



NPCC Activities on Distributed Energy Resources

NYSRC DER Workshop
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NPCC Overall Transmission Reliability Assessment: Sensitivity Study on the Impact of Distributed Generation (DG) - March 31, 2016

- Results indicate that it is possible that large penetrations of DG could have a deteriorating impact on NPCC system stability for extreme contingencies involving 3-phase faults with delayed clearing (e.g. 3-phase breaker failure contingencies at stations with high fault levels)

Static & Dynamic Reactive Capability/Total MW & Effect of Lower System Inertia on Transmission Reliability due to Inverter Based Generation (December 6, 2016)

- Results of this study indicate that adequate amounts of reactive capability exist per total MW load on the transmission system in all NPCC Areas. Also, no inverter based control issues arising from low Composite Short Circuit Ratio (CSCR) are expected in any NPCC Areas.

NERC DER Task Force Report

- Potential reliability risks and mitigation approaches for increased levels of DERs on the Bulk Power System
([Distributed Energy Resources Connection, Modeling, and Reliability Considerations](#)
[February 2017](#))

NPCC Study of UFLS Program Sensitivity to Distributed Energy Resources (December 18, 2017)

- The impact of DER on the UFLS program was not significant in simulations that modeled the DER riding through the voltage and frequency excursions in the island of 2018 summer peak conditions.
- The rate of frequency decline was increased slightly, but insignificantly, for the case with DER versus the case without DER, and frequency decline was arrested at approximately the same level.
- The frequency recovery with DER was similar to the baseline case without DER.
- Recovery to 59.5 Hz was slower or faster by approximately 1-2 seconds and was most likely influenced by differences in the amount of load shed by the UFLS program between the cases with and without DER.

On-going Efforts

- Develop and maintain accurate DER models by promoting and assisting in the development of guidelines and practices to address DERs in planning models. This includes an examination of if and how DER is modeled on the Bulk Electric System (BES).
- Examine potential Regional approach to developing reliability guidance for distribution level DERs that could impact BES reliability.
- Perform a comprehensive study on potential impacts of DERs on NPCC grid reliability.