

MDMS2 Kickoff Meeting Minutes

December 13, 2107

The MDMS2 kickoff meeting was held at NYSEDA's office and attended by the Working Group members representing the all the TOs and the NYISO (see Attachment A). Mr. Mike Razanousky of NYSEDA kicked off the meeting; Mr. George Smith of NYSRC provided the history of the prior works including the first Major Disturbance Mitigation Study (MDMS); and Dr. Yi Hu of Quanta Technology led the discussions of the MDMS Phase 2 study, covered agenda items 3 through 7 (see Attachment B).

In addition to what was covered by the Kickoff Meeting presentation slide deck, major discussions focused on the following topics:

- WG needs initial understanding of the PSS/E modeling capability for load and DER and how they are modeled in the stability cases from NYISO.
- The study will investigate both transient and dynamic stability phenomena. The disturbance mitigation measures will target angular and voltage stability issues via simulations with durations of from less than 5 cycles to greater than 30 cycles.
- The disturbances will be primarily on out of criterion events.
- The feasibility of the mitigation measures will consider practical issues such as latency time in signal communications (e.g., from event detection, communicating with control rooms, re- sending signal back to device and operating time), central vs. distributed system protection functions, transmission line flows controlled by HVDC technology, system voltage profiles preventively adjusted by SVC, etc.
- Need some sensitivity cases to bookend the transient and dynamic stability phenomena that system operations may experience for example, the wind or solar PV may not produce their maximum as would be modeled in the peak or shoulder power flow and stability cases.

Action Items

1. Each WG member should obtain CEII clearance (Zach Smith) from NYISO for the access to the modeling data and NYISO reports (eg CSSS) containing CEII information. For reports under jurisdiction of the NYSRC (eg MDMS) and work performed under this project, each working group member should obtain CEII clearance from the NYSRC.
2. Quanta Technology to set up a "Drop Box" for WG access to the existing reports listed in the presentation slide, George Loehr's 1999 HVDC paper, and other WG discussion materials.
3. Henry to send NYISO (Wes Yeomans) tentative five in-person WG meetings dates for future WG meetings at the NYISO offices and posting on the NYISO website.
4. NYISO to provide the Quanta Technology team, upon satisfying the CEII requirement:
 - the MDMS1 power flow and stability cases (summer and winter peaks, light and shoulder), together with lists of normal and extreme contingencies
 - Future planning power flow and stability cases for 2020 and 2023, together with the MW assumptions of behind-the-meter DERs (e.g., solar) in the cases
 - 2020 and 2030 load forecasts without the DERs.
5. Each TO to provide its forecasts of behind-the-meter DERs in MW and locations in its services territories
6. Each TO to provide protection information on major lines spanning critical interfaces in the New York transmission system. The information required includes: primary and backup relay schemes, phase impedance relay zone settings in either per unit or as a percentage of line impedance and relay characteristic shapes (mho circle, quadrilateral or other). This information is required for 230 kV and above lines for the circuits listed in attachment C. If additional information is available for 115 kV and below circuits, that would be helpful.

The WG agreed that the requested data should be submitted to Quanta Technology WG member(s) by January 22, 2018.

Attachment A – MDMS2 Working Group Members

Central Hudson – Zarin Schildhorn¹ and Frank Pace

Con Edison/O&R – Dan Taft and Dan Head

National Grid – Robert Grabovickic

NYISO – Wes Yeomans, Pramila Nirbhavane, David Mahlmann, and Kevin DePugh

NYP&A – Sunil Palla and Eric Anderson

NYSEG/RGE – Jim McCabe, Gizem Polat, and Robert Austenfeld

NYSERDA – Mike Razanousky

NYSRC – Roger Clayton, George Loehr, and George Smith

PSEG-LI – Tony Gorgone and Curt Dahl

Quanta Technology – Hugo Bashualdo, Yi Hu, Henry Chao, and Damir Novosel

¹ Highlights in yellow indicate attendance at the December 13, 2017 MDMS2 Kickoff meeting.

Appendix B – MDMS2 Kickoff Meeting Agenda

December 13, 2017

NYSERDA Office – 17 Columbia Circle, Albany, NY

| Item # | Description | Time (Min.) | Lead / Participants |
|--------|---|-------------|---------------------|
| 1 | Arrival and reception | | NYSERDA |
| 2 | Introduction and review of prior works | 15 | NYSRC |
| 3 | Project SOW overview | 15 | Quanta |
| 4 | Project plan / schedule review & discussion | 30 | Quanta / All |
| 5 | Project communication plan discussion | 15 | Quanta / All |
| 6 | Project info request discussion | 15 | Quanta / All |
| 7 | Technology transfer plan discussion | 30 | Quanta / All |
| 8 | Wrap up | 15 | Quanta / All |
| | Meeting Adjourn / Lunch | | |

Attachment C – List of Transmission Circuits for Some Interfaces in NY

WEST-CENTRAL:

STOLE – SHLDN 230 kV
ANDOVER – PALMT 115kV
MORTIMER – LAWLER-1 115kV
MORTIMER – LAWLER-2 115kV
PANNELL – CLAY 345kV
PANNELL – CLAY 345kV
STA121 B#2 – SLEIG 115kV
STA 162 – S.PER 115kV
PANNELLI – FRMGTN-4 115kV
QUAKER – MACDN 115kV

CENTRAL-EAST:

E.SPR - INGHAM-E 115kV
EDIC – NEW SCOTLAND 345kV
PORTER – ROTRDM 230kV
PORTER – ROTRDM 230kV
INGMS-CD – INGHAM-E 115kV
MARCY – NEW SCOTLAND 345KV
PLATBURG – NE_PV20 115kV

TOTAL-EAST (additional circuits):

FRASR - GILBOA 345kV
COOPERS CORNER – ROCK TAVERN 345kV
COOPERS CORNER – DOLSON_AVE 345kV
COOPERS CORNER – MDTN TAP 345kV
W.WDB – W.WDBR 69kV
HOPATCONG – RAMAPO 500kV
WALDWICK – S. MAHWAH 345kV
WALDWICK – S. MAHWAH 345kV
LINDEN – GOETHALS 230kV
MARION B-Line PAR1 345kV
MARION C-Line PAR2 345kV
VFT – COGNTECH 345kV
HUDSNDC – W 49 ST 345kV
HCOR – CORPORATE DR 138kV
SMAHWAH 345/138kV Transformer Bank
SMAH – RAMP 138kV
HCOR – WNYA 69kV
HCOR – TAPPAN SW 69kV
MONTVALE – BLUHILL 69kV
MONTVALE – BLUHILL 69kV
MONTVALE – L491T 69kV
SMAH – HILB 69kV
HCOR – PEARL 34kV
CRESSKIL – TAPPAN SW 69kV

UPNY-CONED:

ROSETON – E. FISHKILL 345kV

E. FISH 345/115kV Transformer Banks
FISHKILL – SYLVN 115kV
LADENTWN – NORTHRCKLD 345kV
PLEASANT VALLEY – E FISHKILL 345kV
PLEASANT VALLEY – E FISHKILL 345kV
PLEASANT VALLEY – MILLWOOD 345kV
PLEASANT VALLEY – MILLWOOD 345kV
PLEASANT VALLEY – MILLWOOD 345kV
RAMAPO – BUCHANAN 345kV