System Protection Working Group (SPWG) Update to ROS

September 3, 2020

Chair: John Karlik, PE

Vice-Chair: Vincent Roberts, PE

SPWG Update

- Impact of Inverter-Based Resources (IBRs) on ERCOT Grid Protection Follow-up

- NOGRR218, Removal of Annual Disturbance Monitoring Equipment Database Submission Requirement

Impact of IBRs on ERCOT Grid Protection

Impact of IBRs on ERCOT Grid Protection

- SPWG completed a workshop on August 11, 2020

- Workshop allowed a longer discussion on the results of the IBR Survey
  - Reviewed original request from ERCOT
  - Reviewed IBR survey responses
  - Discussed protection best practices
  - Determined action items and next steps

Impact of IBRs on ERCOT Grid Protection

- Questions that were presented to the SPWG
  - Do SPWG and TSPs identify or observe grid protection challenges due to the increasing of IBRs in the ERCOT grid?
  - Is there any concern with reduced short circuit current? And what are the practices to manage this issue?
  - Is there any concern with reduced negative sequence current? And what are the practices to manage this issue?
  - Are the existing processes and practices still adequate to address the issues?
  - Are the existing models and tools adequate for IBRs in the short circuit analysis?
  - What are the recommendations or actions SPWG/TSPs plan to take to address the protection challenges?

Impact of IBRs on ERCOT Grid Protection

- Highlights of discussion
  - Overall the SPWG and TSPs see protection challenges as the penetration of IBRs increase. Modeling issues and protection misoperations have been experienced
  - Short circuit model data and modeling consistency are an issue. Transient programs may be required for protection studies if issues are not addressed in current tools
  - The industry is working on improving IBR specifications and modeling. Improvements to interconnection requirements to better define short circuit and voltage support requirements could alleviate some protection challenges
  - TSPs are interested in ERCOT regulatory requirements for synchronous condensers which can be used to remedy low short circuit current
  - The SPWG acknowledges there is a lot of industry research on IBR best practices and believes alignment with industry practices is best while also improving ERCOT practices and consistency among the TSPs

Impact of IBRs on ERCOT Grid Protection

- Workshop Action Items
  - SPWG to develop protection best practices guidelines
  - SPWG to propose updates to modeling guide (RARF) and SPWG case building manual to improve data collected and system modeling
  - SPWG to consider including system event and short circuit model reviews as part of group meetings to provide feedback on the system model

NOGRR218 Removal of Annual Disturbance Monitoring Equipment Database Submission Requirement

NOGRR218

- Background
  - SPWG Action Item to review Equipment Reporting Requirements for Disturbance Monitoring Equipment (DME) installations within ERCOT during March 6, 2018 meeting
  - During the successive meetings SPWG discussed the issues with the current language of Section 6.1.5 Equipment Reporting Requirements of the Nodal Operating Guide
  - SPWG and ERCOT personnel proposed revisions Section 6.1.5 during the July 22, 2020 SPWG meeting for the group to review

NOGRR218

- Issues
  - The existing language requires an annual database submission by October 31 which requires an extensive time commitment by DME owners
  - Similar to the time commitment of DME owners, ERCOT also experiences an extensive time commitment to manage and record the submittals

NOGRR218

- Proposed Resolution
  - ERCOT and SPWG agree that targeted collection of the DME information initiated by an ERCOT Request For Information (RFI) will be more efficient to meet regulatory requirements
  - NORGG218 will remove the annual comprehensive DME reporting requirements and allow ERCOT to collect required information by RFI
  - SPWG has submitted with a request for urgency to allow the changes to take effect before October 31, 2020 data submission requirement

The next SPWG Meeting is scheduled for November 10-11, 2020

Thank You

Questions?