KV BK2	XFRM	All	10/2/2023 11/13/2023	11/10/2023 12/8/2023

2023/2024 Annual ARR/FTR Outages						
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day	
DEOK	08CLRMT169 KV 08B-08C2	LINE	All	10/2/2023	11/10/2023	
DEOK	08CLRMT169 KV 08C-TP4	LINE	All	10/2/2023	11/10/2023	
DEOK	MIAMIFOR138 KV MIA-HEB	LINE	All	2/26/2024	5/24/2024	
DEOK	MIAMIFOR69 KV HEB-MIAM	LINE	All	2/26/2024	5/24/2024	
DEOK	REDBANK 138 KV RED-OAK	LINE	All	3/23/2021	12/22/2023	
DEOK	ROCHELLE138 KV 08R-TER1	LINE	All	6/5/2023 4/15/2024	6/9/2023 5/24/2024	
DEOK	TP1783 138 KV 08M-TER1	LINE	All	5/30/2023 10/2/2023 5/5/2024	6/2/2023 10/27/2023 5/10/2024	
DOM-C	CARSON4 230 KV 238A	LINE	All	6/12/2023 7/5/2023	7/2/2023 10/6/2023	
DOM-C	CARSON4 500 KV TX2H	XFRM	All	6/20/2023 9/18/2023 10/9/2023	6/22/2023 9/25/2023 10/11/2023	
DOM-C	CHANCELR500 KV 4	XFRM	All	3/1/2023 9/16/2023	6/14/2023 12/31/2023	
DOM-C	CHANCELR500 KV 581	LINE	All	3/1/2023 9/16/2023	6/14/2023 12/31/2023	
DOM-C	CHAPRLTP230 KV 249B	LINE	All	7/3/2023	10/8/2023	
DOM-C	CHICKHOM230 KV 2075C	LINE	All	9/11/2023 3/1/2024	12/31/2023 6/14/2024	
DOM-C	CHICKHOM500 KV 557A	LINE	All	9/11/2023 3/1/2024	12/31/2023 6/14/2024	
DOM-C	CHICKHOM500 KV TX1	XFRM	All	9/11/2023 3/1/2024	12/31/2023 6/14/2024	
DOM-C	CLOVER 500 KV TX7	XFRM	All	1/3/2024	3/29/2024	
DOM-C	FARMVILL230 KV TX5	XFRM	All	9/25/2023	12/8/2023	
DOM-C	FRDRKSBG230 KV TX6	XFRM	All	6/26/2023	8/3/2023	
DOM-C	FRDRKSBG230 KV TX7	XFRM	All	6/26/2023 8/7/2023	8/3/2023 12/7/2023	
DOM-C	HARWGATE115 KV 100J	LINE	All	6/1/2023 3/19/2024	8/30/2023 4/16/2024	
DOM-C	HENDRICK230 KV HEN-SEDG	LINE	All	10/2/2023 4/1/2024	10/31/2023 4/30/2024	
DOM-C	HULLSTR 230 KV 219C	LINE	All	2/13/2024	4/28/2024	
DOM-C	IRONBRI4230 KV 282B	LINE	All	2/13/2024	4/28/2024	
DOM-C	KEVLAR 115 KV 53A	LINE	All	4/3/2023	9/29/2023	
DOM-C	LADYSMTH500 KV TX1	XFRM	All	9/16/2023	12/31/2023	
DOM-C	NANNA4 500 KV RSS2	XFRM	All	10/30/2023	2/18/2024	
DOM-C	NANNA4 500 KV TX5	XFRM	All	10/30/2023	2/18/2024	
DOM-C	NRTHNECK230 KV 224B	LINE	All	6/12/2023	7/31/2024	
DOM-C	NWEST 115 KV TX7	XFRM	All	6/6/2023	8/17/2023	
DOM-C	NWEST 13 KV TX7T	XFRM	All	6/6/2023	8/17/2023	
DOM-C	NWEST 230 KV TX7H	XFRM	All	6/6/2023	8/17/2023	

2023/2024 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
DOM-C	PIPELINE115 KV 63B	LINE	All	10/2/2023 3/18/2024	12/4/2023 5/18/2024
DOM-C	PLYWOOD 115 KV 151A	LINE	All	2/5/2024	7/26/2024
DOM-C	REYMET 115 KV 72A	LINE	All	6/28/2023	9/29/2023
DOM-C	TWELFTHS115 KV TX2	XFRM	All	10/2/2023 3/18/2024	12/4/2023 5/18/2024
DOM-E	CLBHOUSE230 KV TX1	XFRM	All	8/31/2023	11/10/2023
DOM-E	FENTRES4230 KV FEN-POTY	LINE	All	9/10/2023	7/31/2024
DOM-E	FENTRES4500 KV 588A	LINE	All	9/18/2023	12/1/2023
DOM-E	FENTRES4500 KV TX1	XFRM	All	9/18/2023	12/1/2023
DOM-E	FENTRES4500 KV TX3	XFRM	All	9/18/2023	12/1/2023
DOM-E	LANDSTWN230 KV LAN-POTY	LINE	All	9/10/2023	7/31/2024
DOM-E	LANEXA 230 KV 224A	LINE	All	4/26/2022	7/31/2023
DOM-E	LEBANON4115 KV 58K	LINE	All	5/1/2023	9/15/2023
DOM-E	LGHTFOOT230 KV 2102A	LINE	All	9/11/2023 3/1/2024	12/31/2023 6/14/2024
DOM-E	LITLCREK115 KV 181A	LINE	All	3/11/2024	6/20/2024
DOM-E	LYNNHAVN230 KV 2072A	LINE	All	4/1/2024	5/31/2024
DOM-E	OAKWOOD 115 KV 107A	LINE	All	3/11/2024	6/20/2024
DOM-E	OAKWOOD 115 KV TX2	XFRM	All	3/11/2024	6/20/2024
DOM-E	OAKWOOD 115 KV TX4	XFRM	All	3/11/2024	6/20/2024
DOM-E	OAKWOOD 115 KV TX5	XFRM	All	3/11/2024	6/20/2024
DOM-E	PENINSLA115 KV 42A	LINE	All	3/18/2024	6/27/2024
DOM-E	SURRY4 500 KV 567A	LINE	All	9/11/2023 3/1/2024	12/31/2023 6/14/2024
DOM-N	ARLINGTON230 KV 258A	LINE	All	4/23/2022	4/19/2024
DOM-N	BEAUMEAD230 KV 2116A	LINE	All	11/15/2023	1/15/2024
DOM-N	BRAMBLET230 KV BRA-EVRG	LINE	All	6/12/2023 9/15/2023	6/16/2023 12/15/2023
DOM-N	BULLRUN 230 KV BUL-CLIF	LINE	All	9/11/2023	12/21/2023
DOM-N	DRANESVL230 KV 2062A	LINE	All	6/15/2023	8/6/2023
DOM-N	ELKRUNDP230 KV ELK-ROLN	LINE	All	3/18/2024	5/31/2024
DOM-N	GLEBE 230 KV 2036A1	LINE	All	4/23/2022	4/19/2024
DOM-N	OX4 500 KV 571A	LINE	All	9/17/2023	10/18/2023
DOM-N	PENDER 230 KV 2051A	LINE	All	9/18/2023	12/28/2023
DOM-N	PENTAGON230 KV TX4	XFRM	All	6/27/2023	10/24/2023
DOM-N	POLANDRD230 KV 2183A	LINE	All	6/5/2023 9/15/2023	6/6/2023 12/15/2023
DOM-N	PRINCWIL230 KV 2011C	LINE	All	6/5/2023	8/3/2023
DOM-N	RESTON 230 KV 2010A	LINE	All	6/12/2023	8/25/2024
DOM-N	SHELHORN230 KV TX1	XFRM	All	9/15/2023	2/26/2024
DOM-N	SHELHORN230 KV TX4	XFRM	All	9/15/2023	2/26/2024
DOM-N	TYSONS 230 KV TX1	XFRM	All	5/27/2023	11/8/2023
DOM-N	TYSONS 230 KV TX2	XFRM	All	5/27/2023 10/9/2023	8/3/2023 11/8/2023

2023/2024 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
DOM-N	WALNEY 230 KV 2008C	LINE	All	6/19/2023 6/26/2023 9/15/2023	6/23/2023 6/30/2023 5/15/2024
DOM-S	CAROLINA115 KV 81G	LINE	All	6/12/2023 1/8/2024	6/15/2023 4/24/2024
DOM-S	CAROLINA230 KV 2141	LINE	All	9/11/2023	11/8/2023
DOM-S	CHOWAN 230 KV CHO-WEST	LINE	All	10/10/2023 4/15/2024	11/8/2023 5/14/2024
DOM-S	HATHAWAY230 KV 2058A1	LINE	All	9/15/2023 3/1/2024	12/31/2023 6/15/2024
DOM-S	HATHAWAY230 KV 2181A	LINE	All	9/15/2023	11/15/2023
DOM-S	HOGARDML230 KV TX2	XFRM	All	11/18/2022	12/31/2023
DOM-S	MAPLTNDP115 KV 108C	LINE	All	1/9/2024	7/31/2024
DOM-S	NASH 230 KV TX1	XFRM	All	11/1/2023	11/15/2023
DOM-S	SHILOHDP115 KV 105D	LINE	All	1/2/2024	3/31/2024
DOM-S	TUNIS 115 KV TX2	XFRM	All	1/9/2024	7/31/2024
DOM-W	CLIFTNFG138 KV TX3	XFRM	All	9/18/2023	11/17/2023
DOM-W	CLIFTNFG138 KV TX4	XFRM	All	9/18/2023	11/17/2023
DOM-W	CLIFTNFG138 KV TX6	XFRM	All	9/18/2023	11/17/2023
DOM-W	CLIFTNFG230 KV 2052A	LINE	All	9/18/2023	11/17/2023
DOM-W	CLIFTNFG230 KV TX2	XFRM	All	9/18/2023	11/17/2023
DOM-W	FRKUNION230 KV 2028C	LINE	All	6/5/2023	7/31/2023
DOM-W	LOWMOOR 230 KV TX4	XFRM	All	9/25/2019	1/25/2024
DOM-W	MTSTORM4500 KV 550A	LINE	All	3/6/2023 9/1/2023 3/11/2024	6/30/2023 12/29/2023 6/14/2024
DOM-W	SKIMMER4115 KV 141A	LINE	All	1/3/2023 3/5/2024	9/1/2023 9/9/2024
DOM-W	WSTAUNTN230 KV 293B	LINE	All	10/2/2023	9/16/2024
DPL	AIREY 69 KV AIR-VNL	LINE	All	2/12/2024 2/19/2024 2/26/2024 3/18/2024 4/1/2024	2/16/2024 2/23/2024 3/1/2024 3/20/2024 5/30/2024
DPL	CEDARCRE138 KV CED-CLA	LINE	All	3/11/2024	5/24/2024
DPL	CHURCH 69 KV CHU-MAS	LINE	All	6/12/2023 8/7/2023 8/14/2023 8/21/2023 9/5/2023 9/19/2023 11/27/2023	6/12/2023 8/11/2023 8/18/2023 8/25/2023 9/17/2023 11/21/2023 12/20/2023
DPL	GRSNVILL69 KV GRS-STV	LINE	All	6/7/2023 6/13/2023 12/4/2023 3/4/2024	6/7/2023 6/13/2023 12/22/2023 3/22/2024

2023/2024 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
DPL	STVNSVIL69 KV STV-WYE	LINE	All	3/6/2023 6/6/2023 6/14/2023 9/11/2023 3/4/2024	6/2/2023 6/6/2023 6/14/2023 12/22/2023 5/31/2024
DPL	VIENNA 69 KV VIE-VNL1	LINE	All	2/12/2024 2/19/2024 2/26/2024 3/18/2024 4/1/2024	2/16/2024 2/23/2024 3/1/2024 3/20/2024 5/30/2024
DUQU	ARSENAL 345 KV ARS-BRU1	LINE	All	10/30/2023	11/17/2023
DUQU	ARSENAL 345 KV ARS-BRU2	LINE	All	10/30/2023	11/17/2023
DUQU	ARSENAL 345 KV ARS-CAR	LINE	All	10/30/2023	11/17/2023
DUQU	ARSENAL 345 KV ARS-LOG	LINE	All	10/30/2023	11/17/2023
DUQU	ARSENAL 345 KV T1	XFRM	All	10/30/2023	11/17/2023
DUQU	BRUNOTIS138 KV BRU-MON	LINE	All	9/15/2023	5/31/2024
DUQU	BRUNOTIS138 KV BRU-NEV	LINE	All	9/15/2023	5/31/2024
DUQU	BRUNOTIS345 KV BRU-TEC	LINE	All	10/30/2023	11/17/2023
DUQU	BRUNOTIS345 KV T1	XFRM	All	10/30/2023	11/17/2023
DUQU	CARS DUQ345 KV CAR-TEC	LINE	All	10/30/2023	11/17/2023
DUQU	CARS DUQ345 KV T1	XFRM	All	10/30/2023	11/17/2023
DUQU	LOGANSFE345 KV TRAN1	XFRM	All	10/30/2023	11/17/2023
DUQU	NEVILLE 138 KV NEV-NEV	LINE	All	9/15/2023	5/31/2024
DUQU	NEVILTAP138 KV NEV-SEW	LINE	All	9/15/2023	5/31/2024
EKPC	ARGNT_EK138 KV XF187	XFRM	All	8/29/2023	11/1/2023
EKPC	ARGNT_EK69 KV ARG-LOWG	LINE	All	10/2/2023	11/1/2023
EKPC	BIGBONE 69 KV BIG-BOON	LINE	All	5/22/2023	10/20/2023
EKPC	CONWAYJ 69 KV THR-CNWJ	LINE	All	1/17/2023	9/1/2023
EKPC	DUNCANLN69 KV DUN-FAW	LINE	All	9/1/2023	8/30/2024
EKPC	JACKSNVL138 KV PAR-JACK	LINE	All	12/4/2023	3/28/2024
EKPC	MAGNOLI269 KV MAG-SMRS	LINE	All	6/28/2022	10/20/2023
EKPC	MUNK 69 KV MUN-OAK9	LINE	All	4/10/2023	8/11/2023
FECL	EASTLAKE138 KV EAS-02L1	LINE	All	9/14/2023	12/15/2023
FECL	EASTLAKE138 KV EAS-04M1	LINE	All	9/14/2023	12/15/2023
FECL	JENNING 138 KV JEN-LTV7	LINE	All	1/24/2020	12/31/2025
FECL	LEROYCEN138 KV LER1-PIN	LINE	All	10/19/2023	2/6/2024
FECL	LEROYCEN138 KV LER2-PIN	LINE	All	10/17/2023	2/4/2024
FECL	LLOYD 138 KV 2	XFRM	All	9/14/2023	12/15/2023
FECL	SPRUCE 138 KV SPR-04L2	LINE	All	10/19/2023	2/6/2024
FEOE	BEAVER 345 KV BEA-LAK2	LINE	All	9/18/2023	10/15/2023
FEOE	BEAVER 345 KV TR2	XFRM	All	9/18/2023	10/15/2023
FEOE	CLOVEROE138 KV CLO-LEGE	LINE	All	11/13/2023 12/4/2023 12/11/2023	12/1/2023 12/8/2023 12/15/2023
FEOE	CLOVEROE138 KV CLO-ROS1	LINE	All	6/29/2023 11/13/2023	6/29/2023 12/1/2023

2023/2024 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
FEOE	LAKVIEW 138 KV LAK-OTT1	LINE	All	10/2/2023	12/8/2023
FEPA	SHENANGO345 KV 1	XFRM	All	11/13/2023	12/1/2023
FETE	02BRIM 138 KV 02B-BTAP	LINE	All	10/23/2023	12/1/2023
FETE	02BRIM 138 KV BRI-LEMO	LINE	All	10/23/2023	12/1/2023
FETE	DOWLING 345 KV DOW-LEM1	LINE	All	9/18/2023	12/8/2023
FETE	GARLING 138 KV GAR-WOOD	LINE	All	9/15/2023	12/1/2023
FETE	LEMOYNE2138 KV LEM-BTAP	LINE	All	10/23/2023 12/4/2023	12/1/2023 12/29/2023
FETE	MIDWAYTE138 KV MID-BTAP	LINE	All	10/23/2023	12/1/2023
JC-N	EFLEMING230 KV BK 4TR	XFRM	All	10/3/2023	11/15/2023
JC-N	ELASTIMO230 KV ELA-POH	LINE	All	9/18/2023	11/3/2023
JC-N	KITTATIN230 KV KIT-POH	LINE	All	9/18/2023	11/3/2023
JC-N	MORRISTO230 KV MOR-STO	LINE	All	8/21/2023	10/13/2023
JC-N	POHATCON230 KV TR1	XFRM	All	9/18/2023	11/3/2023
JC-N	STON JC 230 KV STO-WHI2	LINE	All	8/21/2023	10/13/2023
JC-S	EWINDSOR500 KV BK 2TR	XFRM	All	10/30/2023	11/17/2023
JC-S	NEJESCO 230 KV NEJ-SAY	LINE	All	9/18/2023	12/19/2023
JC-S	NEJESCO 230 KV NEJ-WER	LINE	All	9/18/2023 3/22/2024	12/19/2023 5/9/2024
JC-S	WERNER 230 KV 13	XFRM	All	9/18/2023 3/22/2024	12/19/2023 5/9/2024
ME	CLY 115 KV CLY-COL	LINE	All	10/4/2023	12/2/2023
ME	CLY 115 KV CLY-NEW	LINE	All	10/4/2023	12/2/2023
ME	CLY 115 KV CLY-YOR	LINE	All	9/18/2023 10/10/2023	10/3/2023 11/14/2023
ME	CROSSROA115 KV CRO-WIN	LINE	All	10/24/2023	11/29/2023
ME	GITTSRUN115 KV GIT-NHA5	LINE	All	9/28/2023 10/27/2023	9/28/2023 12/18/2023
ME	HUNTERST500 KV HUN-VIN	LINE	All	6/8/2023 10/30/2023 4/1/2024	6/8/2023 12/2/2023 5/10/2024
ME	MIDDLJCT115 KV MID-YOR8	LINE	All	9/18/2023 10/10/2023	10/3/2023 11/14/2023
ME	PROPEME115 KV PRO-YOR	LINE	All	10/9/2023 11/16/2023	10/27/2023 11/22/2023
ME	WIND ME 115 KV WIN-YOE	LINE	All	10/24/2023	11/29/2023
ME	YOE 115 KV YOE-YOR2	LINE	All	10/24/2023	11/29/2023
ME	YORKANA 230 KV BANK 1	XFRM	All	10/2/2023 11/16/2023	10/20/2023 11/22/2023
NXTERA	GRACOLIV345 KV GRA-GREE	LINE	All	10/26/2023	12/31/2023
NXTERA	GRACOLIV345 KV GRA-OLIV	LINE	All	9/15/2023	12/31/2023
NXTERA	OLIVUNPA345 KV OLI-UNPA	LINE	All	3/1/2023 9/15/2023	6/15/2023 12/31/2023
PE	CIVIC 69 KV CIV-UNIV	LINE	All	10/7/2023	12/1/2023
PE	ISLANDRD69 KV ISL-SCH	LINE	All	5/28/2023 10/7/2023	6/13/2023 12/1/2023

2023/2024 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
PE	MASTER 230 KV MAS-NPH	LINE	All	1/2/2024	1/19/2024
PE	NPHILADE230 KV NP 8TR	XFRM	All	9/25/2023 1/2/2024	9/29/2023 1/19/2024
PE	PEACHBOT500 KV PEA-TMI	LINE	All	9/18/2023 10/27/2023	10/17/2023 10/28/2023
PE	SCHUYLKI69 KV SCH-UNI	LINE	All	6/13/2023 10/7/2023	6/13/2023 12/1/2023
PE	UNIVERSI69 KV 3TR	XFRM	All	6/13/2023 10/7/2023	6/13/2023 12/1/2023
PEP	12THST 69 KV 12T-BEN8	LINE	All	8/31/2023	11/30/2023
PEP	BOWIE 230 KV BOW-BUR3	LINE	All	5/31/2023 9/20/2023	8/30/2023 12/22/2023
PEP	BRIGHTON230 KV BRI-BUR5	LINE	All	9/8/2023	12/7/2023
PEP	BURCHESH230 KV BUR-PAL0	LINE	All	11/2/2020	12/31/2023
PEP	BURTONSV230 KV BUR-MET0	LINE	All	9/8/2023	12/7/2023
PEP	BURTONSV230 KV BUR-OAK5	LINE	All	9/8/2023	12/7/2023
PEP	BUZZARD 138 KV BUZ-WAT2	LINE	All	1/20/2023 9/5/2023	6/22/2023 10/20/2023
PEP	BUZZARD 138 KV BUZ-WAT3	LINE	All	1/20/2023	6/22/2023
PEP	BUZZARD 230 KV BUZ-RIT	LINE	All	1/20/2023	6/22/2023
PEP	BUZZARD 230 KV STAB-7-	XFRM	All	1/20/2023 9/5/2023	6/22/2023 10/20/2023
PEP	DICKERSH230 KV DIC-DIC3	LINE	All	10/23/2023 11/13/2023	11/10/2023 11/30/2023
PEP	HAWKINS 230 KV HAW-OAK7	LINE	All	9/16/2023	5/31/2025
PEP	METZTAP 230 KV 163-1T	XFRM	All	9/8/2023	12/7/2023
PEP	METZTAP 230 KV MET-TAK8	LINE	All	9/8/2023	12/7/2023
PEP	OAKGROVE230 KV OAK-TAL7	LINE	All	9/16/2023	5/31/2025
PEP	PALMERS 230 KV 084-4T	XFRM	All	11/2/2020	12/31/2023
PEP	TAKOMA 230 KV 027-10T	XFRM	All	9/8/2023	12/7/2023
PEP	TAKOMA 230 KV 027-8T	XFRM	All	9/8/2023	12/7/2023
PL-N	BERCON 69 KV BER-BERW	LINE	All	7/10/2023	8/25/2023
PL-N	BERCON 69 KV BER-WBER	LINE	All	7/10/2023 9/26/2023	9/11/2023 11/20/2023
PL-N	BERWICK 69 KV BER-SAL1	LINE	All	7/10/2023	8/25/2023
PL-N	ELIMSPOR230 KV ELI-LYC3	LINE	All	5/1/2023	9/15/2023
PL-N	LACKAWAN230 KV LAC-SUM1	LINE	All	9/18/2023	3/15/2024
PL-N	LYCOMING230 KV 3	XFRM	All	5/1/2023	9/15/2023
PL-N	MILTON 230 KV MIL-MON	LINE	All	6/2/2023 10/9/2023	9/11/2023 11/3/2023
PL-N	MILTON 230 KV MIL-SUN	LINE	All	7/10/2023	8/23/2024
PL-N	PRODUCTS69 KV PRO-WBER	LINE	All	7/10/2023 9/26/2023 11/27/2023	9/11/2023 11/20/2023 3/15/2024
PL-S	ALBURTIS500 KV ALB-BRA	LINE	All	9/18/2023	12/13/2023

2023/2024 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
PL-S	CUMB PL 230 KV 2	XFRM	All	8/1/2023 1/2/2024	12/29/2023 6/7/2024
PL-S	CUMB PL 230 KV CUM-JUN	LINE	All	8/1/2023 1/2/2024	12/29/2023 6/7/2024
PL-S	DAUPHIN 230 KV 2	XFRM	All	7/10/2023 3/1/2024	7/10/2023 5/31/2024
PL-S	DAUPHIN 230 KV DAU-JUN	LINE	All	3/1/2024	5/31/2024
PL-S	FACEROCK115 KV 1	XFRM	All	9/5/2023	12/20/2023
PL-S	FACEROCK115 KV 2	XFRM	All	9/5/2023	12/20/2023
PL-S	FACEROCK115 KV FAC-FIV1	LINE	All	9/5/2023	12/20/2023
PL-S	FACEROCK69 KV FAC-MIL1	LINE	All	6/9/2023 11/16/2023	6/13/2023 4/19/2024
PL-S	MARTINSC230 KV MAR-NOR	LINE	All	9/21/2023	11/14/2023
PL-S	SAKRON 230 KV 5	XFRM	All	8/21/2023 10/13/2023	8/22/2023 12/7/2023
PN	ALTOONA 230 KV T2	XFRM	All	9/19/2023	12/5/2023
PN	CARL PN 115 KV CAR-GAR	LINE	All	9/18/2023 11/15/2023	10/13/2023 12/2/2023
PN	DUBOIS 115 KV DUB-HAR	LINE	All	9/25/2023 10/30/2023	10/20/2023 11/22/2023
PN	ETOWANDA115 KV ETO-NME	LINE	All	9/15/2022 9/18/2023 3/1/2024	6/14/2023 12/29/2023 5/31/2024
PN	HOMERCIT23 KV N.AUTO-T	XFRM	All	9/14/2023	12/15/2023
PN	HOMERCIT230 KV HOM-SEW	LINE	All	9/18/2023	10/27/2023
PN	HOMERCIT230 KV N.AUTO-S	XFRM	All	9/14/2023	12/15/2023
PN	HOMERCIT345 KV HOM-MAI	LINE	All	9/14/2023	12/15/2023
PN	HOMERCIT345 KV N.AUTO-P	XFRM	All	9/14/2023	12/15/2023
PN	SEWARD 230 KV 9 TX	XFRM	All	4/10/2023	10/10/2023
PN	SHELOCTA230 KV NO2	XFRM	All	9/19/2023	11/10/2023
PN	STROY 115 KV TX1	XFRM	All	9/23/2022	11/3/2023
PS-N	49STREET230 KV 49T-HOBR	LINE	All	10/2/2023 12/4/2023 1/19/2024 1/22/2024 2/15/2024 3/25/2024	10/27/2023 12/8/2023 1/19/2024 2/3/2024 2/26/2024 3/29/2024
PS-N	49STREET230 KV 49T-NBE	LINE	All	10/2/2023 12/4/2023 1/19/2024 1/22/2024 2/15/2024 3/25/2024	10/27/2023 12/8/2023 1/19/2024 2/3/2024 2/26/2024 3/29/2024
PS-N	ATHENIA 230 KV 220-1	XFRM	All	9/15/2023	2/29/2024

2023/2024 Annual ARR/FTR Outages					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
PS-N	BERGEN 230 KV BER-NBE3	LINE	All	10/2/2023 12/4/2023 1/19/2024 1/22/2024 2/15/2024 3/25/2024	10/27/2023 12/8/2023 1/19/2024 2/3/2024 2/26/2024 3/29/2024
PS-N	BRANCHBU230 KV BRA-EFL	LINE	All	10/3/2023	11/15/2023
PS-N	HUDSON 345 KV 345-1	XFRM	All	1/15/2018	12/31/2023
PS-N	MCCARTER230 KV MCC-WOR	LINE	All	9/15/2023	12/1/2023
PS-S	BURLINGT230 KV BUR-CINA	LINE	All	9/18/2023 11/23/2023	10/17/2023 12/23/2023
PS-S	BURLINGT230 KV BUR-CRO	LINE	All	11/25/2023	12/16/2023
PS-S	CAMDEN 230 KV CAM-CINA	LINE	All	9/18/2023 11/23/2023	10/17/2023 12/23/2023
PS-S	HOPECREE500 KV HOP-RED	LINE	All	9/20/2023 3/30/2024	10/20/2023 4/29/2024
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