

## 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 2018/2019 Annual ARR Allocation and FTR Auction.

<b>2018/2019 Annual ARR/FTR Outages</b>					
Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
AE	CARDIFF 230 KV CAR-CED	LINE	All	2/25/2019	4/19/2019
AE	CHURCHTO230 KV CHU-ORC	LINE	All	11/24/2018 4/25/2019	12/7/2018 6/6/2019
AE	CORSON 69 KV COR-SEA7	LINE	All	11/26/2018	5/6/2019
AE	DOROTHY 138 KV DOR-LEW	LINE	All	1/7/2019	4/30/2019
AE	HIGBEE 69 KV HIG-LEWI	LINE	All	10/1/2018	1/6/2019
AE	LAKEAVEN69 KV LAK-MIDT	LINE	All	10/15/2018	2/15/2019
AE	LANDIS 138 KV LAN-UPP	LINE	All	9/17/2018	1/6/2019
AE	LEWIS 138 KV LEW-MIN2	LINE	All	9/17/2018	4/30/2019
AE	MICKLETO69 KV MIC-VAL	LINE	All	9/17/2018	2/8/2019
AE	MONSANTO69 KV MON-RIV	LINE	All	1/24/2019	2/6/2019
AE	SICKLER 69 KV SIC-TAN	LINE	All	9/4/2018 10/15/2018	10/1/2018 5/6/2019
AEP	ADAMSAEP138 KV ADA-WAR	LINE	All	9/10/2018 3/4/2019	12/7/2018 5/31/2019
AEP	ALBIONIM138 KV ALB-EGE1	LINE	All	4/23/2018	7/7/2018
AEP	AMOS 765 KV AMO-MOU1	LINE	All	10/22/2018	12/13/2018
AEP	BETHEL2 138 KV BET-ROB1	LINE	All	10/8/2018	12/7/2018
AEP	BEVERLY2345 KV BEV-HOL	LINE	All	4/1/2019	5/31/2019
AEP	BIGGRAVE138 KV BIG-GEO1	LINE	All	9/4/2018 3/4/2019 4/15/2019	9/28/2018 4/12/2019 5/24/2019
AEP	BLUERACE138 KV BLU-SUM	LINE	All	6/11/2018 9/10/2018	10/19/2018 12/7/2018
AEP	BOSSERMN138 KV BOS-OLI	LINE	All	3/26/2018	10/26/2018
AEP	BUCKHORN138 KV BUC-TAZ1	LINE	All	8/1/2018	11/1/2018

Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
AEP	BUCKSKIN69 KV BUC-PET1	LINE	All	9/3/2018 2/25/2019	12/7/2018 5/31/2019
AEP	CARROLLT138 KV CAR-SUN1	LINE	All	7/9/2018	6/28/2019
AEP	CATAWBA 138 KV CAT-KIM1	LINE	All	4/5/2018	8/10/2018
AEP	CHATFIEL138 KV CHA-HOW1	LINE	All	9/17/2018	12/7/2018
AEP	CLINTOCS138 KV CLI-KAR1	LINE	All	9/17/2018	12/7/2018
AEP	COPPERMI69 KV COP-ZAN	LINE	All	9/10/2018	11/9/2018
AEP	CORRIDOR345 KV COR-JUG	LINE	All	9/17/2018 3/5/2019	12/28/2018 5/24/2019
AEP	CULLODE2765 KV CUL-WYO1	LINE	All	3/4/2019 4/8/2019	3/22/2019 6/6/2019
AEP	DALEVILL138 KV DAL-MAD1	LINE	All	9/17/2018	12/12/2018
AEP	DELAWAIM138 KV DEL-MOD1	LINE	All	11/27/2018	5/24/2019
AEP	DELAWAIM138 KV DEL-SEL1	LINE	All	11/27/2018	12/17/2019
AEP	DEQUINE 345 KV DEQ-EUG1	LINE	All	9/17/2018	2/22/2019
AEP	DESOTO 138 KV DES-ROY1	LINE	All	9/24/2018	12/12/2018
AEP	DIAMOND 138 KV DIA-LIG1	LINE	All	9/11/2018	12/7/2018
AEP	DUCKCREE138 KV DUC-MIL	LINE	All	7/10/2018	10/8/2018
AEP	DUMONT2 765 KV DUM-GRE1	LINE	All	10/1/2018	11/30/2018
AEP	ELIMA 138 KV ELI-HAV1	LINE	All	9/4/2018	2/28/2019
AEP	GAY 138 KV GAY-MCC1	LINE	All	11/5/2018 4/15/2019	12/21/2018 5/31/2019
AEP	GLENLYN 138 KV GLE-KIM1	LINE	All	4/5/2018	8/10/2018
AEP	GOODHOPE138 KV GOO-HAR1	LINE	All	5/28/2018 10/11/2018	6/22/2018 6/27/2019
AEP	HAYDEN 345 KV HAY-ROB2	LINE	All	9/10/2018 3/4/2019	12/31/2018 6/7/2019
AEP	HAZARD 161 KV HAZ-WOO	LINE	All	8/27/2018 3/18/2019	9/13/2018 12/20/2019
AEP	HEDDINGR138 KV HED-FUL1	LINE	All	9/5/2018 2/5/2019	12/21/2018 5/31/2019
AEP	ITALIANV138 KV ITA-STC	LINE	All	9/4/2018	11/2/2018
AEP	KAMMER2 138 KV KAM-ORM2	LINE	All	12/4/2014	1/25/2019
AEP	KAMMER2 138 KV KAM-ORM3	LINE	All	12/4/2014	1/25/2019
AEP	KAMMER2 138 KV KAM-ORM4	LINE	All	12/4/2014	1/25/2019
AEP	KAMMER2 765 KV KAM-VAS	LINE	All	9/17/2018	10/5/2018
AEP	MONEL 138 KV MON-REU1	LINE	All	3/25/2019	6/13/2019
AEP	MUSKING2138 KV MUS-SCA1	LINE	All	4/11/2019	5/12/2019

Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
AEP	NBRISTOL138 KV NBR-WOL1	LINE	All	8/20/2018 4/22/2019	11/8/2018 6/15/2019
AEP	PIGEONRI69 KV PIG-STU	LINE	All	3/11/2019 4/1/2019	3/28/2019 5/24/2019
AEP	ROCKPOR2765 KV ROC-SUL1	LINE	All	4/22/2019	5/31/2019
AEP	SCIOTOTR138 KV SCI-SCI1	LINE	All	9/10/2018 11/5/2018	11/2/2018 12/31/2018
AEP	SCOTTSVI138 KV SCO-BRE1	LINE	All	9/17/2018	11/9/2018
AEP	SWLIMA 138 KV SWL-WLI1	LINE	All	9/10/2018	12/6/2018
AEP	VANBUREN138 KV VAN-SOR1	LINE	All	6/4/2018 1/3/2019 5/6/2019	12/28/2018 5/3/2019 7/3/2019
AEP-AP	CHEMICAL138 KV . 1	XFMR	All	9/29/2017	12/31/2018
AEP-AP	CLOVERD2500 KV T16	XFMR	All	7/30/2018	11/21/2018
AEP-AP	KANAWHAR345 KV . B	XFMR	All	9/10/2018	11/30/2018
AEP-AP	SBLUEFIE138 KV SBL-TOW	LINE	All	12/28/2017	11/20/2018
AEP-AP	TRISTATE345 KV 1	XFMR	All	11/16/2018	3/28/2019
AEP-IM	DESOTO 345 KV . 1	XFMR	All	9/18/2018	12/12/2018
AEP-IM	JEFFERSO765 KV XF2	XFMR	All	11/5/2018	11/16/2018
AEP-KY	HAZARD 161 KV 3	XFMR	All	8/27/2018 3/18/2019	9/13/2018 12/20/2019
AEP-OH	BLGR PJM345 KV BLG-BUC3	LINE	All	8/29/2017	12/31/2021
AEP-OH	GABLESW 138 KV GAB-TID	LINE	All	6/25/2018	10/29/2018
AEP-OH	HYATTCS 345 KV 1A	XFMR	All	12/5/2018	4/5/2019
AEP-OH	HYATTCS 345 KV 1B	XFMR	All	12/5/2018	4/5/2019
AEP-OH	LOGTOWN 138 KV LOG-NDEL	LINE	All	9/4/2018	2/28/2019
AEP-OH	MELMORE 138 KV MEL-STI	LINE	All	9/17/2018	12/7/2018
AEP-OH	NEWCOMER138 KV 1-P	XFMR	All	9/17/2018	12/14/2018
AEP-OH	ROBERTS2345 KV 2-P	XFMR	All	9/10/2018 3/4/2019	12/31/2018 6/7/2019
AEP-OH	TIDD_AEP13 KV B-T	XFMR	All	6/25/2018	10/29/2018
AEP-OH	TIDD_AEP13 KV C-T	XFMR	All	10/29/2018	11/29/2018
AEP-OH	TIDD_AEP138 KV B-S	XFMR	All	2/9/2017	12/31/2020
AEP-OH	TIDD_AEP138 KV C-S	XFMR	All	10/29/2018	11/29/2018
AEP-OH	TIDD_AEP345 KV B-P	XFMR	All	2/9/2017	12/31/2020
AEP-OH	TIDD_AEP345 KV C-P	XFMR	All	10/29/2018	4/18/2019
APSS	CATOCTIN138 KV CAT-RIN	LINE	All	3/4/2019	5/15/2020
APSS	HATFIRES138 KV HATR-LAR	LINE	All	1/18/2018	12/30/2030

Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
BC	BESTGATE115 KV 110-1	XFMR	All	4/16/2018 9/4/2018	6/30/2018 11/21/2018
BC	BESTGATE115 KV BES-BES3	LINE	All	4/16/2018 9/4/2018	6/30/2018 11/21/2018
BC	CONASTON500 KV CNS-PEA	LINE	All	10/14/2018 11/10/2018	10/24/2018 11/22/2018
BC	RIVERSID115 KV 115012	LINE	All	3/1/2019	6/1/2019
BC	RIVERSID230 KV 230-2	XFMR	All	3/1/2019	6/1/2019
BC	TIPTON 230 KV 220-1	XFMR	All	12/12/2017	9/1/2018
CIN	GREENTO2138 KV 2-T	XFMR	All	9/24/2018	10/26/2018
CIN	GREENTO2230 KV 2-S	XFMR	All	9/24/2018	10/26/2018
CIN	GREENTO2765 KV 2-P	XFMR	All	9/24/2018	10/26/2018
COMED	12 DRES345 KV 8014	LINE	All	9/28/2018	11/2/2018
COMED	13 CRAWF345 KV 1310	LINE	All	9/24/2018	11/3/2018
COMED	13304 138 KV 133-ROCK	LINE	All	10/8/2018	12/28/2018
COMED	155 NELS345 KV 15503	LINE	All	3/18/2019	4/5/2019
COMED	171 WEMP345 KV 0624	LINE	All	9/11/2018	9/26/2018
COMED	76 BLUE 138 KV TR82CT-S	XFMR	All	1/25/2019	4/1/2019
CONS	ARGENTA2345 KV ANG-DUM	LINE	All	4/15/2019	5/31/2019
DAYTON	HUTCHING138 KV HUT-MID	LINE	All	3/5/2019	5/31/2019
DAYTON	STUART2 13.8 KV BK7-T	XFMR	All	10/8/2018	10/29/2018
DAYTON	STUART2 13.8 KV BKA1-2	XFMR	All	10/8/2018	10/29/2018
DAYTON	STUART2 138 KV BK7-S	XFMR	All	10/8/2018	10/29/2018
DAYTON	STUART2 345 KV BK7-P	XFMR	All	10/8/2018	10/29/2018
DEOK	BECKJORD138 KV 1	XFMR	All	1/14/2019	3/29/2019
DEOK	CUMMIVL 138 KV 08C-08M3	LINE	All	10/1/2018 2/4/2019	10/26/2018 4/19/2019
DEOK	MIAMIFOR138 KV MIA-08M2	LINE	All	11/19/2018	12/31/2018
DEOK	MIAMIFOR138 KV MIA-CLI1	LINE	All	11/19/2018	12/31/2018
DEOK	MIAMIFOR138 KV MIA-HEB	LINE	All	11/19/2018	12/31/2018
DEOK	MIAMIFOR345 KV MIA-TER1	LINE	All	11/26/2018	12/21/2018
DEOK	REDBANK 345 KV RED-SIL1	LINE	All	3/4/2019	3/29/2019
DEOK	SILVERGR345 KV 23	XFMR	All	2/25/2019	5/31/2019
DOM-C	ACCA 115 KV 159A2	LINE	All	10/1/2018	12/21/2018
DOM-C	BASIN 115 KV 24A	LINE	All	8/13/2018	11/16/2018
DOM-C	BEECHDP 115 KV 90C1	LINE	All	9/16/2018	6/15/2019
DOM-C	BEECHDP 115 KV 90D	LINE	All	9/16/2018	6/15/2019
DOM-C	BRUNSSWY500 KV 585A	LINE	All	3/1/2018 9/16/2018	6/15/2018 12/31/2018

Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
DOM-C	CARSON4 500 KV 585A1	LINE	All	3/1/2018	6/15/2018
DOM-C	CHASECTY115 KV 1009A	LINE	All	1/15/2018	8/15/2018
DOM-C	CHICKHOM500 KV TX1	XFMR	All	8/5/2018	12/21/2018
DOM-C	CLOVER 500 KV 556B	LINE	All	9/17/2018	11/19/2018
DOM-C	CLOVER 500 KV TX7	XFMR	All	9/17/2018	11/19/2018
DOM-C	CLOVER 500 KV TX8	XFMR	All	9/17/2018	11/19/2018
DOM-C	CLOVER 500 KV TX9	XFMR	All	9/17/2018	11/19/2018
DOM-C	EMPORADP115 KV 130C	LINE	All	10/8/2018 12/17/2018	12/14/2018 4/12/2019
DOM-C	MANCHSTR115 KV 157A	LINE	All	5/7/2018	9/13/2018
DOM-C	WHITESTN115 KV 65A	LINE	All	1/11/2017	12/9/2018
DOM-E	CRANYISL230 KV 257A	LINE	All	1/13/2019	5/31/2019
DOM-E	CRANYISL230 KV 257C	LINE	All	1/13/2019	5/31/2019
DOM-E	DAVISCNR115 KV 166A	LINE	All	9/18/2018	12/1/2018
DOM-E	DAVISCNR115 KV 67D	LINE	All	9/18/2018	12/1/2018
DOM-E	GRAFTON4115 KV 58J	LINE	All	5/21/2018	9/23/2018
DOM-E	GREENWCH115 KV 120A	LINE	All	9/18/2018	12/1/2018
DOM-E	LEBANON4115 KV 58H	LINE	All	5/21/2018	9/23/2018
DOM-E	LEEHAL 115 KV 58I	LINE	All	5/21/2018	9/23/2018
DOM-E	REEVESAV115 KV 51B	LINE	All	1/16/2018 10/30/2018	7/6/2018 12/13/2018
DOM-E	REEVESAV115 KV TX3	XFMR	All	10/30/2018	12/13/2018
DOM-E	REEVESAV230 KV TX5	XFMR	All	10/30/2018	12/13/2018
DOM-E	SEPTA4 500 KV 579A1	LINE	All	3/3/2019	3/14/2019
DOM-E	SEWELLPT230 KV 257D	LINE	All	1/13/2019	5/31/2019
DOM-E	SURRY4 500 KV 567A	LINE	All	10/29/2018	11/26/2018
DOM-E	TANNERPT230 KV 257B	LINE	All	1/13/2019	5/31/2019
DOM-E	WALLER 115 KV 58C	LINE	All	10/1/2018 3/11/2019	10/30/2018 6/2/2019
DOM-E	WALLER 115 KV 58D	LINE	All	10/1/2018 3/11/2019	10/30/2018 6/2/2019
DOM-E	YORKTOW4115 KV 34D	LINE	All	7/11/2016	5/31/2019
DOM-N	BRAMBLET500 KV 590A	LINE	All	3/17/2019	3/28/2019
DOM-N	CLIFTON 500 KV TX1	XFMR	All	9/17/2018	11/9/2018
DOM-N	CRYSTAL4230 KV 276A	LINE	All	9/5/2018	12/12/2018
DOM-N	CRYSTAL4230 KV TX2	XFMR	All	9/5/2018	12/12/2018
DOM-N	CRYSTAL4230 KV TX4	XFMR	All	9/5/2018	12/12/2018
DOM-N	CTRYCLDP115 KV 145C	LINE	All	7/16/2018	8/25/2019
DOM-N	PENTAGON69 KV 174A	LINE	All	5/31/2018	10/1/2018

Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
DOM-N	POSSUMP4115 KV 145A	LINE	All	7/16/2018	8/25/2019
DOM-N	SMOKTNDP115 KV 145D	LINE	All	2/4/2019	8/25/2019
DOM-S	CAROLINA115 KV 130A	LINE	All	6/4/2018 3/11/2019	10/5/2018 5/25/2019
DOM-S	CAROLINA115 KV 81G	LINE	All	3/11/2019	5/25/2019
DOM-S	KITTYHWK230 KV TX3	XFMR	All	9/10/2018	12/14/2018
DOM-S	LKGASTON115 KV 90A	LINE	All	3/11/2019	5/25/2019
DOM-S	MACKEYS 230 KV TX2	XFMR	All	3/24/2019	5/23/2019
DOM-S	WASHNTDP115 KV 82B2	LINE	All	7/2/2018	6/24/2019
DOM-S	WHARTON4115 KV 82A	LINE	All	7/2/2018	6/24/2019
DOM-W	BREMO4 138 KV TX8A	XFMR	All	9/17/2018	11/9/2018
DOM-W	DOOMS4 500 KV 534A	LINE	All	9/2/2018 1/2/2019	12/29/2018 5/3/2019
DOM-W	LEXINGTN500 KV 547A	LINE	All	4/23/2019	5/10/2019
DPL	CARRCROF138 KV CAR-WWI	LINE	All	10/1/2018	12/31/2018
DPL	CEDARCRE230 KV CED-MIL	LINE	All	9/4/2018	12/31/2018
DPL	CLAYMONT230 KV AT20	XFMR	All	8/6/2018	10/29/2018
DPL	CLAYMONT69 KV CLA-NAA	LINE	All	8/6/2018	10/29/2018
DPL	COSTEN 138 KV COS-POC	LINE	All	9/17/2018	10/5/2018
DPL	FAIRMONT69 KV FAI-HAR	LINE	All	9/3/2018	12/31/2018
DPL	GRSNVILL69 KV GRS-STV	LINE	All	8/20/2018	10/29/2018
DPL	HARMONY 138 KV HAR-KIA	LINE	All	6/11/2018 9/10/2018	7/16/2018 12/15/2018
DPL	HEBRON 69 KV HEB-ROC	LINE	All	2/1/2019	6/30/2019
DPL	INDIANRI230 KV IND-PIN	LINE	All	9/10/2018	11/16/2018
DPL	MARDELA 69 KV MAR-VIE	LINE	All	1/1/2019	5/31/2019
DPL	MTHERMON69 KV MTH-NSA	LINE	All	10/1/2018	12/7/2018
DPL	PINEYGRO230 KV AT20	XFMR	All	9/10/2018	11/16/2018
DUQU	ARSENAL 138 KV ARS-OAK	LINE	All	9/4/2018	7/2/2019
DUQU	BEAV DUQ345 KV BEA-CLI	LINE	All	9/17/2018	5/31/2019
DUQU	CARS DUQ345 KV T1	XFMR	All	9/17/2018	12/21/2018
DUQU	COLLIER 345 KV COL-TID	LINE	All	9/18/2018	10/30/2018
DUQU	COLLIER 345 KV T1	XFMR	All	10/10/2018	11/20/2018
DUQU	CRES DUQ138 KV CRE-MON	LINE	All	9/29/2018	6/7/2019
DUQU	FINDLAY 138 KV FIN-MON	LINE	All	9/17/2018 3/1/2019	12/14/2018 5/31/2019
EKPC	AVON_EK 138 KV AVO-4BCK	LINE	All	9/10/2018	12/28/2018
EKPC	BLEVNS_T69 KV BLE-HOPE	LINE	All	3/30/2018	12/14/2018
EKPC	FLMINSBG138 KV FLM-KENT	LINE	All	3/4/2019	6/14/2019

Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
EKPC	KENT_T 138 KV SPU-KEN	LINE	All	3/4/2019	6/14/2019
EKPC	MAZIE2 69 KV MAZ-NEWF	LINE	All	3/12/2018	11/9/2018
EKPC	MYSVL_EK138 KV SPU-MYSV	LINE	All	3/4/2019	6/14/2019
EKPC	SPURLOCK345 KV SPU-STU	LINE	All	8/27/2018 9/24/2018	9/10/2018 12/9/2018
FE	02FW_Q11138 KV 02F-02A1	LINE	All	8/1/2018	10/5/2018
FE	BLUEBELL138 KV BLU-02A1	LINE	All	1/31/2017	12/31/2022
FE	ESPROHED138 KV ESP-02M1	LINE	All	10/29/2018	4/12/2019
FE	EVERGFE 138 KV WCI-EVE1	LINE	All	10/24/2012	12/31/2020
FE	EVERGFE 138 KV WCI-EVE2	LINE	All	10/24/2012	12/31/2020
FE	FRNKLNOE138 KV FRN-REI	LINE	All	10/9/2017	12/30/2100
FE	MANSFIEL345 KV MAN-HOY1	LINE	All	9/17/2018	10/22/2018
FE	SEVILL_R138 KV SEV-SEV	LINE	All	10/15/2018 4/8/2019	4/5/2019 6/7/2019
FE	SSCIOTO 138 KV KIRL-SSC	LINE	All	7/2/2018	9/12/2018
FE	STAR_FE 138 KV STA-SEV1	LINE	All	10/15/2018 4/8/2019	4/5/2019 6/7/2019
FE	WCIHOTST138 KV WCI-WCI1	LINE	All	10/24/2012	12/31/2020
FECL	02DUNBAR138 KV 02D-GES2	LINE	All	8/1/2018	10/5/2018
FECL	02ELDEN 138 KV 02E-02H1	LINE	All	8/1/2018	10/5/2018
FECL	02ERIE 138 KV 02E-02F1	LINE	All	8/1/2018	10/5/2018
FECL	02HAMLTN138 KV 02H-HOR1	LINE	All	12/3/2018	1/18/2019
FECL	02HUMMEL138 KV 2	XFMR	All	8/1/2018	10/5/2018
FECL	AIR_PROD138 KV AIR-JEN2	LINE	All	9/15/2018 11/26/2018	11/15/2018 12/28/2018
FECL	ASHTABUL138 KV ASH-04S2	LINE	All	11/5/2018	1/18/2019
FECL	AVONLAK2345 KV 91-AVT	XFMR	All	3/2/2019	6/3/2019
FECL	BEAVER 138 KV BEA-BLA1	LINE	All	9/17/2018	12/28/2018
FECL	BEAVER 345 KV BEA-CAR1	LINE	All	10/29/2018	12/28/2018
FECL	EASTLAKE138 KV EAS-04N2	LINE	All	9/3/2018	12/28/2018
FECL	FOX 138 KV FOX-02P1	LINE	All	8/1/2018	10/5/2018
FECL	FOX 138 KV FOX-GRO2	LINE	All	9/17/2018	11/16/2018
FECL	FOX 345 KV 4	XFMR	All	9/17/2018	11/16/2018
FECL	FURLONG 138 KV 02H-FUR1	LINE	All	9/17/2018	11/16/2018
FECL	FURLONG 138 KV FUR-FOX	LINE	All	9/17/2018	11/16/2018
FECL	GROVEWD 138 KV 4	XFMR	All	9/17/2018	11/16/2018
FECL	HARDING2345 KV HAR-FOX2	LINE	All	9/14/2018	10/19/2018
FECL	LINCOLN5138 KV LIN-LLO2	LINE	All	12/19/2016	12/31/2025



Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
FECL	PLNDEALR138 KV 02P-02H1	LINE	All	8/1/2018 12/3/2018	10/5/2018 3/1/2019
FECL	STEELYAR138 KV JEN-STE1	LINE	All	9/15/2018 11/26/2018	11/15/2018 12/28/2018
ILL_EQ	BROKAW 345 KV BRO-LAN	LINE	All	9/17/2018	10/12/2018
JC-S	EWINDSOR500 KV EWIN-NEW	LINE	All	4/12/2019	5/16/2019
JC-S	REDOAKA 230 KV REDA-SAY	LINE	All	10/2/2018	10/19/2018
ME	HARLEY D115 KV HAR-YOR	LINE	All	10/8/2018	10/26/2018
ME	MIDDLJCT115 KV 5 BANK-S	XFMR	All	9/5/2018	12/3/2018
ME	MIDDLJCT230 KV 5 BANK-P	XFMR	All	9/5/2018	12/3/2018
ME	NBOYERTO230 KV T1	XFMR	All	2/11/2019	5/10/2019
ME	PORTLAND230 KV 3 BANK	XFMR	All	10/3/2018	11/5/2018
PE	CROMBY 69 KV CRO-LIM	LINE	All	10/22/2018	12/22/2018
PE	EMILIE 138 KV EMI-FAL	LINE	All	4/22/2019	5/31/2019
PE	LIMERICK13 KV LIM 4A-T	XFMR	All	9/10/2018	10/12/2018
PE	LIMERICK13 KV LIM 4B-T	XFMR	All	9/10/2018	10/12/2018
PE	LIMERICK230 KV LIM 4A-S	XFMR	All	9/10/2018	10/12/2018
PE	LIMERICK230 KV LIM 4B-S	XFMR	All	9/10/2018	10/12/2018
PE	LIMERICK500 KV LIM 4A-P	XFMR	All	9/10/2018	10/12/2018
PE	LIMERICK500 KV LIM 4B-P	XFMR	All	9/10/2018	10/12/2018
PE	PEACHBOT13 KV 1-T	XFMR	All	1/28/2019	3/15/2019
PE	PEACHBOT230 KV 1-S	XFMR	All	1/28/2019	3/15/2019
PE	PEACHBOT500 KV 1-P	XFMR	All	1/28/2019	3/15/2019
PEP	10THST 138 KV 10T-BUZ4	LINE	All	9/15/2018	12/1/2018
PEP	ALABAMA 230 KV ALA-PAL	LINE	All	9/22/2018	12/14/2018
PEP	AQUASCO 230 KV AQU-BOW	LINE	All	9/24/2018	11/2/2018
PEP	BELLSMIL138 KV BEL-BET2	LINE	All	2/4/2019	6/1/2019
PEP	BELLSMIL230 KV 121-13T	XFMR	All	2/23/2019	5/18/2019
PEP	BELLSMIL230 KV 121-1T	XFMR	All	2/23/2019	5/18/2019
PEP	BELLSMIL230 KV 121-5T	XFMR	All	2/23/2019	5/18/2019
PEP	BELLSMIL230 KV BEL-QUI9	LINE	All	2/23/2019	5/18/2019
PEP	BETHESDA138 KV 006-7T	XFMR	All	2/4/2019	6/1/2019
PEP	BETHESDA138 KV BET-OST	LINE	All	2/4/2019	6/1/2019
PEP	BLUEPLAI230 KV BLU-PAL9	LINE	All	9/22/2018	12/14/2018
PEP	BLUEPLAI230 KV BLU-POT4	LINE	All	9/22/2018	12/14/2018
PEP	BRIGHTON230 KV BRI-BUR5	LINE	All	9/14/2018	3/1/2020
PEP	BURCHESH230 KV BUR-PALO	LINE	All	9/22/2018	12/14/2018
PEP	BURTONSV230 KV BUR-MET0	LINE	All	9/8/2018	3/1/2020
PEP	BURTONSV230 KV BUR-OAK5	LINE	All	9/14/2018	3/1/2020

Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
PEP	METZTAP 230 KV 163-1T	XFMR	All	9/8/2018	3/1/2020
PEP	METZTAP 230 KV MET-TAK8	LINE	All	9/8/2018	3/1/2020
PEP	POTOMAC 230 KV STAC-6T	XFMR	All	9/22/2018	12/14/2018
PEP	QUINCEOR230 KV 118-1T	XFMR	All	3/1/2019	6/1/2019
PEP	TAKOMA 230 KV 027-10T	XFMR	All	9/8/2018	3/1/2020
PEP	TAKOMA 230 KV 027-8T	XFMR	All	9/8/2018	3/1/2020
PL	ALBURTIS500 KV ALB-BRA	LINE	All	1/19/2019	4/30/2019
PL	BRNGSVIL138 KV TX4	XFMR	All	9/26/2018	11/9/2018
PL	BRNGSVIL500 KV TX2	XFMR	All	9/26/2018	11/9/2018
PL	BRTNSVIL138 KV BAR-NST2	LINE	All	9/17/2018	11/16/2018
PL	BRTNSVIL138 KV BAR-TAN2	LINE	All	9/17/2018	11/16/2018
PL	BUXMONT 230 KV 2	XFMR	All	9/4/2018	11/3/2018
PL	CLINTON 230 KV 1	XFMR	All	10/23/2018 1/2/2019	12/22/2018 1/24/2019
PL	COLU PL 230 KV COL-MON	LINE	All	10/2/2018	12/21/2018
PL	COPPERST230 KV COP-NLE	LINE	All	3/11/2019	5/10/2019
PL	CUMB PL 230 KV CUM-WSH	LINE	All	6/5/2018	9/13/2018
PL	ELIMSPOR230 KV ELI-SUN	LINE	All	6/30/2018	7/26/2018
PL	FACEROCK115 KV 1	XFMR	All	4/2/2019	11/21/2019
PL	FACEROCK115 KV 2	XFMR	All	4/2/2019	11/21/2019
PL	LACKAWAN230 KV LAC-OXB	LINE	All	1/2/2019	3/15/2019
PL	SUNBURY 230 KV 23	XFMR	All	10/17/2018	5/30/2019
PL	SUNBURY 500 KV 24	XFMR	All	11/3/2018	12/21/2018
PL	SUSQUEHA500 KV SUS-WES	LINE	All	3/1/2019	4/30/2019
PL	WESCOSVI138 KV 1	XFMR	All	9/24/2018 2/6/2019	10/29/2018 4/2/2019
PN	CONEMAUG500 KV CNM-JUN	LINE	All	10/15/2018	11/2/2018
PN	ERIEE 230 KV ERI-SRI	LINE	All	10/22/2018	12/7/2018
PN	HIGHPNT 115 KV HIG-PEN	LINE	All	9/18/2018	12/14/2018
PN	JOHNSTOW230 KV NO2 TX	XFMR	All	9/4/2018	11/26/2018
PN	LEWISTOW230 KV LEW-RAY	LINE	All	6/4/2018	6/22/2018
PN	NMESHOPP230 KV NME-OXB	LINE	All	10/15/2018	5/17/2019
PN	ROXBURY 115 KV ROX-SHA	LINE	All	6/4/2018	6/21/2018
PS-N	CEDARGRO230 KV CED-CLIK	LINE	All	1/7/2019	2/1/2019
PS-N	CEDARSUB230 KV CED-CEDY	LINE	All	9/21/2018	4/17/2019
PS-N	ESSEX 230 KV ESS-MCC	LINE	All	9/15/2018	12/15/2018
PS-N	HILLSDAL230 KV HIL-NEW	LINE	All	3/20/2019	5/10/2019
PS-N	MEADOWRD138 KV MEA-METR	LINE	All	9/17/2018	10/19/2018

Zone	Facility Name	Type	Modeled Period	Scheduled Start Day	Scheduled End Day
PS-S	CAMDEN 230 KV CAM-CINA	LINE	All	9/17/2018	11/26/2018
UPNY	FALCONER115 KV FAL-WAR	LINE	All	5/2/2017	12/31/2018