

MDMS2 Status Report

3/9/2018

Status:

- Quanta Technology has completed the Task 2.1 Report (Summary of Prior Work) and has started on Task 2.2 (Base Case Development and Testing)
- The face to face meeting scheduled for 3/8 was replaced by a webex meeting due to a lack of substantial progress on Task 2.2 of the project – in part due to resolution of the NDA issue. Resolution of NDA concerns are required for acquiring TO data necessary for the simulation data base.

Task 2.1 - Review of prior work:

- The prior work reviewed as Task 2.1 included the Final 2003 Blackout Report by the U.S.-Canada Power System Outage Task Force, The NYISO Blackout Final Report, The NPCC Task 5 Blackout Study Report, The NYISO CSSS Report and the MDMS(1) Report. The review includes descriptions of power flows, operations and misoperations during the Blackout event.
- Briefly in addition to the well known situational awareness issues and ROW maintainance issues:
 - Generation protections were not coordinated with UFLS
 - Transmission Protections were sensitive to load encroachment
- Task 5 found that Controlled Separation offered a potential form of mitigation, finding reliable triggers and suggested care in making any protection changes that may have unintended consequences
- Review of CSSS suggests that in addition to rapidly evolving disturbances, slowly evolving disturbances may be mitigated by generation control. Consideration needs to be given to impact of dispatch and disturbance locations over a wider range of conditions. The question of adequacy of transmission protection modeling as well as generation dynamics models of neighboring systems arises.
- Review of MDMS concurs that the study has developed a detection method that is unique in that it does not require extensive offline studies as required by other forms of protection. However it does raise the issue that an adaptive UFLS system was required in the analysis to achieve stability which in itself may require some extensive study. Other modes of mitigation should be explored further.
- Generally, Quanta concludes that the investigations have provided valuable results that can be leveraged on in the next step research and development of the next phase of developing a credible wide area protection system.

Task 2.2 – Base Case Development and Testing:

- Quanta has received the NYISO provided 2023 base cases, and is working on the following:
 - Selecting the best approach to model behind-the-meter DER in PSS/E in preparation to model DERs based on TO provided info
 - Reviewing the NYISO posted renewable project queue to identify those projects that may come on line by 2023 for inclusion in the modified base case
 - Reviewing contingencies studied in CSSS and MDMS1 studies for determining the contingencies to be investigated in MDMS2 study
 - Assessing the adequacy of the protections including UFLS included in the base case for performing MDMS2 study
- Quanta is anticipating to receive the following to start modifying the base cases:
 - TO protection data and forecasted DER amount / location pending the acceptance of an NYSRC NDA agreement under development
 - MDMS1 PSS/E cases to be provided by EnerNex