Pepco Holdings, Inc

NEMSTF

Use Case for Current / Proposed Approaches to NEM Excess Injection Accounting

(Negative eSchedule vs. Positive eMeter)

5/25/2012

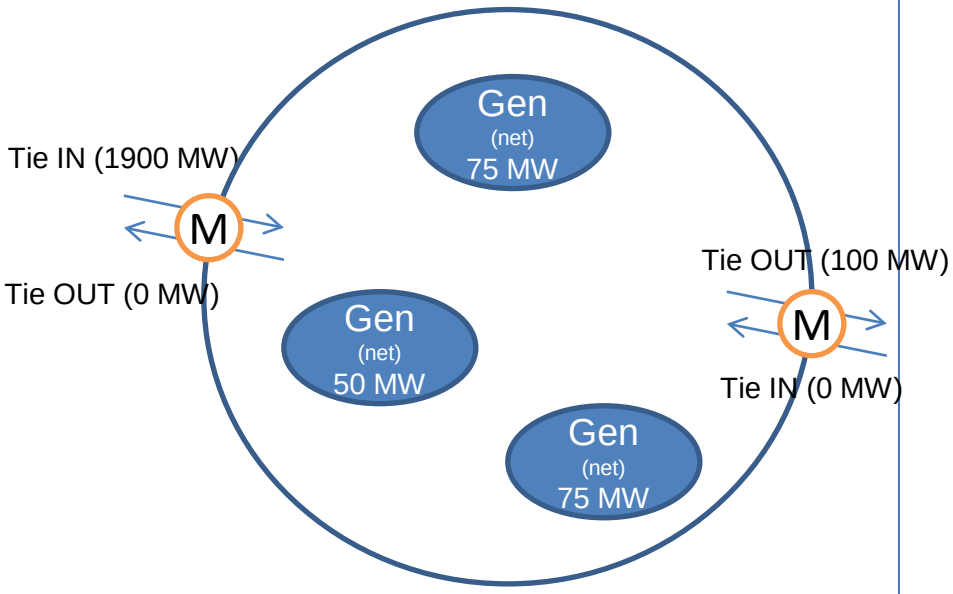
Discussion

- Use case based on 85 MW **N**et **E**nergy **M**etered excess injection
- Current state - using a negative eSchedule approach reduces the hourly load responsibility of the supplier of record, but doesn't necessarily allocate the value of the NEM excess generation to the party responsible for purchasing the output.
  - PJM is unable to "see" the true zone load when "negative eSchedules" are used because the excess off-sets actual load; generation is accounted for as load, negative load in this instance, and the zone's load is understated
  - PJM's eSchedule system cannot process negative, hourly values.
  - Any non-interval metered excess (credit) flows to all suppliers as "negative load" via UFE resulting in lower energy responsibilities
  - Fairly easy to implement
- Proposed state – using a positive eMeter value to properly account for the NEM excess as a generator
  - PJM sees the true zone load via PJM eMTR
  - Generation (eMTR) and Load (eSchedules) are properly accounted-for
  - NEM excess is paid / distributed to the entity that has title to the generation output
    - Provides source of revenue to third-party supplier, default supplier, and / or EDC to pay NEM customer for excess generation, in accordance with state retail tariffs
  - Requires ability to capture the next day within EDC zonal bus models and settlement systems, the previous day's hourly interval-metered excess net generation from NEM facilities and report that generation into PJM eMTR

Current – Negative eSchedules to "Account" for Excess NEM Injection

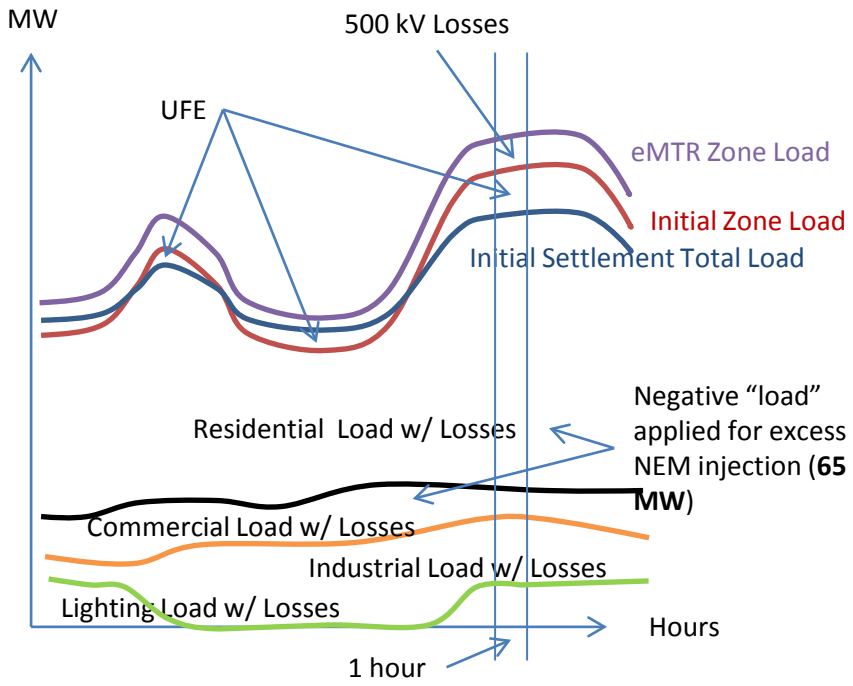
65 MW of NEM Excess (interval-metered negative load) and 20 MW of NEM Excess ("carried forward")

Zone Load (PJM - eMTR)



Zone Load = (1900-0) + (0-100) + 75 + 50 + 75)
= 1900 - 100 + 75 + 50 + 75
= **2000** MW

Zone Load (Settlement)



Zone Load = [RES Load (kw) * 1.06 + UFE] + [MGS Sec (kw) * 1.06 + UFE] + [AGS Pri (kw) * 1.04 + UFE] + [GSTTOU (kw) * 1.02 + UFE] + [OL (kw) * 1.06 + UFE]

Zone Load = [1035 MWh * 1.06 + 55 MWh] = 1152
+ [300 MWh * 1.06 + 31 MWh] = 349
+ [200 MWh * 1.04 + 19 MWh] = 227
+ [150 MWh * 1.02 + 9 MWh] = 162
+ [100 MWh * 1.06 + 4 MWh = 110

2000 MWh

UFE includes **20 MW** of NEM Excess Injection

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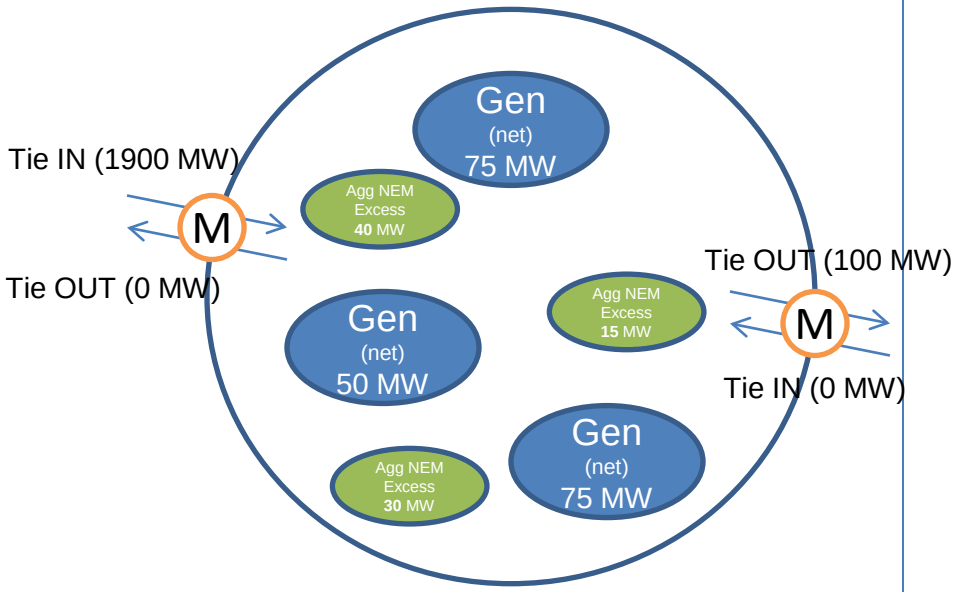
Reconciliation Factor is used to scale the Initial Zone Load to the eMTR Zone Load…theoretically, it should be the amount of the 500 kV losses

Proposed – Positive eMTR to Properly Account for Excess NEM Injection

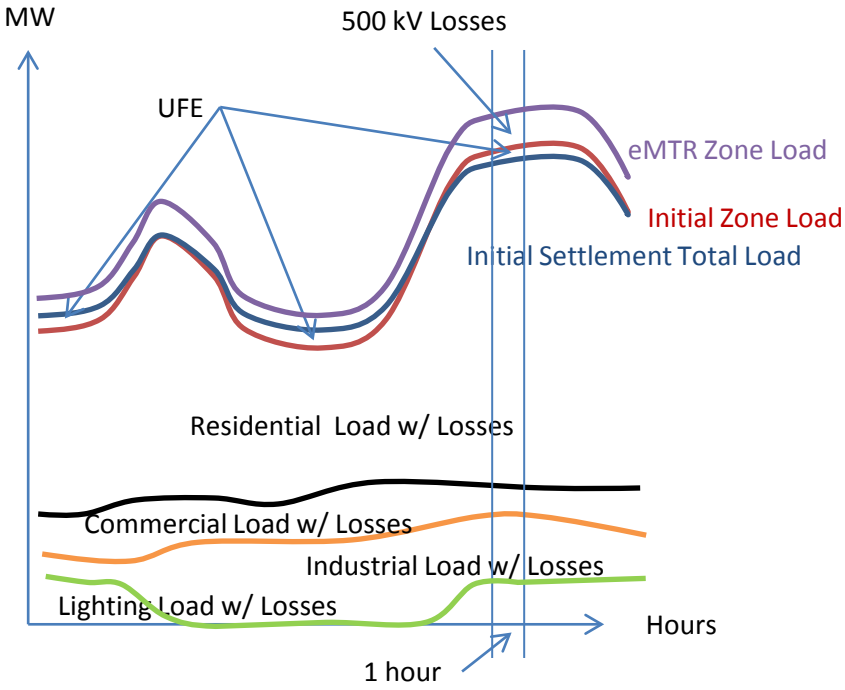
85 MW NEM Excess aggregated to pnodes (assumes all NEM Excess is interval-metered)

Zone Load (PJM - eMTR)



Zone Load = (1900-0) + (0-100) + 75 + 50 + 75
+ 40 + 30 + 15
= 1900 - 100 + 75 + 50 + 75 + 85
= **2085** MW

Zone Load (Settlement)



Zone Load = [RES Load (kw) * 1.06 + UFE] + [MGS Sec (kw) * 1.06 + UFE] + [AGS Pri (kw) * 1.04 + UFE] + [GSTTOU (kw) * 1.02 + UFE] + [OL (kw) * 1.06 + UFE]

Zone Load = [1080 MWh * 1.06 + 47 MWh]= 1192
+ [320 MWh * 1.06 + 27 MWh] = 366
+ [215 MWh * 1.04 + 15 MWh] = 239
+ [160 MWh * 1.02 + 7 MWh] = 170
+ [110 MWh * 1.06 + 2 MWh = 118

2085 MWh

Reconciliation Factor is used to scale the Initial Zone Load to the eMTR Zone Load…theoretically, it should be the amount of the 500 kV losses