MEETING MINUTES FOR THE ERCOT SYNCHROPHASOR TASK FORCE GROUP MEETING (1/8/14)

ACTION ITEMS IN YELLOW

1. Anti-trust Admonition

Kris read the ERCOT anti-trust admonition and disclaimer.

2. Attendees

1) Kris Koellner, LCRA TSC
2) Bill Blevins, ERCOT
3) Joseph Bezzam, ERCOT
4) David Bogen, Oncor
5) Frank Carrera, EPG
6) Mack Grady, Baylor
7) Brad Harris, CNP
8) Milton Holloway, CCET
9) Barry Kremling, GVEC
10) David Mercado, CNP
11) David Penney, TRE
12) Sidharth Rajagopalan, ERCOT
13) Paul Rocha, CNP
14) Alison Silverstein, NASPI
15) Feng Tu, AEP
16) Lauri White, AEP
17) Taylor Woodruff, Oncor
18) Andrew Mattei, Brazos Electric (Webex)
19) Joel Davis, TNMP (Webex)

(Additional attendees were on the WebEx, but I did not catch all the names)

3. Roster & calendar review/update – *Koellner*

Kris went over the STF meeting schedule for the remainder of 2014. The meeting schedule is available at http://www.ercot.com/committees/board/tac/ros/stf/. Most meetings are paired up with the ROS meeting for that month. A Webex will be available for each meeting. All meetings will be held at ERCOT's Met Center facility.

Alison noted the October NASPI meeting will be held in Houston, TX and will include a model validation workshop.

The group discussed potential speakers for the February, March, and future meetings (Gardner, Costello, WISP, EPG, etc).

4. Review & approval of minutes from previous meeting – *Koellner*

The group approved the minutes from the November 2013 meeting with no changes. Since our last meeting, the CCET's use cases were forwarded to the group for their review and consideration on 12/10/13.

5. Synchrophasor Applications in the ERCOT Region – *Dr. Mack Grady, Baylor*

Dr. Mack Grady presented material on his Synchrophasor research and experience with the technology in the ERCOT, SPP, and WECC regions. Recent event data from several PMUs was shared and Synchrophasor data was correlated with wind generation output within ERCOT. His slides have been posted to the STF web page.

6. NERC PRC-002 & PRC-018 standard revisions – *David Penney, TRE*

David shared the latest information on these standard revisions. Both standards will be combined into a new version of PRC-002. The revised standard will cover sequence of events recording (SOER), fault recording (FR), and dynamic disturbance recording (DDR) and will apply to TOs, GOs, and PC/RCs. The DDR requirements align closely with PMU functionality in terms of sampling rates and time synchronization. The revised standard may drive PMU installations per requirement R6. All are invited to review the standard and provide comments. The latest comment period is focused on cost analysis and closes on 2/7/14.

There was an open question raised about FERC/PJM criteria for new generators and retrofitting existing generators.

7. ERCOT PMU Uses – *Bill Blevins, ERCOT*

Bill presented the three key Synchrophasor applications that ERCOT is focusing on:
(1) system oscillation detection (fills a gap in SCADA observability)
(2) generator model validation (relates to MOD requirements for TPs and GOs)
(3) post-event analysis and reporting (relates to PRC-002)

Some of these areas tie in to other ERCOT working groups (e.g. DWG, PDCWG).

Bill also introduced some work ERCOT has done on determining where to optimally locate PMUs within the ERCOT region. ERCOT researched technical papers related to the placement of PMUs and developed a PMU location algorithm tool with different weights assigned for the functional benefits that each PMU location would provide (e.g. observability, black start restoration, major 345-kV lines, etc). Bill will distribute ERCOT's PMU placement paper to the group.

In reality, there is a need to match up "technically optimal" locations with those locations that are "practical/feasible" from an installation perspective.

Mack noted he has done some work in this area as well, based on operator insight and an IPLAN analysis.

Joel Davis noted his system has good PMU coverage at 69-kV.

Alison noted NASPI has produced a paper on PMU siting and more recently has been looking at more installations at load centers and down at the distribution levels, and at the POI for wind generation.

There was an open question raised about a PMU's ability to detect SSR risk/potential.

8. Use case discussion and Issues list – *Koellner*

The group drafted an Issues List based on the STF charter. Leads were assigned in each category based on familiarity with the each area of interest. Answering and expanding upon the topics included in the Issues List will form the basis of STF's report that we provide back to ROS w/recommendations. The Issues List will be reviewed at each STF meeting. Kris will distribute the Issues List to the group.

9. Wrap-up, action items

Presentations from today's meeting will be posted on the STF web page. An agenda will be sent out for next month's meeting.