*DRAFT* VPWG Meeting Notes 5/21/2019

**Review Previous Meeting’s Minutes:**

The minutes of the March 5, 2019 meeting was approved with minor changes (attached).

**TOP Data Gathering Effort** – Certain CREZ areas have experienced high voltages when there is low wind output and the reactive support from wind farms is not fully available. However, Matthew mentioned a case where reactive support from a wind farm could be made available even at low output by reprogramming the control system for the inverter based system. It was stated that typical Generation Interconnection studies may not be looking at low wind output and low reactive support.

**NPRR 849 update**

 Stephen Solis gave an update on NPRR 849. He stated that there is an effort underway by representatives from the generators and TOs from OWG to try to bring forth a compromise language that would be agreeable to the generators and TOs. In general, some of the generators wanted simpler and easy to understand language on voltage control while many of the TOs preferred more prescriptive language that would cover more scenarios of voltage control. It was stated that those generators meeting current reactive standards will not have a problem meeting the new standards because they are less restrictive. More details are expected at the OWG meeting on June 20, 2019. Freddie stated that he would check whether someone from the Resource Integration Process team will be able to attend a future meeting to discuss reactive studies for new generators.

**Reactive Power Coordination Tool**

The proof of concept was completed successfully. Ercot will have an internal meeting in June to discuss the kickoff of the project. The expected kickoff for the project is sometime in Q3 (July-September). After that there will be a 4 to 6 months of planning phase where the business requirement, hardware design and budget will be firmed up. The purchase order for the tool may be issued in 2020 and the TSP testing of the tool may be in 2021. ERCOT is working on some changes to the protocol in a couple of places-modeling section for temporal constraints and clarification of outage for reactive devices needing to be put in the ERCOT Outage Scheduler.

The tool will recommend a reactive schedule for the upcoming hour and TSPs will be obligated to implement unless there is a reliability reason not to implement. Distribution method for the information will be through XML and the TSPs will need the infrastructure to handle the XML messages and put it in a format for the Operators to execute for the next hour. There will be reactive schedules for rest of the day and the next day for information purposes only. The reactive schedule will also be posted on MIS. The expectation is that overall there will be fewer voltage violations and fewer switching actions and fewer reactive losses since there will be coordination among different TSPs. If there is no reactive solution, there would be a manual option to look at RUC but the tool will not make the recommendation. There will also be a planning version of the tool to do offline studies with different dispatches. The MW problem will be solved first and then the RPC tool will run next.

There was a request for a demo of the RPC tool in the future and an opportunity for TSPs to talk to the vendor. There are a couple of vendors being considered for developing the tool.

**Voltage Set –Point Threshold**

Yamit did a presentation on the voltage set-point threshold by pulling in historical data for generators (grouped by voltage) from June 2018 to March 2019. The slides showed what percentage of the time there would be voltage violations if a tighter bandwidth was considered for 69 kV, 138 kV and 345 kV remote buses. For 69 kV, 138 kV and 345 kV remote buses, the voltage bandwidth being considered are +/- 1 kV, +/- 2 kV and +/- 4 kV respectively. Please see the attached presentation for additional details.

It was pointed out that if a generator is outside the bandwidth and is unable to come back to the tolerance bandwidth, it may indicate a need to add reactive resources in the area.

**Study update for Summer/Fall 2019 Voltage Profile**

Tony presented a slide for the Summer/Fall voltage profile studies (attached). The summer voltage profile will be effective on June 1, 2019.