

Loss Review



Operating Committee
January 16, 2020

Loss Review – Acronyms used

- MV90 – Application used for meter data collection and processing
- OI Loss Report - Operating Company Losses
- PTF – Pool Transmission Facility
- RQM – Revenue Quality Metering
- TNL – Total Non-PTF Losses
- VELCO TVL – VELCO Total Vermont system losses

Loss Review – PTF Losses

- What is PFT?
 - Pool Transmission Facility (PTF) means the transmission facilities owned by PTO's which meet the criteria specified in Section II.49 of the OATT
 - This includes most non-radial lines rated 69kV and greater that allow power to move freely on the New England transmission system



Loss Review – PTF Losses

- PTF Losses are accounted for via the Loss Component of the Locational Marginal Price
 - ❖ Therefore should not be included in customer load assets
- The ISO calculates PTF losses using its **state estimator**
- When RQM is not at the PTF boundary: Estimated PTF losses are used to account for that load in the settlement model
 - ❖ Reducing the load that needs to be accounted for in the corresponding metering domain
- PTF losses are allocated to a distinct Load Asset for a Metering Domain
 - ❖ The PTF Loss Load Asset does not pay a settlement
 - ❖ Hourly losses published by 8 am each day in MIS report OI_LOSSESMD
 - ❖ This is used by the Host Participant to determine the remaining load that needs to be assigned to load assets in that Metering Domain



Loss Review

- The Vermont Load calculations currently use the ISO-NE OI Loss Report (Operating Company Losses) in determining the hourly losses (TNL) that are allocated to each distribution utility based on their hourly load share
 - The OI Loss report is an **estimate** of hourly PTF losses
 - Mapping Table
 - Manually maintained table
 - Not necessarily accurate, best estimation method at the time

OI Loss – Load Calculation

- $UTL \pm SLAL + TNL + PGEN = VTL$
- UTL – Utility Tie Load
- SLAL – Sub transmission Loss Adjustments
- TNL – Total Non-PTF Losses
- PGEN – Physical Generation (within a utilities territory)
- VTL – Vermont Transmission Load (RTLO)

Loss Review – TNL Calculation

- **Current TNL calculation**

- $(\text{VELCO_TVL}) - (\text{OI Losses}) = \text{TNL}$

- *(VELCO_TVL is VELCO Ties – DU Tie loads)*

- Using revenue quality data from MV90 we will change how we calculate TNL

- **Revised TNL calculation**

- $(\text{VELCO_TVL}) - (\text{MV90 PTF losses}) = \text{TNL}$

By increasing PTF losses we are decreasing low voltage losses (TNL) which reduces each DU's hourly load submitted to ISO-NE

Loss Review - Comparison

Current TNL Calculation using OI Loss Report

Operating Date:01/07/2020		ISO-NE	
Hour	VELCO_TV_L	OI Loss Report	VELCO_TNL
1	-13.119	-11.263	-1.856
2	-12.535	-10.802	-1.733
3	-12.619	-11.290	-1.329
4	-12.987	-10.680	-2.307
5	-12.287	-10.251	-2.136
6	-12.915	-11.330	-1.485
7	-12.377	-11.448	-1.029
8	-12.617	-10.381	-2.236
9	-12.875	-10.199	-2.676
10	-13.702	-10.188	-2.514
11	-12.273	-9.940	-2.233
12	-13.007	-10.727	-2.280
13	-12.735	-10.783	-1.952
14	-11.926	-9.667	-2.359
15	-12.239	-9.587	-2.652
16	-12.243	-10.388	-1.855
17	-12.737	-10.314	-2.523
18	-13.872	-10.469	-3.404
19	-13.835	-10.982	-2.853
20	-13.789	-10.795	-2.994
21	-13.161	-11.700	-1.561
22	-12.810	-10.655	-2.155
23	-12.850	-10.820	-1.930
24	-11.660	-9.664	-1.996
Total	-307.170	-254.323	-52.048

Revised TNL Calculation using MV90 data

Operating Date:01/07/2020		VELCO	
Hour	VELCO_TV_L	OI_Losses	VELCO_TNL
1	-13.119	-12.341	-0.778
2	-12.535	-11.434	-1.101
3	-12.619	-11.656	-0.963
4	-12.987	-12.187	-0.800
5	-12.287	-11.788	-0.599
6	-12.915	-12.199	-0.616
7	-12.377	-11.401	-1.076
8	-12.617	-11.404	-1.213
9	-12.875	-11.706	-1.169
10	-13.702	-10.945	-2.727
11	-12.273	-11.027	-1.146
12	-13.007	-11.637	-1.370
13	-12.735	-11.651	-1.084
14	-11.926	-11.038	-0.988
15	-12.239	-10.936	-1.303
16	-12.243	-11.055	-1.188
17	-12.737	-11.992	-0.845
18	-13.872	-12.517	-1.355
19	-13.835	-12.486	-1.349
20	-13.789	-12.387	-1.402
21	-13.161	-12.110	-1.151
22	-12.810	-11.804	-1.006
23	-12.850	-11.615	-1.135
24	-11.660	-10.948	-0.712
Total	-307.170	-280.264	-27.076

Loss Review – Potential Savings for Vermont

- Estimate of \$297,000/year savings Energy Market (1.0 MW/hour X \$34.00 RT-LMP* X 8760 hours = \$297,840)
- Estimate of \$9,000/year savings in RNS Charges (1000 kW-month x 1.226291 \$/kW-Month Pre-97 RNS Rate** + 1000 kW-month x 8.101933 \$/kW-Month Post-96 RNS Rate** = \$9,328.22/month)

* RT-LMP - average RT-LMP at the Vermont Zone (past 12 months)

**RNS Rates used are the 2019-2020 RNS Rates

Loss Review – Next Steps

- Perform analysis on what impact this change will have on the marginal loss component of the Locational Marginal Price (LMP) for the Vermont Load zone with VT DU's assistance
- Update precision of meters. VELCO is currently working on this. (30 of 48 meters have been completed)
- Install meters at Putnam Road Substation at GMP-NGRID interface
- Work with ISO-NE on validation
- Estimated completion done by Q3 2020