

## 2015/2016 Monthly FTR Auction Transmission Outage Modeling

PJM determines the transmission outages to model in the simultaneous feasibility test utilized in each Monthly Balancing of Planning Period 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. Transmission outages will only be considered in final model if scheduled for at least five days 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 FTR auction which do not occur simultaneously. Outages often occur during different times of a month or quarter 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.
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 cancelations, 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.
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 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.

Beginning with the August 2013 Monthly Balancing of Planning Period FTR Auction, PJM may attempt to remove or reduce infeasibilities caused by selected transmission outages.

Infeasibilities are caused because the model representation of transmission outages for any given period is different in the Annual, Long term, and Monthly FTR Auctions. This different representation of transmission outages causes flows from already approved FTRs to exceed facility flow limits. Transmission outages for which PJM may attempt to reduce infeasibilities include the following:

- Transmission outages that have historically caused FTR underfunding.
- Transmission outages on the High Voltage system.
- Transmission outages that create an infeasibility of at least 10%.

2015/2016 Transmission Outages that may cause infeasibilities for which PJM may attempt to reduce		
<b>ZONE</b>	<b>FACILITY NAME</b>	<b>TYPE</b>
AE	CHURCHTO230 KV CHU-ORC	LINE
AE	ORCHARD 500 KV T1	XFRM
AEP	AMOS 765 KV AMO-NPR1	LINE
AEP	BAKER 765 KV .100	XFRM
AEP	BENTONHA345 KV BEN-PAL1	LINE
AEP	BREED 345 KV BRE-WHE1	LINE
AEP	CLOVERD2765 KV CLO-JAC1	LINE
AEP	CLOVERD2765 KV CLO-JOS1	LINE
AEP	CULLODE2765 KV CUL-BAK1	LINE
AEP	DUMONT2 765 KV 2-P	XFRM
AEP	DUMONT2 765 KV DUM-GRE1	LINE
AEP	JACKSONS765 KV JAC-WYO1	LINE
AEP	JOSHUA2765 KV . 1	XFRM
AEP	KAMMER2 765 KV KAM-SCA1	LINE
AEP	MUSKING2345 KV MUS-WAT1	LINE
AEP	SCANTON2765 KV . 3	XFRM
AEP	SULLIVA2765 KV 1-P	XFRM
AEP	VASSELL 765 KV XF1	XFRM
APSS	DOUBS 500 KV DOU-MTS	LINE
APSS	MEADOWBR500 KV MTS-MEA	LINE
BC	BAGLEY 230 KV BAG-GRA	LINE
BC	CONASTON230 KV CNS-NOR2	LINE
COMED	111 ELEC345 KV 11126	LINE
DOM-C	CARSON4 500 KV 563A	LINE
DOM-C	ELMONT4 500 KV TX2	XFRM
DOM-C	MIDLOTH 500 KV TX2	XFRM
DOM-C	NANNA4 500 KV 576A	LINE

DOM-C	NANNA4 500 KV TX6	XFRM
DOM-W	LEXINGTN500 KV 547A	LINE
DOM-W	LEXINGTN500 KV 555A	LINE
DOM-W	VALLEY4 500 KV 548A	LINE
DPL	CARTANZA230 KV CAR-RED	LINE
DPL	CEDARCRE230 KV CED-RED	LINE
DPL	EDGEMOOR230 KV EDG-HAR	LINE
DPL	INDIANRI230 KV IND-PIN	LINE
DPL	MILFORD 230 KV MIL-STE	LINE
DPL	PINEYGRO230 KV AT20	XFRM
DUQU	CRES DUQ345 KV CRS-MAN	LINE
DUQU	CRES DUQ345 KV T2	XFRM
FE	SAMMISFE345 KV SAM-HIG1	LINE
JC-S	ATLANTIC230 KV ATL-LAR	LINE
JC-S	SMITHBUR500 KV BK 4 50	XFRM
ME	HOSENSME230 KV HOS-NTE	LINE
ME	MIDDLJCT230 KV MID-TMI2	LINE
ME	PORTLAND230 KV 3 BANK	XFRM
PE	LIMERICK500 KV LIM 4A-P	XFRM
PE	LIMERICK500 KV LIM 4B-P	XFRM
PE	PEACHBOT500 KV 1-P	XFRM
PEP	BRIGHTON500 KV BRI-CNS	LINE
PEP	BURCHESH500 KV BUR-CHA	LINE
PEP	BURCHESH500 KV TR NO 4	XFRM
PL	ALBURTIS500 KV ALB-HOS	LINE
PL	ALBURTIS500 KV ALB-JUN	LINE
PL	JUNIATA 500 KV 1	XFRM
PL	JUNIATA 500 KV JUN-SUN	LINE
PL	SUNBURY 500 KV 24	XFRM
PL	SUNBURY 500 KV SUN-SUS	LINE
PS-N	ESSEX 230 KV ESS-HUD	LINE
PS-N	ESSEX 230 KV ESS-STA	LINE
PS-N	HUDSON 230 KV HUD-SWA	LINE
PS-S	HOPECREE500 KV HOP-RED	LINE
PS-S	NEWFREED500 KV 500 1	XFRM
PS-S	NEWFREED500 KV 500-2	XFRM
PS-S	NEWFREED500 KV 500-3	XFRM