VSPC Geographic Targeting Subcommittee
July 9, 2025
Draft Meeting Minutes

Participants**:** Shana Louiselle (VELCO), Michael Gadway (Ludlow L&E), Chris Recchia (Ludlow L&E), Cam Twarog (GMP), Kamran Hassan (GMP), TJ Poor (DPS), Lou Cecere (DPS), David Westman (EVT), Louis Porter (WEC), Dave Kresock (WEC), Michael Lazorchak (Stowe), Marc Allen (VELCO), Lucas Looman (VELCO), Brian Hall (VEC), Michael Beaulieu (VEC), Paul Pikna (BED), John Abbott (VPPSA), Heather D'Arcy (VPPSA), Brian Evans-Mungeon (HPE)

The Geographic Targeting Subcommittee met to perform the annual project review and discuss if any project required further NTA analysis. GMP also provided an update on the preliminary NTA analysis for the 2024 Vermont Long-Range Transmission Plan.

Distribution Utility Project Reviews

Burlington Electric Department (BED)

- Munir Kasti reported that BED has no projects that screen in for further review.

Green Mountain Power (GMP)

- Kamran Hassan provided an update on GMP projects. No new projects are being put forth for NTA screening this year. GMP is working on its next IRP filing which will detail proposed projects for the coming years.
- **Completed Projects:**
    - Berlin 40 project: Complete.
    - Bolton 41 project: Substantially completed (minor transformer leak issue, awaiting warranty repair).
    - London area substation project: Completed, but the project will remain open as the purchased transformer was reallocated for an emergency repair at South St. substation. A new transformer is being procured.
    - Huntington to Belden's refeed: Commissioned. This reconfigured the network in Addison County, rerouting Huntington Falls and Belden Falls generators to the

VELCO Middlebury substation. This allows for the retirement of 8 miles of line, pending environmental restrictions (scheduled for winter).

- Irasville substation petition: Expected to be filed in the next month, previously included in subcommittee screenings.
- DPS confirmed that all the projects mentioned were asset condition and reliability-based, not related to load growth.
- **Discussion on Screening Tool:** TJ raised a process question about the NTA screening spreadsheet used for project tracking and whether improvements were needed. GMP acknowledged it's utilitarian and useful for public record but would not use it beyond load growth-driven projects.

Hyde Park Electric

- Brian Evans-Mungeon stated that HPE has no new projects to report due to time and internal staff constraints. He offered concepts related to their IRP process including four high-level projects under consideration: .
    - AMI Implementation: Estimated cost $600,000 - $750,000 for 1400-1700 customers (electric and water). Cost-prohibitive with no identified funding.
    - DERMS Activities: To improve visibility in distribution system operations, no cost scenarios yet.
    - Hendrix Cabling: Estimated cost $5 million - $7 million, no funding options found.
    - Mudgett Hill Substation: Submitted to Grid Resilience Program. Would provide a second delivery point for Hyde Park, allowing dual capability or serving the village during rebuild of the 70-year-old main substation. Estimated cost $800,000 - $900,000 (excluding vegetation clearing).
- Shana Louiselle noted that the substation upgrades would qualify for the 6290 screening tool.

Vermont Electric Cooperative (VEC)

- Michael Beaulieu confirmed no new projects and no updates to the screening tool.
    - Eden substation transformer replacement: Completed last year.
    - Sheldon substation: Still in a holding pattern (asset condition project). GMP is considering joining VEC to reconfigure the Sheldon area for reliability purposes,

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potentially replacing the 46 to 34.5 kV power transformer with an auto transformer. This is still preliminary.

Vermont Public Power Supply Authority (VPPSA)

- John Abbott reported no projects screened in for the municipal utilities.
    - Hardwick Electric Department has potential substation improvement projects, but they are a couple of years away, pending funding.

Ludlow Electric Light Department

- Chris Recchia reviewed the following reliability projects:
    - Substation replacement of reclosers (requires 248 due to footprint change).
    - SCADA upgrade (applied for funding, current system is 30-40 years old).
    - 5 MW solar project (first in-area generation).
    - 3 MW battery project (partnering with Okemo).

Washington Electric Cooperative (WEC)

- Louis Porter and Dave Kresock presented on two substation rebuild projects (built in 1968 and 1971) identified through a full engineering review.
- Causes for Rebuild:
    - Thermal Limits: Jackson Corners transformer is reaching its thermal limits due to load.
    - Age: Replacing old wooden structures with steel.
    - Increased Distributed Generation (DG): Jackson Corner substation is at capacity, unable to accept additional solar or other DG.
    - Damage: Mount Knox substation transformer was previously vandalized with bullets and patched.
- Estimated Cost: Roughly $16 million for both substations.
- Timeline: Plan to rebuild between now and end of 2027 using RUS funding.
- Non-Transmission Alternatives (NTAs): WEC believes there are no NTAs due to the significant asset condition component.

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- Dave Kresock added that Mount Knox and Jackson Corner are their two largest loaded substations. The rebuilds will also enable backfeeding capabilities between these substations and E Montpelier.
- Transformer Sizing: Proposed upgrade to 7.5 MVA at Jackson Corners and possibly 7.5 MVA or 10.5 MVA at Mount Knox.
- **Discussion on Load Data and NTA Screening Tool:**
    - GMP questioned the justification for doubling transformer size, asking for more granular load data (AMI/SCADA).
    - Dave Kresock clarified that the Jackson Corners transformer is overloaded due to load, not distributed generation, and is reaching thermal limits, predicting this within the next two years. This makes it a load growth related constraint.
    - The subcommittee discussed the implications for the 6290 screening tool, specifically questions 9 ("would load reduction or generation allow for elimination or deferral of all the upgrade?") and 10 ("would the cost differential... be less than $250,000 adjusted for inflation?"). WEC initially answered "no" to question 9 as it wouldn't eliminate *all* the upgrade, but agreed that it might eliminate *part* of it.
    - GMP suggested that if the cost difference for a smaller transformer (e.g., 5 MVA vs. 7.5 MVA) is less than the adjusted threshold (around $500,000 today), it would screen out, making further NTA analysis less critical.
    - WEC expressed concern about relying on batteries for load management to prevent transformer overload, citing reliability risks and potential long outages.
    - DPS explained that NTA analysis aims to identify conceptual alternatives, and while batteries are a valid tool, their specific application and reliability for this purpose would require further study by WEC.
- Next Steps for WEC: Circle back at the next GT subcommittee meeting with more load data and a revised screening tool, potentially screening each substation separately.

VELCO NTA Screening Presentation (E Fairfax Substation)

- Marc Allen presented on the E Fairfax substation project, part of VELCO's SCAP program (Substation Condition Assessment Project).

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- Project Status: Slated for CPG filing later this year, construction estimated for summer 2028.
- Substation Details: Constructed in 1971, radial, fed from VELCO Georgia sub. Contains 115 to 34.5 kV transformer, 115 kV circuit switcher, and four 34.5 kV circuit breakers (one SF6, two vacuum, one old oil).
- Project Scope: Update obsolete protection and control equipment, address size-restricted control building, replace end-of-life oil circuit breaker, replace 115 kV circuit switcher with a breaker and disconnect switch, structural steel deficiencies, expand fence, update station service, telecommunications, security, and monitoring.
- Estimated Cost: Preliminary conceptual Class A cost estimate is $15 million +/- 50%.
- Anticipate needing a temporary substation to maintain feed to GMP during construction.
- NTA Screening Form: VELCO showed the 7081 screening form, flagging "yes" for the first question (meets maintenance-related addressing asset condition, operations, or safety), which screens out further NTA analysis.
- Non-PTF Status: Confirmed that E Fairfax is a non-PTF (radial) substation.
- DPS questioned the project components future needs and the current standards, requesting more information on what standards are being applied, noting that similar to scrutiny is being applied to other regional TOs. VELCO acknowledged DPS' point and agreed to come back to the Subcommittee to provide more detailed information at a future meeting.

2024 VT Long-Range Transmission Plan - Preliminary NTA Analysis Discussion

- GMP presented their internal analysis of VELCO's time series data for the Northern and Northwest areas of concern identified in the 2024 VT Long-Range Transmission Plan.
- VELCO's Findings:
    - Northern Area (Winter Peak): Need 75 MW load reduction for two 5-hour periods (8 AM-12 PM and 5 PM-9 PM).
    - Northwest Area (Summer Peak): Need 80 MW load reduction for 5 hours.
    - Northwest Area (Winter Peak): Need 40 MW load reduction for 2 hours.

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- GMP's Analysis: VELCO's initial 375 MWh estimate for the Northern Area winter peak was found to be an upper bound. GMP estimates the actual needed reduction is closer to 230 MWh.
- Cost Implications: A $100 million wires alternative for the Northern area vs. battery storage at $2 million/MWh. Initial 375 MWh would exceed the wires cost, but 230 MWh is still significant.
- Key Sensitivities/Solutions:
    - EV Charging Control: The long-range plan modeled no EV charging control. GMP's analysis assumes 50% control (consistent with IRP) to shift charging peaks to around midnight and reduce "bounce back." This significantly reduces the evening peak to 30 MW (57 MWh) and the morning peak to 100 MWh.
    - FERC Order 881 (Ambient Air Ratings - AAR): This Order will implement ambient air ratings on transmission systems, adjusting winter ratings from a 50°F to a 20°F basis. This will increase line capacity and will likely shift the critical load level upward, reducing the needed load reduction.
- Combined Impact: The combination of EV charging control and PP7 changes significantly reduces the needed load management, bringing it closer to a solvable problem without a full wires solution.
- Existing Assets: GMP has existing utility-scale storage, distributed storage, and FLM programs with ski areas and CNI customers that can be leveraged.
- Committee Discussion:
    - DPS suggested that GMP's work already constitutes the start of an NTA study group, as the new EV charging rate is an NTA.
    - GMP stated that the goal is to define the problem accurately before kicking off a formal NTA study group. It was noted that the worst case scenario has changed due to revised EV load growth forecasts and facility ratings.
    - The VSPC Load Forecasting Subcommittee's preliminary 2026 forecast shows reduced EV load growth for 2033 (approx. 200,000 EVs vs. 300,000 in the 2023 forecast).
    - DPS asked about existing storage in the Northern Area. GMP will provide that data.

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    - Discussion on whether battery storage is considered an NTA or primarily for reliability. GMP stated that current storage is mainly for reliability, but its auxiliary benefit as an NTA is valuable. The challenge is justifying a large investment solely for a rare transmission contingency.

- **Next Steps:**
    - Refine the analysis and submit it as part of GMP's long-range transmission plan comments in the PUC investigation.
    - Share with the broader VSPC group and invite comments.
    - Build consensus among affected utilities through NTA study group.

Next Steps for Subcommittee

- Next meeting will be scheduled in September, to revisit WEC and VELCO projects with more detailed information.
- Schedule a workshop to discuss the GT process for DU screening, as requested by the group.

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