

## PJM 2024/2025 Stage 1A Over Allocation Notice

This document is to inform PJM members that Stage 1A of the 2024/2025 Annual ARR Allocation was infeasible and PJM was required per PJM Tariff and Operating Agreement to increase the capability limits on these facilities in order to allocate all Stage 1A ARRs.

Section 7.4.2 (i) of the PJM OATT and Operating Agreement states:

If any Auction Revenue Right requests made during Stage 1A of the annual allocation process are not feasible due to system conditions, then PJM shall increase the capability limits of the binding constraints that would have rendered the Auction Revenue Rights infeasible to the extent necessary in order to allocate such Auction Revenue Rights without their being infeasible unless such infeasibility is caused by extraordinary circumstances. Such increased limits shall be included in all rounds of the annual allocation and auction processes and in subsequent modeling during the Planning Year to support any incremental allocations of Auction Revenue Rights and monthly and balance of the Planning Period Financial Transmission Rights auctions unless and to the extent those system conditions that contributed to infeasibility in the annual process are not extant for the time period subject to the subsequent modeling, such as would be the case, for example, if transmission facilities are returned to service during the Planning Year. In these cases, any increase in the capability limits taken under this subsection (i) during the annual process will be removed from subsequent modeling to support any incremental allocations of Auction Revenue Rights and monthly and balance of the Planning Period Financial Transmission Rights auctions. In addition, PJM may remove or lower the increased capability limits, if feasible, during subsequent FTR Auctions if the removal or lowering of the increased capability limits does not impact Auction Revenue Rights funding and net auction revenues are positive.

The below facilities were infeasible and required an increase to the capability limits. These increases will be modeled for all future rounds of the 2024/2025 Annual ARR Allocation and all FTR Auctions effective for the 2024/2025 planning period unless the reason for infeasibility is because of Transmission Outages in which case the increase to capability limits will only apply when the transmission outage is out of service. In addition, PJM may remove or lower the increased capability limits, if feasible, during subsequent FTR Auctions if the removal or lowering of the increased capability limits does not impact Auction Revenue Rights funding and net auction revenues are positive.

| Constraint Name                                       | Contingency Description    | Required MW Increase in Capability Limits | Type         | Reason for Infeasibility |
|---|----------------------------|---|--------------|--------------------------|
| ALLLUD4138 KV ALJ-ALL_I                               | L345.Ashtabula-ErieWest    | 18  | Internal PJM | Transmission Outage      |
| ASHTABUL138 KV ASH-04S1_Z                             | L345.Ashtabula-Perry       | 13  | Internal PJM | Transmission Outage      |
| ASHTABUL138 KV ASH-04S2_Z                             | L345.Ashtabula-Perry       | 18  | Internal PJM | Transmission Outage      |
| ASHTABUL138 KV ASH-04S4_Z                             | L345.Ashtabula-Perry       | 19  | Internal PJM | Transmission Outage      |
| Batesville-Hubble 138 I/o Tanners Crk-Miami Fort 345  |                            | 68  | M2M Flowgate | Network Load             |
| BIGPINET138 KV BIG-GAR_I                              | L138.Kittanning-AllDam6    | 7   | Internal PJM | Transmission Outage      |
| BIGPINET138 KV BIG-KIS_Z                              | L138.Kittanning-AllDam6    | 2   | Internal PJM | Transmission Outage      |
| BRADDOCK230 KV 281A_Z                                 | L500.Possum Point-Ox.571   | 801                                       | Internal PJM | Transmission Outage      |
| BRIERY 230 KV 235A1_Z                                 | L230.Clover-SedgeHill.2068 | 250                                       | Internal PJM | Transmission Outage      |
| BRIERY 230 KV 235B_I                                  | L230.Clover-SedgeHill.2068 | 249                                       | Internal PJM | Transmission Outage      |
| BUCKNGHM230 KV 298B_Z                                 | L230.Clover-SedgeHill.2068 | 23  | Internal PJM | Transmission Outage      |
| BULLRUN 230 KV 244A_I                                 | L500.Possum Point-Ox.571   | 1375                                      | Internal PJM | Transmission Outage      |
| BULLRUN 230 KV 295C_Z                                 | L500.Possum Point-Ox.571   | 640                                       | Internal PJM | Transmission Outage      |
| Bureau - LTV Steel 138 kV I/o Fargo - Sandberg 345 KV |                            | 4   | M2M Flowgate | Network Load             |

| Constraint Name  | Contingency Description             | Required MW Increase in Capability Limits | Type         | Reason for Infeasibility |
|--|-------------------------------------|---|--------------|--------------------------|
| BUREAU - LTVSTEEL 1552 138 kV  |                                     | 3   | M2M Flowgate | Network Load             |
| BURKE 230 KV 270A_I  | L500.Possum Point-Ox.571            | 1319                                      | Internal PJM | Transmission Outage      |
| Butler - Bluemound 138kV 5061 I/o Arcadian - Granvil 345kV               |                                     | 5   | M2M Flowgate | Network Load             |
| Cayuga 345/230 XFMR 9 (fio) Cayuga 345/230 XFMR 10                       |                                     | 4   | M2M Flowgate | Network Load             |
| Cayuga 345-Cayuga I/o Rockport-Jefferson 765                             |                                     | 27  | M2M Flowgate | Transmission Outage      |
| Cherry Valley - Silver Lake (15616) 345 kV I/o Byron - Wayne 345 kV      |                                     | 308                                       | M2M Flowgate | Network Load             |
| Cherry Valley - Silver Lake 345 kV I/o Nelson - Electric Junction 345 kV |                                     | 4   | M2M Flowgate | Transmission Outage      |
| CHR138 138 KV CHR-NEW_I  |                                     | 9   | Internal PJM | Transmission Outage      |
| CHR138 138 KV CHR-NEW_I  | L230.Edgemoor-Harmony.23012         | 21  | Internal PJM | Transmission Outage      |
| CHURCH 69 KV CHU-NME_I   | 230/138.Milford.AT20                | 4   | Internal PJM | Transmission Outage      |
| CLBHOUSE230 KV TX1_I   | L230.Carson-ClubHouse.238 (Sctnlz)  | 246                                       | Internal PJM | Transmission Outage      |
| CNTRVLIN230 KV 244B_I  | L500.Possum Point-Ox.571            | 1335                                      | Internal PJM | Transmission Outage      |
| CODOVA - SUB39 345 kV I/o QUAD CITY - SUB91 345 kV                       |                                     | 184                                       | M2M Flowgate | Network Load             |
| CONASTON230 KV CNS-NOR1_I  | L500.Brighton-Conastone.5011        | 31  | Internal PJM | Transmission Outage      |
| CONASTON500 KV CNS-PEA_Z   |                                     | 13  | Internal PJM | Transmission Outage      |
| COOLSPRI230 KV COL-MIL_Z   | L230.IndianRiver-Milford.23034      | 57  | Internal PJM | Transmission Outage      |
| COOPERPE230 KV COO-GRA_I   |                                     | 91  | Internal PJM | Transmission Outage      |
| COOPERPE230 KV COO-GRA_I   | L500.Conastone-PeachBottom.5012     | 536                                       | Internal PJM | Network Load             |
| COOPERPE230 KV COO-PEA_Z   |                                     | 100                                       | Internal PJM | Transmission Outage      |
| COOPERPE230 KV COO-PEA_Z   | L500.Conastone-PeachBottom.5012     | 544                                       | Internal PJM | Network Load             |
| CUBRUNDP230 KV 2008B_I   | L230.Loudoun-ElkLickDp.2173         | 125                                       | Internal PJM | Transmission Outage      |
| DISCOVER230 KV 2107_I  | L230.Loudoun-ElkLickDp.2173         | 486                                       | Internal PJM | Transmission Outage      |
| EDELPHOS69 KV EDE-NDE_Z  | L345.MaddoxCreek-RPMone             | 9   | Internal PJM | Transmission Outage      |
| Elkhorn North Lake Geneva 138 I/o Sunrise White Water 138                |                                     | 70  | M2M Flowgate | Network Load             |
| ELKCKDP230 KV 2173A_Z  | L500.Possum Point-Ox.571            | 689                                       | Internal PJM | Transmission Outage      |
| FARMVILL230 KV TX4_I   | L230.Clover-SedgeHill.2068          | 12  | Internal PJM | Transmission Outage      |
| FLSCHURC230 KV 251B_I  | L500.Possum Point-Ox.571            | 36  | Internal PJM | Transmission Outage      |
| Francisco - Duff 345 kV I/o Gibson - ABBrown 345 kV                      |                                     | 1   | M2M Flowgate | Transmission Outage      |
| GARNERDP115 KV GAR-MOON_I  | L230.Elmont-Hanover-FourRivers.2032 | 116                                       | Internal PJM | Transmission Outage      |
| GERMANTO115 KV GER-STR_Z   | L500.Brighton-Conastone.5011        | 6   | Internal PJM | Transmission Outage      |
| GREYSPT 115 KV GRE-HARM_Z  | L230.Elmont-Hanover-FourRivers.2032 | 88  | Internal PJM | Transmission Outage      |
| GREYSPT 115 KV GRE-RAP1_I  | L230.Elmont-Hanover-FourRivers.2032 | 47  | Internal PJM | Transmission Outage      |
| GREYSPT 115 KV GRE-RAP2_I  | L230.Elmont-Hanover-FourRivers.2032 | 47  | Internal PJM | Transmission Outage      |
| HARMONYV230 KV TX2_I   | L230.Elmont-Hanover-FourRivers.2032 | 8   | Internal PJM | Transmission Outage      |
| HARRISN 138 KV HAR-OST_I   |                                     | 35  | Internal PJM | Transmission Outage      |
| IDYLWOO4230 KV 207A_Z  | L500.Possum Point-Ox.571            | 641                                       | Internal PJM | Transmission Outage      |
| Labadie-GraySummit 2 345 kV I/o Labadie-GraySummit 1 345 kV              |                                     | 29  | M2M Flowgate | Network Load             |
| LANCASTR115 KV 65B1_Z  | L230.Elmont-Hanover-FourRivers.2032 | 121                                       | Internal PJM | Transmission Outage      |
| LANCASTR115 KV 65C_I   | L230.Elmont-Hanover-FourRivers.2032 | 128                                       | Internal PJM | Transmission Outage      |
| LAURELDP69 KV LAU-SHA_I  | 230/138.PineyGrove.AT20             | 14  | Internal PJM | Transmission Outage      |
| LEROYCEN138 KV SPR-04L1_I  | L345.Ashtabula-Perry                | 1   | Internal PJM | Transmission Outage      |
| LINCOLN 115 KV LIN-STR_I   | L500.Brighton-Conastone.5011        | 12  | Internal PJM | Transmission Outage      |
| LOUDOUN4230 KV 2008A_I   | L230.Loudoun-ElkLickDp.2173         | 158                                       | Internal PJM | Transmission Outage      |
| LTVSteel - Hennepin 138 kV I/o Powerton - Towerline 138 kV               |                                     | 8   | M2M Flowgate | Network Load             |
| Monroe - Lallendorf 345 kV   |                                     | 309                                       | M2M Flowgate | Network Load             |
| Monroe - Lallendorf 345 kV I/o Lemoine - Majestic 345 kV                 |                                     | 355                                       | M2M Flowgate | Network Load             |
| MOONCRNR115 KV MOO-NRTH_I  | L230.Elmont-Hanover-FourRivers.2032 | 116                                       | Internal PJM | Transmission Outage      |
| NOTTINGH230 KV 1-3_I   |                                     | 101                                       | Internal PJM | Transmission Outage      |
| NOTTINGH230 KV 1-3_I   | L500.Conastone-PeachBottom.5012     | 560                                       | Internal PJM | Network Load             |
| NOTTINGH230 KV 2-3_I   |                                     | 101                                       | Internal PJM | Transmission Outage      |
| NOTTINGH230 KV 2-3_I   | L500.Conastone-PeachBottom.5012     | 560                                       | Internal PJM | Network Load             |
| NOTTINGH230 KV NOT-PEA_I   |                                     | 101                                       | Internal PJM | Transmission Outage      |
| NOTTINGH230 KV NOT-PEA_I   | L500.Conastone-PeachBottom.5012     | 545                                       | Internal PJM | Network Load             |
| Nucor-Whitestown 345 kV I/o Rockport-Jefferson 765 kV                    |                                     | 12  | M2M Flowgate | Transmission Outage      |
| OCRAN 115 KV 65A1_Z  | L230.Elmont-Hanover-FourRivers.2032 | 132                                       | Internal PJM | Transmission Outage      |
| OST 138 KV OST-VAN2_Z  |                                     | 28  | Internal PJM | Transmission Outage      |
| Paddock T21 345/138 kV I/o Byron - Wayne 345 kV                          |                                     | 21  | M2M Flowgate | Network Load             |
| Paradise-BR Tap 161kV (fio) Phipps Bend-Volunteer 500kV                  |                                     | 8   | M2M Flowgate | Network Load             |
| Powerton - Towerline 138 kV  |                                     | 30  | M2M Flowgate | Network Load             |
| Powerton - Towerline 138 kV I/o Fargo - Sandburg 345 kV                  |                                     | 49  | M2M Flowgate | Network Load             |
| Powerton - Towerline 138 kV I/o Nelson - Electric Junction 345 kV        |                                     | 40  | M2M Flowgate | Network Load             |
| PRESTON 69 KV PRE-TAN_Z  | 230/138.PineyGrove.AT20             | 25  | Internal PJM | Transmission Outage      |
| PRESTON 69 KV PRE-TOD_I  | 230/138.PineyGrove.AT20             | 23  | Internal PJM | Transmission Outage      |
| QUAD CITY - SUB91 345 kV I/o CODOVA - SUB39 345 kV                       |                                     | 173                                       | M2M Flowgate | Network Load             |
| QuadCities - RockCreek 345 kV I/o MorganValley - Tiffin 345 kV           |                                     | 6   | M2M Flowgate | Network Load             |
| QuadCities - RockCreek 345 kV I/o QuadCities - Sub91                     |                                     | 43  | M2M Flowgate | Network Load             |
| QuadCities - RockCreek 345kV I/o Cordova - Sub39 345kV                   |                                     | 32  | M2M Flowgate | Network Load             |
| RAPPAHAN115 KV RAP-WHIT_I  | L230.Elmont-Hanover-FourRivers.2032 | 38  | Internal PJM | Transmission Outage      |
| Sandburg xfmr 3 I/o Oak Grove - Sandburg 345 kV                          |                                     | 104                                       | M2M Flowgate | Network Load             |
| SIDEBURN230 KV 270B_I  | L500.Possum Point-Ox.571            | 1265                                      | Internal PJM | Transmission Outage      |
| Sioux - Roxford 345 kV I/o Graysum - Labadie 1 345 kV                    |                                     | 115                                       | M2M Flowgate | Network Load             |

| Constraint Name   | Contingency Description         | Required MW Increase in Capability Limits | Type         | Reason for Infeasibility |
|---|---------------------------------|---|--------------|--------------------------|
| SPRUCE 138 KV SPR-04L2_Z  | L345.Ashtabula-Perry            | 3   | Internal PJM | Transmission Outage      |
| State Line - Wolf Lake 138 kV                                   |                                 | 2   | M2M Flowgate | Transmission Outage      |
| State Line - Wolf Lake 138 kV I/o Burnham - Munster 345 kV      |                                 | 6   | M2M Flowgate | Transmission Outage      |
| State Line - Wolf Lake 138 kV I/o Burnham - Sheffield 345 kV    |                                 | 9   | M2M Flowgate | Transmission Outage      |
| State Line - Wolf Lake 138 kV I/o Sheffield 2 345/138 kV        |                                 | 9   | M2M Flowgate | Transmission Outage      |
| State Line - Wolf Lake 138 kV I/o Wilton Center - Dumont 765 kV |                                 | 24  | M2M Flowgate | Transmission Outage      |
| Sub_71 - Sub_88 161 kV I/o Cordova - Sub_39 345 kV              |                                 | 12  | M2M Flowgate | Network Load             |
| Sub_88 - Sub_70 161 kV I/o Cordova - Sub_39 345 kV              |                                 | 4   | M2M Flowgate | Network Load             |
| Sub56 - Sub85 161kV I/o Cordova - Sub39 345kV                   |                                 | 19  | M2M Flowgate | Network Load             |
| Sugar Creek Dresser 345 I/o Nucor Cayuga 345                    |                                 | 1   | M2M Flowgate | Transmission Outage      |
| SULLY 230 KV 265C_I   | L230.Loudoun-ElkLickDp.2173     | 435                                       | Internal PJM | Transmission Outage      |
| TMI 500 KV 1BANK_I  | L500.Conastone-PeachBottom.5012 | 67  | Internal PJM | Transmission Outage      |
| WALNEY 230 KV 265B_I  | L230.Loudoun-ElkLickDp.2173     | 176                                       | Internal PJM | Transmission Outage      |

Listed below are the aggregate MW quantities, by source and sinks, of infeasible ARRs in Stage 1A of the 2024/2025 Annual ARR Allocation.

| Source                   | Sink            | Infeasible MW Quantity |
|--------------------------|-----------------|------------------------|
| 107 DIXO34.5 KV SUBLETTE | COMED_RESID_AGG | 0.7                    |
| 4 QUAD C18 KV QC-1       | BATAVIA         | 1.9                    |
| 4 QUAD C18 KV QC-1       | COMED_RESID_AGG | 447.3                  |
| 4 QUAD C18 KV QC-1       | GENEVA          | 1                      |
| 4 QUAD C18 KV QC-1       | N ILLINOIS HUB  | 88.4                   |
| 4 QUAD C18 KV QC-1       | NAPERVILLE      | 7.3                    |
| 4 QUAD C18 KV QC-1       | ST. CHARLES     | 2.5                    |
| 4 QUAD C18 KV QC-2       | BATAVIA         | 1.9                    |
| 4 QUAD C18 KV QC-2       | COMED_RESID_AGG | 447.3                  |
| 4 QUAD C18 KV QC-2       | GENEVA          | 1                      |
| 4 QUAD C18 KV QC-2       | N ILLINOIS HUB  | 206.2                  |
| 4 QUAD C18 KV QC-2       | NAPERVILLE      | 7.3                    |
| 4 QUAD C18 KV QC-2       | ST. CHARLES     | 2.5                    |
| 6 BYRON 25 KV BY-1       | BATAVIA         | 2.6                    |
| 6 BYRON 25 KV BY-1       | COMED_RESID_AGG | 602                    |
| 6 BYRON 25 KV BY-1       | GENEVA          | 1.4                    |
| 6 BYRON 25 KV BY-1       | N ILLINOIS HUB  | 60.7                   |
| 6 BYRON 25 KV BY-1       | NAPERVILLE      | 10.2                   |
| 6 BYRON 25 KV BY-1       | ST. CHARLES     | 3.7                    |
| 6 BYRON 25 KV BY-2       | BATAVIA         | 2.5                    |
| 6 BYRON 25 KV BY-2       | COMED_RESID_AGG | 577.2                  |
| 6 BYRON 25 KV BY-2       | GENEVA          | 1.4                    |
| 6 BYRON 25 KV BY-2       | N ILLINOIS HUB  | 141.5                  |
| 6 BYRON 25 KV BY-2       | NAPERVILLE      | 9.9                    |
| 6 BYRON 25 KV BY-2       | ST. CHARLES     | 3.7                    |
| 937 LEE 13.5 KV LEE31-1  | BATAVIA         | 0.1                    |
| 937 LEE 13.5 KV LEE31-1  | COMED_RESID_AGG | 34.7                   |
| 937 LEE 13.5 KV LEE31-1  | NAPERVILLE      | 0.6                    |
| 937 LEE 13.5 KV LEE31-1  | ST. CHARLES     | 0.2                    |
| 937 LEE 13.5 KV LEE31-2  | BATAVIA         | 0.1                    |
| 937 LEE 13.5 KV LEE31-2  | COMED_RESID_AGG | 34.7                   |
| 937 LEE 13.5 KV LEE31-2  | NAPERVILLE      | 0.6                    |
| 937 LEE 13.5 KV LEE31-2  | ST. CHARLES     | 0.2                    |
| 937 LEE 13.5 KV LEE32-1  | COMED_RESID_AGG | 16.2                   |
| 937 LEE 13.5 KV LEE32-1  | NAPERVILLE      | 0.3                    |
| 937 LEE 13.5 KV LEE32-1  | ST. CHARLES     | 0.1                    |
| 937 LEE 13.5 KV LEE32-2  | COMED_RESID_AGG | 16.2                   |

| Source                  | Sink                   | Infeasible MW Quantity |
|-------------------------|------------------------|------------------------|
| 937 LEE 13.5 KV LEE32-2 | NAPERVILLE             | 0.3                    |
| 937 LEE 13.5 KV LEE32-2 | ST. CHARLES            | 0.1                    |
| 937 LEE 13.5 KV LEE33-1 | BATAVIA                | 0.1                    |
| 937 LEE 13.5 KV LEE33-1 | COMED_RESID_AGG        | 33.4                   |
| 937 LEE 13.5 KV LEE33-1 | NAPERVILLE             | 0.6                    |
| 937 LEE 13.5 KV LEE33-1 | ST. CHARLES            | 0.2                    |
| 937 LEE 13.5 KV LEE33-2 | BATAVIA                | 0.1                    |
| 937 LEE 13.5 KV LEE33-2 | COMED_RESID_AGG        | 33.4                   |
| 937 LEE 13.5 KV LEE33-2 | NAPERVILLE             | 0.6                    |
| 937 LEE 13.5 KV LEE33-2 | ST. CHARLES            | 0.2                    |
| 937 LEE 13.5 KV LEE34-1 | COMED_RESID_AGG        | 16.2                   |
| 937 LEE 13.5 KV LEE34-1 | NAPERVILLE             | 0.3                    |
| 937 LEE 13.5 KV LEE34-1 | ST. CHARLES            | 0.1                    |
| 937 LEE 13.5 KV LEE34-2 | COMED_RESID_AGG        | 16.1                   |
| 937 LEE 13.5 KV LEE34-2 | NAPERVILLE             | 0.3                    |
| 937 LEE 13.5 KV LEE34-2 | ST. CHARLES            | 0.1                    |
| 940 CORD18 KV CD-1      | BATAVIA                | 0.3                    |
| 940 CORD18 KV CD-1      | COMED_RESID_AGG        | 80.8                   |
| 940 CORD18 KV CD-1      | GENEVA                 | 0.1                    |
| 940 CORD18 KV CD-1      | NAPERVILLE             | 1.3                    |
| 940 CORD18 KV CD-1      | ST. CHARLES            | 0.4                    |
| 940 CORD18 KV CD-2      | BATAVIA                | 0.3                    |
| 940 CORD18 KV CD-2      | COMED_RESID_AGG        | 80.7                   |
| 940 CORD18 KV CD-2      | GENEVA                 | 0.1                    |
| 940 CORD18 KV CD-2      | NAPERVILLE             | 1.3                    |
| 940 CORD18 KV CD-2      | ST. CHARLES            | 0.4                    |
| 952 ROCK16 KV RO11      | BATAVIA                | 0.3                    |
| 952 ROCK16 KV RO11      | COMED_RESID_AGG        | 64.5                   |
| 952 ROCK16 KV RO11      | GENEVA                 | 0.2                    |
| 952 ROCK16 KV RO12      | BATAVIA                | 0.3                    |
| 952 ROCK16 KV RO12      | COMED_RESID_AGG        | 63.9                   |
| 952 ROCK16 KV RO12      | GENEVA                 | 0.2                    |
| 959ERDBS34.5 KV BSWFBR1 | COMED_RESID_AGG        | 12.4                   |
| 959ERDBS34.5 KV BSWFBR1 | NAPERVILLE             | 0.3                    |
| 969 ECOG34.5 KV LENA WF | COMED_RESID_AGG        | 8.6                    |
| 982 ROCK16 KV RO21      | BATAVIA                | 0.3                    |
| 982 ROCK16 KV RO21      | COMED_RESID_AGG        | 67.4                   |
| 982 ROCK16 KV RO21      | GENEVA                 | 0.2                    |
| AEP-DAYTON HUB          | DOM_RESID_AGG          | 35.2                   |
| AMOS 26 KV AM1          | AEPOHIO W.O. MON POWER | 1                      |

| Source                | Sink                   | Infeasible MW Quantity |
|-----------------------|------------------------|------------------------|
| AMOS 26 KV AM1        | AMP-OHIO               | 0.4                    |
| AMOS 26 KV AM2        | AEPOHIO W.O. MON POWER | 0.8                    |
| AMOS 26 KV AM2        | AMP-OHIO               | 0.3                    |
| AMOS 26 KV AM3        | AEPOHIO W.O. MON POWER | 1.9                    |
| AMOS 26 KV AM3        | AMP-OHIO               | 0.7                    |
| ASYLUM 23 KV LIBRTY10 | BGE_RESID_AGG          | 18                     |
| ASYLUM 23 KV LIBRTY10 | PENELEC_RESID_AGG      | 70.8                   |
| ASYLUM 23 KV LIBRTY10 | PEPCO DC               | 5.7                    |
| ASYLUM 23 KV LIBRTY10 | PEPCO MD               | 8.4                    |
| ASYLUM 23 KV LIBRTY10 | SMECO_RESID_AGG        | 1.3                    |
| BATHCO 20 KV GM1      | DOM_RESID_AGG          | 212.1                  |
| BATHCO 20 KV GM2      | DOM_RESID_AGG          | 212.1                  |
| BATHCO 20 KV GM3      | DOM_RESID_AGG          | 211.5                  |
| BATHCO 20 KV GM4      | DOM_RESID_AGG          | 211.3                  |
| BATHCO 20 KV GM5      | DOM_RESID_AGG          | 211.8                  |
| BATHCO 20 KV GM6      | DOM_RESID_AGG          | 213.4                  |
| BEARGRDN18 KV ST1C    | DOM_RESID_AGG          | 414.7                  |
| BEAV DUQ22 KV UNIT1   | FEOHIO_RESID_AGG       | 408.1                  |
| BEAV DUQ22 KV UNIT2   | FEOHIO_RESID_AGG       | 402.2                  |
| BERRHYD 4 KV BR1      | AEPAPCO_RESID_AGG      | 0.5                    |
| BERRHYD 4 KV BR1      | AEPKY_RESID_AGG        | 0.1                    |
| BERRHYD 4 KV BR1      | AEPOHIO W.O. MON POWER | 5.4                    |
| BERRHYD 4 KV BR1      | AK STEEL               | 0.1                    |
| BERRHYD 4 KV BR1      | BLUE RIDGE             | 0.4                    |
| BERRHYD 4 KV BR10     | AEPAPCO_RESID_AGG      | 0.5                    |
| BERRHYD 4 KV BR10     | AEPKY_RESID_AGG        | 0.1                    |
| BERRHYD 4 KV BR10     | AEPOHIO W.O. MON POWER | 5.4                    |
| BERRHYD 4 KV BR10     | AK STEEL               | 0.1                    |
| BERRHYD 4 KV BR10     | BLUE RIDGE             | 0.4                    |
| BERRHYD 4 KV BR11     | AEPAPCO_RESID_AGG      | 0.4                    |
| BERRHYD 4 KV BR11     | AEPKY_RESID_AGG        | 0.1                    |
| BERRHYD 4 KV BR11     | AEPOHIO W.O. MON POWER | 5.2                    |
| BERRHYD 4 KV BR11     | AK STEEL               | 0.1                    |
| BERRHYD 4 KV BR11     | BLUE RIDGE             | 0.4                    |
| BERRHYD 4 KV BR12     | AEPAPCO_RESID_AGG      | 0.4                    |
| BERRHYD 4 KV BR12     | AEPKY_RESID_AGG        | 0.1                    |
| BERRHYD 4 KV BR12     | AEPOHIO W.O. MON POWER | 5.1                    |
| BERRHYD 4 KV BR12     | AK STEEL               | 0.1                    |
| BERRHYD 4 KV BR12     | BLUE RIDGE             | 0.4                    |
| BERRHYD 4 KV BR2      | AEPAPCO_RESID_AGG      | 0.4                    |

| Source            | Sink                   | Infeasible MW Quantity |
|-------------------|------------------------|------------------------|
| BERRHYD 4 KV BR2  | AEPKY_RESID_AGG        | 0.1                    |
| BERRHYD 4 KV BR2  | AEPOHIO W.O. MON POWER | 4.8                    |
| BERRHYD 4 KV BR2  | AK STEEL               | 0.1                    |
| BERRHYD 4 KV BR2  | BLUE RIDGE             | 0.4                    |
| BERRHYD 4 KV BR3  | AEPAPCO_RESID_AGG      | 0.4                    |
| BERRHYD 4 KV BR3  | AEPKY_RESID_AGG        | 0.1                    |
| BERRHYD 4 KV BR3  | AEPOHIO W.O. MON POWER | 4.8                    |
| BERRHYD 4 KV BR3  | AK STEEL               | 0.1                    |
| BERRHYD 4 KV BR3  | BLUE RIDGE             | 0.4                    |
| BERRHYD 4 KV BR4  | AEPAPCO_RESID_AGG      | 0.4                    |
| BERRHYD 4 KV BR4  | AEPKY_RESID_AGG        | 0.1                    |
| BERRHYD 4 KV BR4  | AEPOHIO W.O. MON POWER | 4.9                    |
| BERRHYD 4 KV BR4  | AK STEEL               | 0.1                    |
| BERRHYD 4 KV BR4  | BLUE RIDGE             | 0.4                    |
| BERRHYD 4 KV BR5  | AEPAPCO_RESID_AGG      | 0.4                    |
| BERRHYD 4 KV BR5  | AEPKY_RESID_AGG        | 0.1                    |
| BERRHYD 4 KV BR5  | AEPOHIO W.O. MON POWER | 4.8                    |
| BERRHYD 4 KV BR5  | AK STEEL               | 0.1                    |
| BERRHYD 4 KV BR5  | BLUE RIDGE             | 0.4                    |
| BERRHYD 4 KV BR6  | AEPAPCO_RESID_AGG      | 0.4                    |
| BERRHYD 4 KV BR6  | AEPKY_RESID_AGG        | 0.1                    |
| BERRHYD 4 KV BR6  | AEPOHIO W.O. MON POWER | 4.7                    |
| BERRHYD 4 KV BR6  | AK STEEL               | 0.1                    |
| BERRHYD 4 KV BR6  | BLUE RIDGE             | 0.4                    |
| BERRHYD 4 KV BR7  | AEPAPCO_RESID_AGG      | 0.4                    |
| BERRHYD 4 KV BR7  | AEPKY_RESID_AGG        | 0.1                    |
| BERRHYD 4 KV BR7  | AEPOHIO W.O. MON POWER | 4.7                    |
| BERRHYD 4 KV BR7  | AK STEEL               | 0.1                    |
| BERRHYD 4 KV BR7  | BLUE RIDGE             | 0.4                    |
| BERRHYD 4 KV BR8  | AEPAPCO_RESID_AGG      | 0.4                    |
| BERRHYD 4 KV BR8  | AEPKY_RESID_AGG        | 0.1                    |
| BERRHYD 4 KV BR8  | AEPOHIO W.O. MON POWER | 4.6                    |
| BERRHYD 4 KV BR8  | AK STEEL               | 0.1                    |
| BERRHYD 4 KV BR8  | BLUE RIDGE             | 0.4                    |
| BERRHYD 4 KV BR9  | AEPAPCO_RESID_AGG      | 0.4                    |
| BERRHYD 4 KV BR9  | AEPKY_RESID_AGG        | 0.1                    |
| BERRHYD 4 KV BR9  | AEPOHIO W.O. MON POWER | 4.7                    |
| BERRHYD 4 KV BR9  | AK STEEL               | 0.1                    |
| BERRHYD 4 KV BR9  | BLUE RIDGE             | 0.4                    |
| BIGSANDY22 KV BS1 | AEPOHIO W.O. MON POWER | 0.1                    |

| Source                   | Sink                   | Infeasible MW Quantity |
|--------------------------|------------------------|------------------------|
| BIGSANDY22 KV BS1        | AMP-OHIO               | 0.2                    |
| BIRDBORO23 KV CT1        | PENELEC_RESID_AGG      | 22.6                   |
| BIRDNECK34.5 KV CVOWPLWF | DOM_RESID_AGG          | 1                      |
| BLMNTDOM19 KV STONEST    | DOM_RESID_AGG          | 7.7                    |
| BLOSSBUR13 KV UNITCT     | PENELEC_RESID_AGG      | 12.9                   |
| BRUNSCOL21 KV BRUNSST    | DOM_RESID_AGG          | 967                    |
| BSPEAKER13.8 KV 1        | AEPOHIO W.O. MON POWER | 2.1                    |
| BSPEAKER13.8 KV 2        | AEPOHIO W.O. MON POWER | 1.5                    |
| BSPEAKER13.8 KV 3        | AEPOHIO W.O. MON POWER | 1.9                    |
| BSPEAKER13.8 KV 4        | AEPOHIO W.O. MON POWER | 1.4                    |
| BSPEAKER13.8 KV 5        | AEPOHIO W.O. MON POWER | 1.6                    |
| BSPEAKER13.8 KV 6        | AEPOHIO W.O. MON POWER | 0.3                    |
| BUCHANAN2 KV BU1         | AEPAPCO_RESID_AGG      | 0.5                    |
| BUCHANAN2 KV BU1         | AEPKY_RESID_AGG        | 0.1                    |
| BUCHANAN2 KV BU1         | AEPOHIO W.O. MON POWER | 5.9                    |
| BUCHANAN2 KV BU1         | BLUE RIDGE             | 0.4                    |
| BUCHANAN2 KV BU10        | AEPAPCO_RESID_AGG      | 0.5                    |
| BUCHANAN2 KV BU10        | AEPKY_RESID_AGG        | 0.1                    |
| BUCHANAN2 KV BU10        | AEPOHIO W.O. MON POWER | 5.3                    |
| BUCHANAN2 KV BU10        | BLUE RIDGE             | 0.4                    |
| BUCHANAN2 KV BU2         | AEPAPCO_RESID_AGG      | 0.5                    |
| BUCHANAN2 KV BU2         | AEPKY_RESID_AGG        | 0.1                    |
| BUCHANAN2 KV BU2         | AEPOHIO W.O. MON POWER | 5.5                    |
| BUCHANAN2 KV BU2         | BLUE RIDGE             | 0.4                    |
| BUCHANAN2 KV BU3         | AEPAPCO_RESID_AGG      | 0.5                    |
| BUCHANAN2 KV BU3         | AEPKY_RESID_AGG        | 0.1                    |
| BUCHANAN2 KV BU3         | AEPOHIO W.O. MON POWER | 5.4                    |
| BUCHANAN2 KV BU3         | BLUE RIDGE             | 0.4                    |
| BUCHANAN2 KV BU4         | AEPAPCO_RESID_AGG      | 0.5                    |
| BUCHANAN2 KV BU4         | AEPKY_RESID_AGG        | 0.1                    |
| BUCHANAN2 KV BU4         | AEPOHIO W.O. MON POWER | 5.4                    |
| BUCHANAN2 KV BU4         | BLUE RIDGE             | 0.4                    |
| BUCHANAN2 KV BU5         | AEPAPCO_RESID_AGG      | 0.5                    |
| BUCHANAN2 KV BU5         | AEPKY_RESID_AGG        | 0.1                    |
| BUCHANAN2 KV BU5         | AEPOHIO W.O. MON POWER | 5                      |
| BUCHANAN2 KV BU5         | BLUE RIDGE             | 0.4                    |
| BUCHANAN2 KV BU6         | AEPAPCO_RESID_AGG      | 0.5                    |
| BUCHANAN2 KV BU6         | AEPKY_RESID_AGG        | 0.1                    |
| BUCHANAN2 KV BU6         | AEPOHIO W.O. MON POWER | 5.1                    |
| BUCHANAN2 KV BU6         | BLUE RIDGE             | 0.4                    |



| Source                   | Sink                   | Infeasible MW Quantity |
|--------------------------|------------------------|------------------------|
| BUCHANAN2 KV BU7         | AEPAPCO_RESID_AGG      | 0.5                    |
| BUCHANAN2 KV BU7         | AEPKY_RESID_AGG        | 0.1                    |
| BUCHANAN2 KV BU7         | AEPOHIO W.O. MON POWER | 5                      |
| BUCHANAN2 KV BU7         | BLUE RIDGE             | 0.4                    |
| BUCHANAN2 KV BU8         | AEPAPCO_RESID_AGG      | 0.5                    |
| BUCHANAN2 KV BU8         | AEPKY_RESID_AGG        | 0.1                    |
| BUCHANAN2 KV BU8         | AEPOHIO W.O. MON POWER | 4.6                    |
| BUCHANAN2 KV BU8         | BLUE RIDGE             | 0.4                    |
| BUCHANAN2 KV BU9         | AEPAPCO_RESID_AGG      | 0.5                    |
| BUCHANAN2 KV BU9         | AEPKY_RESID_AGG        | 0.1                    |
| BUCHANAN2 KV BU9         | AEPOHIO W.O. MON POWER | 4.7                    |
| BUCHANAN2 KV BU9         | BLUE RIDGE             | 0.4                    |
| CARTANZA13.8 KV GARRISON | DPL_ODEC               | 9.2                    |
| CARTANZA13.8 KV GARRISON | EASTON                 | 0.3                    |
| CHESAPKE13.8 KV GT1      | DOM_RESID_AGG          | 10.8                   |
| CHESAPKE13.8 KV GT6      | DOM_RESID_AGG          | 25.2                   |
| CHESTER414 KV G7G        | DOM_RESID_AGG          | 0.5                    |
| CHINQUPN23 KV CONET2SP   | DOM_RESID_AGG          | 36.5                   |
| CHR138 12 KV G11         | DPL_ODEC               | 2.2                    |
| CHR138 12 KV G14         | DPL_ODEC               | 2.2                    |
| CLIFTYCR15.5 KV CC1      | BUCKEYE - AEPOH        | 6.5                    |
| CLIFTYCR15.5 KV CC1      | DAY_RESID_AGG          | 16                     |
| CLIFTYCR15.5 KV CC1      | PENELEC                | 73.9                   |
| CLOVER 25 KV G1          | DOM_RESID_AGG          | 308.8                  |
| CLOVER 25 KV G2          | DOM_RESID_AGG          | 307.6                  |
| COLTRAIL34.5 KV COLTRWSP | DOM_RESID_AGG          | 50.4                   |
| COLTRAIL34.5 KV SPRINGSP | DOM_RESID_AGG          | 38.5                   |
| CONEMAUG115 KV DIESEL    | BGE_RESID_AGG          | 5                      |
| CONEMAUG115 KV DIESEL    | PEPCO DC               | 2.6                    |
| CONEMAUG115 KV DIESEL    | PEPCO MD               | 4.4                    |
| CONEMAUG115 KV DIESEL    | SMECO_RESID_AGG        | 0.3                    |
| CONEMAUG22 KV UNIT 1     | BGE_RESID_AGG          | 54.5                   |
| CONEMAUG22 KV UNIT 1     | DPL_ODEC               | 2.9                    |
| CONEMAUG22 KV UNIT 1     | PEPCO DC               | 16                     |
| CONEMAUG22 KV UNIT 1     | PEPCO MD               | 22                     |
| CONEMAUG22 KV UNIT 1     | SMECO_RESID_AGG        | 6.3                    |
| CONEMAUG22 KV UNIT02     | BGE_RESID_AGG          | 54.4                   |
| CONEMAUG22 KV UNIT02     | DPL_ODEC               | 2.9                    |
| CONEMAUG22 KV UNIT02     | PEPCO DC               | 15.8                   |
| CONEMAUG22 KV UNIT02     | PEPCO MD               | 21.9                   |

| Source               | Sink                   | Infeasible MW Quantity |
|----------------------|------------------------|------------------------|
| CONEMAUG22 KV UNIT02 | SMECO_RESID_AGG        | 6.3                    |
| CONOWING13 KV G10    | PECO_RESID_AGG         | 47.1                   |
| CONOWING13 KV G11    | PECO_RESID_AGG         | 47                     |
| CONOWING13 KV GEN1   | PECO_RESID_AGG         | 36.4                   |
| CONOWING13 KV GEN2   | PECO_RESID_AGG         | 28.8                   |
| CONOWING13 KV GEN3   | PECO_RESID_AGG         | 35.9                   |
| CONOWING13 KV GEN4   | PECO_RESID_AGG         | 35.8                   |
| CONOWING13 KV GEN5   | PECO_RESID_AGG         | 28.2                   |
| CONOWING13 KV GEN6   | PECO_RESID_AGG         | 35.7                   |
| CONOWING13 KV GEN8   | PECO_RESID_AGG         | 46.8                   |
| CONOWING13 KV GEN9   | PECO_RESID_AGG         | 46.9                   |
| CONOWING13 KV UNIT07 | PECO_RESID_AGG         | 35.5                   |
| CONSTANT2 KV CO1     | AEPAPCO_RESID_AGG      | 0.5                    |
| CONSTANT2 KV CO1     | AEPKY_RESID_AGG        | 0.1                    |
| CONSTANT2 KV CO1     | AEPOHIO W.O. MON POWER | 4.2                    |
| CONSTANT2 KV CO1     | BLUE RIDGE             | 0.4                    |
| CONSTANT2 KV CO2     | AEPAPCO_RESID_AGG      | 0.5                    |
| CONSTANT2 KV CO2     | AEPKY_RESID_AGG        | 0.1                    |
| CONSTANT2 KV CO2     | AEPOHIO W.O. MON POWER | 4.2                    |
| CONSTANT2 KV CO2     | BLUE RIDGE             | 0.4                    |
| CONSTANT2 KV CO3     | AEPAPCO_RESID_AGG      | 0.5                    |
| CONSTANT2 KV CO3     | AEPKY_RESID_AGG        | 0.1                    |
| CONSTANT2 KV CO3     | AEPOHIO W.O. MON POWER | 4.3                    |
| CONSTANT2 KV CO3     | BLUE RIDGE             | 0.4                    |
| CONSTANT2 KV CO4     | AEPAPCO_RESID_AGG      | 0.5                    |
| CONSTANT2 KV CO4     | AEPKY_RESID_AGG        | 0.1                    |
| CONSTANT2 KV CO4     | AEPOHIO W.O. MON POWER | 4.1                    |
| CONSTANT2 KV CO4     | BLUE RIDGE             | 0.4                    |
| COOK 26 KV CK1       | AEPAPCO_RESID_AGG      | 244.3                  |
| COOK 26 KV CK1       | AEPIM_RESID_AGG        | 52.9                   |
| COOK 26 KV CK1       | AEPKY_RESID_AGG        | 45.2                   |
| COOK 26 KV CK1       | AEPOHIO W.O. MON POWER | 300.8                  |
| COOK 26 KV CK1       | AK STEEL               | 1.4                    |
| COOK 26 KV CK1       | AMP-OHIO               | 3.5                    |
| COOK 26 KV CK1       | BLUE RIDGE             | 11.4                   |
| COOK 26 KV CK1       | BUCK-CIN               | 0.3                    |
| COOK 26 KV CK1       | BUCKEYE - AEPOH        | 7.2                    |
| COOK 26 KV CK1       | BUCKEYE - DPL          | 1.7                    |
| COOK 26 KV CK1       | BUCK-FE                | 1.4                    |
| COOK 26 KV CK1       | MERIDIAN EWHITLEY      | 0.9                    |

| Source               | Sink                   | Infeasible MW Quantity |
|----------------------|------------------------|------------------------|
| COOK 26 KV CK2       | AEPAPCO_RESID_AGG      | 222.3                  |
| COOK 26 KV CK2       | AEPKY_RESID_AGG        | 40.4                   |
| COOK 26 KV CK2       | AEPOHIO W.O. MON POWER | 296.3                  |
| COOK 26 KV CK2       | AK STEEL               | 1.1                    |
| COOK 26 KV CK2       | AMP-OHIO               | 3.7                    |
| COOK 26 KV CK2       | BLUE RIDGE             | 10.2                   |
| COOK 26 KV CK2       | BUCK-CIN               | 0.3                    |
| COOK 26 KV CK2       | BUCKEYE - AEPOH        | 7.6                    |
| COOK 26 KV CK2       | BUCKEYE - DPL          | 1.9                    |
| COOK 26 KV CK2       | BUCK-FE                | 1.6                    |
| CORNU 18 KV 1GT1     | AEPOHIO W.O. MON POWER | 0.4                    |
| CORNU 18 KV 1GT1     | AMP-OHIO               | 0.1                    |
| CORNU 18 KV 1GT2     | AEPOHIO W.O. MON POWER | 0.5                    |
| CORNU 18 KV 1GT2     | AMP-OHIO               | 0.1                    |
| CORNU 18 KV 2GT1     | AEPOHIO W.O. MON POWER | 0.5                    |
| CORNU 18 KV 2GT1     | AMP-OHIO               | 0.1                    |
| CORNU 18 KV 2GT2     | AEPOHIO W.O. MON POWER | 0.5                    |
| CORNU 18 KV 2GT2     | AMP-OHIO               | 0.1                    |
| CORNU 18 KV ST1      | AEPOHIO W.O. MON POWER | 0.5                    |
| CORNU 18 KV ST1      | AMP-OHIO               | 0.1                    |
| CORNU 18 KV ST2      | AEPOHIO W.O. MON POWER | 0.5                    |
| CORNU 18 KV ST2      | AMP-OHIO               | 0.1                    |
| CUSHAW 2 KV G15      | DOM_RESID_AGG          | 2.5                    |
| DARBYTWN14 KV GT1    | DOM_RESID_AGG          | 0.5                    |
| DARBYTWN14 KV GT2    | DOM_RESID_AGG          | 0.1                    |
| DARBYTWN14 KV GT3    | DOM_RESID_AGG          | 0.2                    |
| DEEPCRK 12 KV NO 1 G | PENELEC_RESID_AGG      | 0.3                    |
| DEEPCRK 12 KV NO 2 G | PENELEC_RESID_AGG      | 0.3                    |
| DELA DPL13 KV G1     | DPL_ODEC               | 5.1                    |
| DELA DPL13 KV G1     | EASTON                 | 0.1                    |
| DELA DPL13 KV G10    | DPL_ODEC               | 1.7                    |
| DELA DPL13 KV G2     | DPL_ODEC               | 5.4                    |
| DELA DPL13 KV G2     | EASTON                 | 0.1                    |
| DLTAPLNT13.8 KV GEN1 | AMP-ATSI OH            | 1                      |
| DLTAPLNT13.8 KV GEN1 | AMP-ATSI PA            | 0.1                    |
| DLTAPLNT13.8 KV GEN1 | BGE_RESID_AGG          | 11.2                   |
| DLTAPLNT13.8 KV GEN1 | CPP                    | 0.8                    |
| DLTAPLNT13.8 KV GEN1 | DEK                    | 1                      |
| DLTAPLNT13.8 KV GEN1 | DEOK                   | 0.1                    |
| DLTAPLNT13.8 KV GEN1 | DEOK_RESID_AGG         | 22.7                   |

| Source               | Sink               | Infeasible MW Quantity |
|----------------------|--------------------|------------------------|
| DLTAPLNT13.8 KV GEN1 | DUQ_RESID_AGG      | 15.6                   |
| DLTAPLNT13.8 KV GEN1 | EKPC_RESID_AGG     | 4                      |
| DLTAPLNT13.8 KV GEN1 | EKPC-DEOK LOAD     | 0.1                    |
| DLTAPLNT13.8 KV GEN1 | FEOHIO_RESID_AGG   | 37.5                   |
| DLTAPLNT13.8 KV GEN1 | PENPOWER_RESID_AGG | 4.1                    |
| DLTAPLNT13.8 KV GEN1 | PEPCO DC           | 4.8                    |
| DLTAPLNT13.8 KV GEN1 | PEPCO MD           | 7.5                    |
| DLTAPLNT13.8 KV GEN1 | SMECO_RESID_AGG    | 1.5                    |
| DLTAPLNT13.8 KV GEN2 | AMP-ATSI OH        | 1.1                    |
| DLTAPLNT13.8 KV GEN2 | AMP-ATSI PA        | 0.1                    |
| DLTAPLNT13.8 KV GEN2 | BGE_RESID_AGG      | 11.2                   |
| DLTAPLNT13.8 KV GEN2 | CPP                | 0.8                    |
| DLTAPLNT13.8 KV GEN2 | DEK                | 1.1                    |
| DLTAPLNT13.8 KV GEN2 | DEOK               | 0.1                    |
| DLTAPLNT13.8 KV GEN2 | DEOK_RESID_AGG     | 23.8                   |
| DLTAPLNT13.8 KV GEN2 | DUQ_RESID_AGG      | 15.6                   |
| DLTAPLNT13.8 KV GEN2 | EKPC_RESID_AGG     | 4.4                    |
| DLTAPLNT13.8 KV GEN2 | EKPC-DEOK LOAD     | 0.1                    |
| DLTAPLNT13.8 KV GEN2 | FEOHIO_RESID_AGG   | 39                     |
| DLTAPLNT13.8 KV GEN2 | PENPOWER_RESID_AGG | 4.1                    |
| DLTAPLNT13.8 KV GEN2 | PEPCO DC           | 4.8                    |
| DLTAPLNT13.8 KV GEN2 | PEPCO MD           | 7.7                    |
| DLTAPLNT13.8 KV GEN2 | SMECO_RESID_AGG    | 1.5                    |
| DLTAPLNT13.8 KV GEN3 | AMP-ATSI OH        | 1.1                    |
| DLTAPLNT13.8 KV GEN3 | AMP-ATSI PA        | 0.1                    |
| DLTAPLNT13.8 KV GEN3 | BGE_RESID_AGG      | 11.2                   |
| DLTAPLNT13.8 KV GEN3 | CPP                | 0.8                    |
| DLTAPLNT13.8 KV GEN3 | DEK                | 1.1                    |
| DLTAPLNT13.8 KV GEN3 | DEOK               | 0.1                    |
| DLTAPLNT13.8 KV GEN3 | DEOK_RESID_AGG     | 23.8                   |
| DLTAPLNT13.8 KV GEN3 | DUQ_RESID_AGG      | 15.1                   |
| DLTAPLNT13.8 KV GEN3 | EKPC_RESID_AGG     | 4.4                    |
| DLTAPLNT13.8 KV GEN3 | EKPC-DEOK LOAD     | 0.1                    |
| DLTAPLNT13.8 KV GEN3 | FEOHIO_RESID_AGG   | 38.3                   |
| DLTAPLNT13.8 KV GEN3 | PENPOWER_RESID_AGG | 4.1                    |
| DLTAPLNT13.8 KV GEN3 | PEPCO DC           | 4.8                    |
| DLTAPLNT13.8 KV GEN3 | PEPCO MD           | 7.4                    |
| DLTAPLNT13.8 KV GEN3 | SMECO_RESID_AGG    | 1.5                    |
| DLTAPLNT18 KV GEN4   | AMP-ATSI OH        | 1.7                    |
| DLTAPLNT18 KV GEN4   | AMP-ATSI PA        | 0.2                    |

| Source                   | Sink               | Infeasible MW Quantity |
|--------------------------|--------------------|------------------------|
| DLTAPLNT18 KV GEN4       | BGE_RESID_AGG      | 14.7                   |
| DLTAPLNT18 KV GEN4       | CPP                | 1.3                    |
| DLTAPLNT18 KV GEN4       | DEK                | 1.6                    |
| DLTAPLNT18 KV GEN4       | DEOK               | 0.1                    |
| DLTAPLNT18 KV GEN4       | DEOK_RESID_AGG     | 35.3                   |
| DLTAPLNT18 KV GEN4       | DUQ_RESID_AGG      | 20.9                   |
| DLTAPLNT18 KV GEN4       | EKPC_RESID_AGG     | 6.6                    |
| DLTAPLNT18 KV GEN4       | EKPC-DEOK LOAD     | 0.1                    |
| DLTAPLNT18 KV GEN4       | FEOHIO_RESID_AGG   | 53.8                   |
| DLTAPLNT18 KV GEN4       | PENPOWER_RESID_AGG | 4.5                    |
| DLTAPLNT18 KV GEN4       | PEPCO DC           | 6.2                    |
| DLTAPLNT18 KV GEN4       | PEPCO MD           | 9.5                    |
| DLTAPLNT18 KV GEN4       | SMECO_RESID_AGG    | 2.1                    |
| DLTAPLNT18 KV GEN4       | WILLIAMSTOWN       | 0.1                    |
| DLTAPLNT18 KV ST7        | BGE_RESID_AGG      | 247.4                  |
| DRYBREAD34.5 KV DRYBRDSP | DOM_RESID_AGG      | 47.1                   |
| EDGEMOOR12 KV G10        | DPL_ODEC           | 1.4                    |
| EDGEMOOR13 KV HAYRD1     | DPL_ODEC           | 11.8                   |
| EDGEMOOR13 KV HAYRD1     | EASTON             | 0.3                    |
| EDGEMOOR13 KV HAYRD2     | DPL_ODEC           | 11.8                   |
| EDGEMOOR13 KV HAYRD2     | EASTON             | 0.3                    |
| EDGEMOOR13 KV HAYRD3     | DPL_ODEC           | 11.8                   |
| EDGEMOOR13 KV HAYRD3     | EASTON             | 0.3                    |
| EDGEMOOR13 KV HAYRD4     | DPL_ODEC           | 17.2                   |
| EDGEMOOR13 KV HAYRD4     | EASTON             | 0.4                    |
| EDGEMOOR13 KV HAYRD5     | AMP-ATSI OH        | 1.3                    |
| EDGEMOOR13 KV HAYRD5     | AMP-ATSI PA        | 0.1                    |
| EDGEMOOR13 KV HAYRD5     | BGE_RESID_AGG      | 13                     |
| EDGEMOOR13 KV HAYRD5     | CPP                | 1                      |
| EDGEMOOR13 KV HAYRD5     | DEK                | 1.3                    |
| EDGEMOOR13 KV HAYRD5     | DEOK               | 0.2                    |
| EDGEMOOR13 KV HAYRD5     | DEOK_RESID_AGG     | 30.5                   |
| EDGEMOOR13 KV HAYRD5     | EKPC_RESID_AGG     | 5.5                    |
| EDGEMOOR13 KV HAYRD5     | EKPC-DEOK LOAD     | 0.1                    |
| EDGEMOOR13 KV HAYRD5     | FEOHIO_RESID_AGG   | 44.6                   |
| EDGEMOOR13 KV HAYRD5     | PENPOWER_RESID_AGG | 5                      |
| EDGEMOOR13 KV HAYRD5     | PEPCO DC           | 5.9                    |
| EDGEMOOR13 KV HAYRD5     | PEPCO MD           | 8.7                    |
| EDGEMOOR13 KV HAYRD5     | SMECO_RESID_AGG    | 1.9                    |
| EDGEMOOR13 KV HAYRD6     | AMP-ATSI OH        | 1.3                    |

| Source               | Sink               | Infeasible MW Quantity |
|----------------------|--------------------|------------------------|
| EDGEMOOR13 KV HAYRD6 | AMP-ATSI PA        | 0.1                    |
| EDGEMOOR13 KV HAYRD6 | BGE_RESID_AGG      | 13                     |
| EDGEMOOR13 KV HAYRD6 | CPP                | 1                      |
| EDGEMOOR13 KV HAYRD6 | DEK                | 1.3                    |
| EDGEMOOR13 KV HAYRD6 | DEOK               | 0.2                    |
| EDGEMOOR13 KV HAYRD6 | DEOK_RESID_AGG     | 30.2                   |
| EDGEMOOR13 KV HAYRD6 | EKPC_RESID_AGG     | 5.4                    |
| EDGEMOOR13 KV HAYRD6 | EKPC-DEOK LOAD     | 0.1                    |
| EDGEMOOR13 KV HAYRD6 | FEOHIO_RESID_AGG   | 44.2                   |
| EDGEMOOR13 KV HAYRD6 | PENPOWER_RESID_AGG | 5                      |
| EDGEMOOR13 KV HAYRD6 | PEPCO DC           | 5.7                    |
| EDGEMOOR13 KV HAYRD6 | PEPCO MD           | 8.7                    |
| EDGEMOOR13 KV HAYRD6 | SMECO_RESID_AGG    | 1.9                    |
| EDGEMOOR13 KV HAYRD7 | AMP-ATSI OH        | 1.3                    |
| EDGEMOOR13 KV HAYRD7 | AMP-ATSI PA        | 0.1                    |
| EDGEMOOR13 KV HAYRD7 | BGE_RESID_AGG      | 12.9                   |
| EDGEMOOR13 KV HAYRD7 | CPP                | 1                      |
| EDGEMOOR13 KV HAYRD7 | DEK                | 1.3                    |
| EDGEMOOR13 KV HAYRD7 | DEOK               | 0.2                    |
| EDGEMOOR13 KV HAYRD7 | DEOK_RESID_AGG     | 30.1                   |
| EDGEMOOR13 KV HAYRD7 | EKPC_RESID_AGG     | 5.4                    |
| EDGEMOOR13 KV HAYRD7 | EKPC-DEOK LOAD     | 0.1                    |
| EDGEMOOR13 KV HAYRD7 | FEOHIO_RESID_AGG   | 43.5                   |
| EDGEMOOR13 KV HAYRD7 | PENPOWER_RESID_AGG | 4.9                    |
| EDGEMOOR13 KV HAYRD7 | PEPCO DC           | 5.6                    |
| EDGEMOOR13 KV HAYRD7 | PEPCO MD           | 8.6                    |
| EDGEMOOR13 KV HAYRD7 | SMECO_RESID_AGG    | 1.9                    |
| EDGEMOOR13 KV UNIT03 | DPL_ODEC           | 8.1                    |
| EDGEMOOR13 KV UNIT03 | EASTON             | 0.2                    |
| EDGEMOOR18 KV HAYRD8 | AMP-ATSI OH        | 1.9                    |
| EDGEMOOR18 KV HAYRD8 | AMP-ATSI PA        | 0.2                    |
| EDGEMOOR18 KV HAYRD8 | BGE_RESID_AGG      | 15.9                   |
| EDGEMOOR18 KV HAYRD8 | CPP                | 1.5                    |
| EDGEMOOR18 KV HAYRD8 | DEK                | 2                      |
| EDGEMOOR18 KV HAYRD8 | DEOK               | 0.1                    |
| EDGEMOOR18 KV HAYRD8 | DEOK_RESID_AGG     | 43.1                   |
| EDGEMOOR18 KV HAYRD8 | EKPC_RESID_AGG     | 8.2                    |
| EDGEMOOR18 KV HAYRD8 | EKPC-DEOK LOAD     | 0.1                    |
| EDGEMOOR18 KV HAYRD8 | FEOHIO_RESID_AGG   | 59.8                   |
| EDGEMOOR18 KV HAYRD8 | PENPOWER_RESID_AGG | 5.3                    |

| Source                  | Sink                   | Infeasible MW Quantity |
|-------------------------|------------------------|------------------------|
| EDGEMOOR18 KV HAYRD8    | PEPCO DC               | 7                      |
| EDGEMOOR18 KV HAYRD8    | PEPCO MD               | 10.9                   |
| EDGEMOOR18 KV HAYRD8    | SMECO_RESID_AGG        | 2.7                    |
| EDGEMOOR18 KV HAYRD8    | WILLIAMSTOWN           | 0.1                    |
| EDGEMOOR19 KV UNIT04    | DPL_ODEC               | 16.4                   |
| EDGEMOOR19 KV UNIT04    | EASTON                 | 0.4                    |
| EDGEMOOR23 KV UNIT05    | BERLIN DPL             | 0.1                    |
| EDGEMOOR23 KV UNIT05    | DPL_ODEC               | 42.3                   |
| EDGEMOOR23 KV UNIT05    | EASTON                 | 1                      |
| ELIZRIV 13.8 KV GT1     | DOM_RESID_AGG          | 75.6                   |
| ELIZRIV 13.8 KV GT2     | DOM_RESID_AGG          | 74.3                   |
| ELIZRIV 13.8 KV GT3     | DOM_RESID_AGG          | 75.5                   |
| ELKHYDRO4 KV ELK        | AEPAPCO_RESID_AGG      | 1                      |
| ELKHYDRO4 KV ELK        | AEPKY_RESID_AGG        | 0.1                    |
| ELKHYDRO4 KV ELK        | AEPOHIO W.O. MON POWER | 7.9                    |
| ELKHYDRO4 KV ELK        | BLUE RIDGE             | 0.4                    |
| EVERTSUB34.5 KV ARMENIA | APS_RESID_AGG          | 1.6                    |
| EVERTSUB34.5 KV ARMENIA | DPL_ODEC               | 1.7                    |
| FAIRVWEC21 KV S1        | PENELEC_RESID_AGG      | 90.1                   |
| FLATLICK18 KV 1         | AEPOHIO W.O. MON POWER | 11.3                   |
| FLATLICK18 KV 2         | AEPOHIO W.O. MON POWER | 10.4                   |
| FLATLICK18 KV 3         | AEPOHIO W.O. MON POWER | 9                      |
| FLATLICK18 KV 4         | AEPOHIO W.O. MON POWER | 8.7                    |
| FLATLICK18 KV 5         | AEPOHIO W.O. MON POWER | 8.3                    |
| FOOTHILL18 KV UNIT 4    | BGE_RESID_AGG          | 4.8                    |
| FOOTHILL18 KV UNIT 4    | FEOHIO_RESID_AGG       | 0.5                    |
| FOOTHILL18 KV UNIT 4    | PEPCO DC               | 1.4                    |
| FOOTHILL18 KV UNIT 4    | PEPCO MD               | 1.7                    |
| FOOTHILL18 KV UNIT 4    | SMECO_RESID_AGG        | 0.7                    |
| FOOTHILL18 KV UNIT 5    | BGE_RESID_AGG          | 4.8                    |
| FOOTHILL18 KV UNIT 5    | FEOHIO_RESID_AGG       | 0.5                    |
| FOOTHILL18 KV UNIT 5    | PEPCO DC               | 1.4                    |
| FOOTHILL18 KV UNIT 5    | PEPCO MD               | 1.7                    |
| FOOTHILL18 KV UNIT 5    | SMECO_RESID_AGG        | 0.7                    |
| FOURRIVR13.8 KV GT601   | DOM_RESID_AGG          | 4.9                    |
| FOURRIVR18 KV NUG1      | DOM_RESID_AGG          | 0.4                    |
| FOWLER 34.5 KV FWL2-1WF | AEPOHIO W.O. MON POWER | 3.2                    |
| FOWLER 34.5 KV FWL2-2WF | AEPOHIO W.O. MON POWER | 3.2                    |
| FOWLER 34.5 KV FWL2-3WF | AEPOHIO W.O. MON POWER | 3.2                    |
| FOWLER 34.5 KV FWL2-4WF | AEPOHIO W.O. MON POWER | 3                      |

| Source                  | Sink                   | Infeasible MW Quantity |
|-------------------------|------------------------|------------------------|
| FOWLER 34.5 KV FWLR1AWF | AEPAPCO_RESID_AGG      | 2.8                    |
| FOWLER 34.5 KV FWLR1AWF | AEPKY_RESID_AGG        | 0.4                    |
| FOWLER 34.5 KV FWLR1AWF | AEPOHIO W.O. MON POWER | 9.8                    |
| FOWLER 34.5 KV FWLR1BWF | AEPAPCO_RESID_AGG      | 2.7                    |
| FOWLER 34.5 KV FWLR1BWF | AEPKY_RESID_AGG        | 0.4                    |
| FOWLER 34.5 KV FWLR1BWF | AEPOHIO W.O. MON POWER | 9.6                    |
| FOWLER 34.5 KV FWLR3WF  | AEPAPCO_RESID_AGG      | 6.4                    |
| GASTON4 14 KV G1        | DOM_RESID_AGG          | 38.4                   |
| GASTON4 14 KV G2        | DOM_RESID_AGG          | 38.4                   |
| GASTON4 14 KV G3        | DOM_RESID_AGG          | 38.4                   |
| GASTON4 14 KV G4        | DOM_RESID_AGG          | 38.4                   |
| GAVINAEP26 KV GV1       | AEPOHIO W.O. MON POWER | 10.9                   |
| GAVINAEP26 KV GV1       | AMP-OHIO               | 0.5                    |
| GAVINAEP26 KV GV2       | AEPOHIO W.O. MON POWER | 2.4                    |
| GAVINAEP26 KV GV2       | AMP-OHIO               | 0.5                    |
| GRASSFID35 KV GRASFDSP  | DOM_RESID_AGG          | 7.9                    |
| GRAVLNK 13 KV GT3       | DOM_RESID_AGG          | 58.7                   |
| GRAVLNK 13 KV GT4       | DOM_RESID_AGG          | 58.7                   |
| GRAVLNK 13 KV GT5       | DOM_RESID_AGG          | 1                      |
| GRAVLNK 13 KV GT6       | DOM_RESID_AGG          | 1.1                    |
| GRAVLNK 13 KV GTS       | DOM_RESID_AGG          | 19.3                   |
| GRAYFR_113 KV 1 GEN     | AMP-ATSI OH            | 1.7                    |
| GRAYFR_113 KV 1 GEN     | AMP-ATSI PA            | 0.2                    |
| GRAYFR_113 KV 1 GEN     | BGE_RESID_AGG          | 14.8                   |
| GRAYFR_113 KV 1 GEN     | CPP                    | 1.3                    |
| GRAYFR_113 KV 1 GEN     | DEK                    | 1.6                    |
| GRAYFR_113 KV 1 GEN     | DEOK                   | 0.1                    |
| GRAYFR_113 KV 1 GEN     | DEOK_RESID_AGG         | 39                     |
| GRAYFR_113 KV 1 GEN     | EKPC_RESID_AGG         | 7.2                    |
| GRAYFR_113 KV 1 GEN     | EKPC-DEOK LOAD         | 0.1                    |
| GRAYFR_113 KV 1 GEN     | FEOHIO_RESID_AGG       | 54                     |
| GRAYFR_113 KV 1 GEN     | PENPOWER_RESID_AGG     | 5.6                    |
| GRAYFR_113 KV 1 GEN     | PEPCO DC               | 7                      |
| GRAYFR_113 KV 1 GEN     | PEPCO MD               | 10.5                   |
| GRAYFR_113 KV 1 GEN     | SMECO_RESID_AGG        | 2.4                    |
| GRAYFR_113 KV 1 GEN     | WILLIAMSTOWN           | 0.1                    |
| GREENECC23 KV GREENECC  | AEPOHIO W.O. MON POWER | 3.2                    |
| GREENECC23 KV GREENECC  | BUCKEYE - AEPOH        | 0.1                    |
| GREENECC23 KV GREENECC  | DUQ_RESID_AGG          | 20.6                   |
| GRNSVIL 20 KV GREENSST  | DOM_RESID_AGG          | 1116                   |



| Source                | Sink                   | Infeasible MW Quantity |
|-----------------------|------------------------|------------------------|
| GUERNSEY23 KV 11CC    | FEOHIO_RESID_AGG       | 19.3                   |
| GUERNSEY23 KV 21CC    | FEOHIO_RESID_AGG       | 13.5                   |
| HALLBRAN13.8 KV G1    | DOM_RESID_AGG          | 35.7                   |
| HCF 13.8 KV GT1       | DOM_RESID_AGG          | 47.9                   |
| HIBBMILL26 KV CTG-1   | FEOHIO_RESID_AGG       | 67.5                   |
| HIBBMILL26 KV CTG-2   | FEOHIO_RESID_AGG       | 67.6                   |
| HICRUNEC22 KV 1S STG  | AMP-ATSI OH            | 17.3                   |
| HICRUNEC22 KV 1S STG  | CPP                    | 5.6                    |
| HICRUNEC22 KV 1S STG  | FEOHIO_RESID_AGG       | 450.9                  |
| INDECK 24 KV STG      | AEPAPCO_RESID_AGG      | 42.7                   |
| INDECK 24 KV STG      | AEPKY_RESID_AGG        | 7.8                    |
| INDECK 24 KV STG      | AEPOHIO W.O. MON POWER | 47.9                   |
| INDECK 24 KV STG      | AK STEEL               | 0.2                    |
| INDECK 24 KV STG      | AMP-OHIO               | 0.7                    |
| INDECK 24 KV STG      | BLUE RIDGE             | 1.9                    |
| INDECK 24 KV STG      | BUCK-CIN               | 0.1                    |
| INDECK 24 KV STG      | BUCKEYE - AEPIM        | 0.1                    |
| INDECK 24 KV STG      | BUCKEYE - AEPOH        | 1.5                    |
| INDECK 24 KV STG      | BUCKEYE - DPL          | 0.4                    |
| INDECK 24 KV STG      | BUCK-FE                | 0.3                    |
| INDECK 24 KV STG      | MERIDIAN EWHITLEY      | 0.1                    |
| KAMMER2 26 KV ML2     | BUCK-FE                | 0.9                    |
| KENT 13 KV DOVER1CT   | DPL_ODEC               | 4.5                    |
| KENT 13 KV DOVER2CT   | DPL_ODEC               | 4.5                    |
| KERRDAM 14 KV G1      | DOM_RESID_AGG          | 3.5                    |
| KERRDAM 14 KV G2      | DOM_RESID_AGG          | 9.6                    |
| KERRDAM 14 KV G3      | DOM_RESID_AGG          | 9.6                    |
| KERRDAM 14 KV G4      | DOM_RESID_AGG          | 9.6                    |
| KERRDAM 14 KV G5      | DOM_RESID_AGG          | 9.6                    |
| KERRDAM 14 KV G6      | DOM_RESID_AGG          | 9.6                    |
| KERRDAM 14 KV G7      | DOM_RESID_AGG          | 9.6                    |
| KEYSTNE 13 KV _UN1_15 | DAY_RESID_AGG          | 30.8                   |
| KEYSTNE 13 KV _UN2_15 | DAY_RESID_AGG          | 30.7                   |
| KEYSTNE 13 KV _UN3_15 | DAY_RESID_AGG          | 31                     |
| KEYSTNE 13 KV _UN4_15 | DAY_RESID_AGG          | 30.7                   |
| KEYSTONE20 KV UNIT 1  | BGE_RESID_AGG          | 107.1                  |
| KEYSTONE20 KV UNIT 1  | DPL_ODEC               | 2.9                    |
| KEYSTONE20 KV UNIT 2  | BGE_RESID_AGG          | 107.3                  |
| KEYSTONE20 KV UNIT 2  | DPL_ODEC               | 0.9                    |
| KEYSTONE20 KV UNIT 3  | BGE_RESID_AGG          | 6                      |

| Source                 | Sink                   | Infeasible MW Quantity |
|------------------------|------------------------|------------------------|
| KYGERCRE15.5 KV KY1    | BUCKEYE - AEPOH        | 6.3                    |
| KYGERCRE15.5 KV KY1    | PENELEC                | 74.1                   |
| LADYSMCT14 KV GT1      | DOM_RESID_AGG          | 0.3                    |
| LADYSMCT14 KV GT2      | DOM_RESID_AGG          | 0.6                    |
| LAWRENC218 KV S1       | AEPOHIO W.O. MON POWER | 32.6                   |
| LAWRENC218 KV S1       | AMP-OHIO               | 0.3                    |
| LAWRENC218 KV S2       | AEPOHIO W.O. MON POWER | 32.1                   |
| LAWRENC218 KV S2       | AMP-OHIO               | 0.3                    |
| LGHTFOOT35 KV NORGE_SP | DOM_RESID_AGG          | 7.8                    |
| LINWDPE 18 KV STM      | AMP-ATSI OH            | 6.8                    |
| LINWDPE 18 KV STM      | AMP-ATSI PA            | 0.7                    |
| LINWDPE 18 KV STM      | BGE_RESID_AGG          | 52.9                   |
| LINWDPE 18 KV STM      | CPP                    | 5.2                    |
| LINWDPE 18 KV STM      | DEK                    | 6.5                    |
| LINWDPE 18 KV STM      | DEOK                   | 0.2                    |
| LINWDPE 18 KV STM      | DEOK_RESID_AGG         | 155.6                  |
| LINWDPE 18 KV STM      | DUQ_RESID_AGG          | 84.6                   |
| LINWDPE 18 KV STM      | EKPC_RESID_AGG         | 29.2                   |
| LINWDPE 18 KV STM      | EKPC-DEOK LOAD         | 0.3                    |
| LINWDPE 18 KV STM      | FEOHIO_RESID_AGG       | 206.1                  |
| LINWDPE 18 KV STM      | PENNPOWER_RESID_AGG    | 17                     |
| LINWDPE 18 KV STM      | PEPCO DC               | 23.4                   |
| LINWDPE 18 KV STM      | PEPCO MD               | 32.7                   |
| LINWDPE 18 KV STM      | SMECO_RESID_AGG        | 8.9                    |
| LINWDPE 18 KV STM      | WILLIAMSTOWN           | 0.3                    |
| LOWMOOR 13 KV GTS      | DOM_RESID_AGG          | 1.9                    |
| LRDTWNEC19 KV ST10     | FEOHIO_RESID_AGG       | 361.4                  |
| MICHFE                 | PENELEC                | 141.9                  |
| MIDLOTH 35 KV DRYBRIBS | DOM_RESID_AGG          | 11.1                   |
| MISO                   | AEC - AP               | 3.7                    |
| MISO                   | AEPAPCO_RESID_AGG      | 142.7                  |
| MISO                   | AEPIM_RESID_AGG        | 100.8                  |
| MISO                   | AEPKY_RESID_AGG        | 26.7                   |
| MISO                   | AEPOHIO W.O. MON POWER | 160.2                  |
| MISO                   | AK STEEL               | 0.8                    |
| MISO                   | AMP-OHIO               | 18.4                   |
| MISO                   | APS_RESID_AGG          | 406.9                  |
| MISO                   | BLUE RIDGE             | 6.5                    |
| MISO                   | BUCK-CIN               | 0.2                    |
| MISO                   | BUCKEYE - AEPIM        | 0.1                    |

| Source                  | Sink                   | Infeasible MW Quantity |
|-------------------------|------------------------|------------------------|
| MISO                    | BUCKEYE - AEPOH        | 3.8                    |
| MISO                    | BUCKEYE - DPL          | 0.9                    |
| MISO                    | BUCK-FE                | 0.7                    |
| MISO                    | DAY_RESID_AGG          | 79.4                   |
| MISO                    | HREA - AP              | 0.9                    |
| MISO                    | LIDA - AP              | 0.2                    |
| MISO                    | MERIDIAN EWHITLEY      | 0.7                    |
| MISO                    | MON POWER              | 15.1                   |
| MISO                    | MONT ALTO - AP         | 0.1                    |
| MISO                    | NEWMARTINSVILLE-AP     | 0.3                    |
| MISO                    | PHILIPPI - AP          | 0.2                    |
| MISO                    | TARENTUM - AP          | 0.2                    |
| MOTTVILL2 KV MO1        | AEPAPCO_RESID_AGG      | 0.5                    |
| MOTTVILL2 KV MO1        | AEPKY_RESID_AGG        | 0.1                    |
| MOTTVILL2 KV MO1        | AEPOHIO W.O. MON POWER | 4.5                    |
| MOTTVILL2 KV MO1        | BLUE RIDGE             | 0.4                    |
| MOTTVILL2 KV MO2        | AEPAPCO_RESID_AGG      | 0.5                    |
| MOTTVILL2 KV MO2        | AEPKY_RESID_AGG        | 0.1                    |
| MOTTVILL2 KV MO2        | AEPOHIO W.O. MON POWER | 4.3                    |
| MOTTVILL2 KV MO2        | BLUE RIDGE             | 0.4                    |
| MOTTVILL2 KV MO3        | AEPAPCO_RESID_AGG      | 0.5                    |
| MOTTVILL2 KV MO3        | AEPKY_RESID_AGG        | 0.1                    |
| MOTTVILL2 KV MO3        | AEPOHIO W.O. MON POWER | 4.3                    |
| MOTTVILL2 KV MO3        | BLUE RIDGE             | 0.4                    |
| MOTTVILL2 KV MO4        | AEPAPCO_RESID_AGG      | 0.5                    |
| MOTTVILL2 KV MO4        | AEPKY_RESID_AGG        | 0.1                    |
| MOTTVILL2 KV MO4        | AEPOHIO W.O. MON POWER | 4.3                    |
| MOTTVILL2 KV MO4        | BLUE RIDGE             | 0.4                    |
| MOUNTAIN26 KV MT1       | AEPOHIO W.O. MON POWER | 44.7                   |
| MTNTOP 34.5 KV MHOOPWF2 | APS_RESID_AGG          | 3.7                    |
| MTNTOP 34.5 KV MHOOPWF2 | DPL_ODEC               | 3.4                    |
| MTSTORM422 KV G1        | DOM_RESID_AGG          | 384.6                  |
| MTSTORM422 KV G2        | DOM_RESID_AGG          | 388.1                  |
| MTSTORM422 KV G3        | DOM_RESID_AGG          | 364.8                  |
| MTSTORM435 KV GT1       | DOM_RESID_AGG          | 8.3                    |
| N ILLINOIS HUB          | COOK                   | 146.6                  |
| NAMPTON 138 KV NUG      | AMP-METED              | 0.1                    |
| NAMPTON 138 KV NUG      | METED                  | 2.5                    |
| NAMPTON 138 KV NUG      | METED_RESID_AGG        | 8.3                    |
| NANNA4 22 KV G1         | DOM_RESID_AGG          | 104.4                  |

| Source                   | Sink                   | Infeasible MW Quantity |
|--------------------------|------------------------|------------------------|
| NANNA4 22 KV G2          | DOM_RESID_AGG          | 396.5                  |
| NEW_BALT34.5 KV NBALTMWF | APS_RESID_AGG          | 0.4                    |
| NORTHST 12 KV G11        | DPL_ODEC               | 3.9                    |
| NORTHST 12 KV G11        | EASTON                 | 0.1                    |
| NORTHST 69 KV GF         | DPL_ODEC               | 1.3                    |
| NYIS                     | AECO_RESID_AGG         | 0.1                    |
| NYIS                     | AMP-OHIO               | 3.6                    |
| NYIS                     | BUCKEYE - AEPIM        | 0.5                    |
| NYIS                     | BUCKEYE - AEPOH        | 40.4                   |
| NYIS                     | BUCKEYE - DPL          | 10                     |
| NYIS                     | PENELEC_RESID_AGG      | 17.9                   |
| ONTELAUN18 KV STM        | PEPCO DC               | 6                      |
| ONTELAUN18 KV STM        | PEPCO MD               | 9.1                    |
| ONTELAUN18 KV STM        | SMECO_RESID_AGG        | 0.2                    |
| PAULDNG334.5 KV PAUL3WF  | AEPOHIO W.O. MON POWER | 6.9                    |
| PEACHBOT22 KV UNIT02     | DPL_ODEC               | 8.6                    |
| PEACHBOT22 KV UNIT02     | EASTON                 | 0.2                    |
| PEACHBOT22 KV UNIT03     | DPL_ODEC               | 8.6                    |
| PEACHBOT22 KV UNIT03     | EASTON                 | 0.2                    |
| PENNMAR 22 KV YOUGHUN    | PENELEC_RESID_AGG      | 0.1                    |
| PERRY_FE22 KV PR10       | FEOHIO_RESID_AGG       | 355.7                  |
| PERRY_FE22 KV PR10       | PENPOWER_RESID_AGG     | 1.2                    |
| PHILPOTT138 KV UNITS1-3  | DOM_RESID_AGG          | 3.7                    |
| PLYWOOD 13.8 KV PLYWODBI | DOM_RESID_AGG          | 31.6                   |
| POLYESTR13.8 KV G1       | DOM_RESID_AGG          | 35.1                   |
| PORTLAND13 KV CT 3       | METED                  | 0.3                    |
| PORTLAND13 KV CT 3       | METED_RESID_AGG        | 0.6                    |
| PORTLAND13 KV CT 4       | METED                  | 0.4                    |
| PORTLAND13 KV CT 4       | METED_RESID_AGG        | 1.3                    |
| PORTLAND13 KV CT 5       | AMP-METED              | 0.1                    |
| PORTLAND13 KV CT 5       | METED                  | 3.7                    |
| PORTLAND13 KV CT 5       | METED_RESID_AGG        | 11.6                   |
| POWHATAN35 KV POWHA2SP   | DOM_RESID_AGG          | 6.4                    |
| PRINTZ 18 KV STG         | AMP-ATSI OH            | 5.6                    |
| PRINTZ 18 KV STG         | AMP-ATSI PA            | 0.5                    |
| PRINTZ 18 KV STG         | BGE_RESID_AGG          | 43.1                   |
| PRINTZ 18 KV STG         | CPP                    | 4.3                    |
| PRINTZ 18 KV STG         | DEK                    | 5.6                    |
| PRINTZ 18 KV STG         | DEOK                   | 0.2                    |
| PRINTZ 18 KV STG         | DEOK_RESID_AGG         | 125.8                  |

| Source                | Sink                   | Infeasible MW Quantity |
|-----------------------|------------------------|------------------------|
| PRINTZ 18 KV STG      | EKPC_RESID_AGG         | 23.8                   |
| PRINTZ 18 KV STG      | EKPC-DEOK LOAD         | 0.3                    |
| PRINTZ 18 KV STG      | FEOHIO_RESID_AGG       | 166.4                  |
| PRINTZ 18 KV STG      | PENPOWER_RESID_AGG     | 13.9                   |
| PRINTZ 18 KV STG      | PEPCO DC               | 19.5                   |
| PRINTZ 18 KV STG      | PEPCO MD               | 27                     |
| PRINTZ 18 KV STG      | SMECO_RESID_AGG        | 7.3                    |
| PRINTZ 18 KV STG      | WILLIAMSTOWN           | 0.2                    |
| PSEGGLOB18 KV 6       | BGE_RESID_AGG          | 9.2                    |
| PSEGGLOB18 KV 6       | FEOHIO_RESID_AGG       | 0.3                    |
| PSEGGLOB18 KV 6       | PEPCO DC               | 1.8                    |
| PSEGGLOB18 KV 6       | PEPCO MD               | 2.3                    |
| PSEGGLOB18 KV 6       | SMECO_RESID_AGG        | 0.9                    |
| PSEGGLOB18 KV 7       | BGE_RESID_AGG          | 9.2                    |
| PSEGGLOB18 KV 7       | FEOHIO_RESID_AGG       | 0.3                    |
| PSEGGLOB18 KV 7       | PEPCO DC               | 1.8                    |
| PSEGGLOB18 KV 7       | PEPCO MD               | 2.3                    |
| PSEGGLOB18 KV 7       | SMECO_RESID_AGG        | 0.9                    |
| PSEGGLOB18 KV 8       | BGE_RESID_AGG          | 9.2                    |
| PSEGGLOB18 KV 8       | FEOHIO_RESID_AGG       | 0.3                    |
| PSEGGLOB18 KV 8       | PEPCO DC               | 1.8                    |
| PSEGGLOB18 KV 8       | PEPCO MD               | 2.3                    |
| PSEGGLOB18 KV 8       | SMECO_RESID_AGG        | 0.9                    |
| PSEGGLOB22 KV 5       | BGE_RESID_AGG          | 17.2                   |
| PSEGGLOB22 KV 5       | FEOHIO_RESID_AGG       | 0.3                    |
| PSEGGLOB22 KV 5       | PEPCO DC               | 4.2                    |
| PSEGGLOB22 KV 5       | PEPCO MD               | 5.3                    |
| PSEGGLOB22 KV 5       | SMECO_RESID_AGG        | 1.9                    |
| REMNTNCT18 KV GT1     | DOM_RESID_AGG          | 0.3                    |
| REMNTNCT18 KV GT2     | DOM_RESID_AGG          | 0.3                    |
| REMNTNCT18 KV GT3     | DOM_RESID_AGG          | 0.3                    |
| REMNTNCT18 KV GT4     | DOM_RESID_AGG          | 0.6                    |
| ROCKPOR226 KV RP1     | AEPOHIO W.O. MON POWER | 287.5                  |
| ROCKPOR226 KV RP1     | AMP-OHIO               | 1.9                    |
| ROCKPOR226 KV RP2     | AEPOHIO W.O. MON POWER | 282.8                  |
| ROCKPOR226 KV RP2     | AMP-OHIO               | 1.9                    |
| ROCKSPRI18 KV CT3     | DPL_ODEC               | 1.5                    |
| ROCKSPRI18 KV CT4     | DPL_ODEC               | 1.5                    |
| ROCKSPRI24 KV WCATSTG | APS_RESID_AGG          | 67.8                   |
| ROCKSPRI24 KV WCATSTG | DPL_ODEC               | 55.4                   |

| Source                   | Sink                   | Infeasible MW Quantity |
|--------------------------|------------------------|------------------------|
| RORAPIDS14 KV G1         | DOM_RESID_AGG          | 16.9                   |
| RORAPIDS14 KV G2         | DOM_RESID_AGG          | 16.8                   |
| RORAPIDS14 KV G3         | DOM_RESID_AGG          | 16.8                   |
| RORAPIDS14 KV G4         | DOM_RESID_AGG          | 16.9                   |
| ROSEMARY13.8 KV NUG      | DOM_RESID_AGG          | 115.7                  |
| SALEM 25 KV SALEM1       | DPL_ODEC               | 8                      |
| SALEM 25 KV SALEM1       | EASTON                 | 0.2                    |
| SALEM 25 KV SALEM2       | DPL_ODEC               | 8                      |
| SALEM 25 KV SALEM2       | EASTON                 | 0.2                    |
| SANNA 230 KV G1          | DOM_RESID_AGG          | 0.3                    |
| SANNA 230 KV G2          | DOM_RESID_AGG          | 0.5                    |
| SBEND 18 KV CT1          | HREA - AP              | 0.1                    |
| SBEND 18 KV CT1          | MON POWER              | 1.4                    |
| SBEND 18 KV CT1          | NEWMARTINSVILLE-AP     | 0.1                    |
| SBEND 18 KV CT2          | HREA - AP              | 0.1                    |
| SBEND 18 KV CT2          | MON POWER              | 1.3                    |
| SBEND 18 KV CT2          | NEWMARTINSVILLE-AP     | 0.1                    |
| SBEND 18 KV CT3          | HREA - AP              | 0.1                    |
| SBEND 18 KV CT3          | MON POWER              | 1.4                    |
| SBEND 18 KV CT3          | NEWMARTINSVILLE-AP     | 0.1                    |
| SBEND 18 KV CT4          | HREA - AP              | 0.1                    |
| SBEND 18 KV CT4          | MON POWER              | 1.4                    |
| SBEND 18 KV CT4          | NEWMARTINSVILLE-AP     | 0.1                    |
| SHAMPTON115 KV G1        | DOM_RESID_AGG          | 35.6                   |
| SHAWNEE 13 KV SHAWNE     | METED                  | 0.4                    |
| SHAWNEE 13 KV SHAWNE     | METED_RESID_AGG        | 1.1                    |
| SHILLAGH34.5 KV SHILLASP | DOM_RESID_AGG          | 31.4                   |
| SJEC 18 KV STG           | AEPAPCO_RESID_AGG      | 162.2                  |
| SJEC 18 KV STG           | AEPKY_RESID_AGG        | 29.7                   |
| SJEC 18 KV STG           | AEPOHIO W.O. MON POWER | 201.5                  |
| SJEC 18 KV STG           | AK STEEL               | 0.9                    |
| SJEC 18 KV STG           | AMP-OHIO               | 2.9                    |
| SJEC 18 KV STG           | BLUE RIDGE             | 7.4                    |
| SJEC 18 KV STG           | BUCK-CIN               | 0.3                    |
| SJEC 18 KV STG           | BUCKEYE - AEPOH        | 5.6                    |
| SJEC 18 KV STG           | BUCKEYE - DPL          | 1.4                    |
| SJEC 18 KV STG           | BUCK-FE                | 1.1                    |
| SJEC 18 KV STG           | MERIDIAN EWHITLEY      | 0.4                    |
| SMITHFLD35 KV SOLIDASP   | DOM_RESID_AGG          | 7.8                    |
| SMITHMOU13.8 KV SM2      | AEPOHIO W.O. MON POWER | 0.1                    |

| Source                   | Sink                   | Infeasible MW Quantity |
|--------------------------|------------------------|------------------------|
| SOUTH                    | DOM_RESID_AGG          | 35.2                   |
| SPRINGDA13 KV AES 1      | APS_RESID_AGG          | 0.9                    |
| SPRINGDA13 KV AES 1      | MON POWER              | 0.2                    |
| SPRINGDA13 KV AES 2      | APS_RESID_AGG          | 0.9                    |
| SPRINGDA13 KV AES 2      | MON POWER              | 0.2                    |
| SPRINGDA18 KV ST5        | AEC - AP               | 0.7                    |
| SPRINGDA18 KV ST5        | APS_RESID_AGG          | 15.6                   |
| SPRINGDA18 KV ST5        | MON POWER              | 4                      |
| SPRINGDA18 KV ST5        | NEWMARTINSVILLE-AP     | 0.1                    |
| STGCOACH34.5 KV STGCHSP  | DOM_RESID_AGG          | 35.9                   |
| SUFFOLK 35 KV PLSNTHSP   | DOM_RESID_AGG          | 7.9                    |
| SUFFOLK 35 KV SUFFLKSP   | DOM_RESID_AGG          | 5.8                    |
| SURRY4 22 KV G1          | DOM_RESID_AGG          | 568.2                  |
| SURRY4 22 KV G2          | DOM_RESID_AGG          | 571.4                  |
| SUSQUEHA24 KV UNIT01     | BGE_RESID_AGG          | 52.2                   |
| SUSQUEHA24 KV UNIT01     | PENELEC_RESID_AGG      | 19.6                   |
| SUSQUEHA24 KV UNIT02     | BGE_RESID_AGG          | 52.1                   |
| SUSQUEHA24 KV UNIT02     | PENELEC_RESID_AGG      | 19.7                   |
| TANNERSC18 KV TC3        | MIAMIFOR18 KV G6       | 58.2                   |
| TIDD_AEP24 KV CD1        | BUCK-FE                | 0.6                    |
| TIDD_AEP24 KV CD2        | BUCK-FE                | 42.5                   |
| TIDD_AEP26 KV CD3        | BUCK-FE                | 39                     |
| TIMBERRD34.5 KV TIMR2WF1 | AEPOHIO W.O. MON POWER | 13                     |
| TWELVEPO13 KV 1          | DUQ_RESID_AGG          | 1.2                    |
| TWELVEPO13 KV 2          | DUQ_RESID_AGG          | 1.2                    |
| TWELVEPO13 KV 3          | DUQ_RESID_AGG          | 1.2                    |
| TWELVEPO13 KV 4          | DUQ_RESID_AGG          | 1.1                    |
| TWELVEPO13 KV 5          | DUQ_RESID_AGG          | 1.1                    |
| TWELVEPO13 KV 6          | DUQ_RESID_AGG          | 0.7                    |
| WCATWIND34.5 KV WLDCATWF | AEPOHIO W.O. MON POWER | 3.2                    |
| WELCO 35 KV WATLNGSP     | DOM_RESID_AGG          | 7.9                    |
| WESTDPL 12 KV G1         | DPL_ODEC               | 1.6                    |
| ZELDA 18 KV UNIT 1       | AMP-OHIO               | 0.1                    |
| ZELDA 18 KV UNIT 2       | AMP-OHIO               | 0.1                    |
| ZELDA 18 KV UNIT 3       | AMP-OHIO               | 0.1                    |