

ERCOT ROS System Protection Working Group (SPWG) Procedures

1. Scope

The System Protection Working Group (SPWG) is responsible to review and coordinate protective relay scheme design/performance standards and practices which may bear on the reliability of the ERCOT interconnection in compliance with applicable NERC Reliability Standards and ERCOT Nodal Operating Guides and other appropriate engineering criteria. The SPWG is responsible to support the investigation, analysis, evaluation, and documentation of ERCOT system disturbance events in close cooperation with the other working groups as well as ERCOT. The SPWG is responsible to consider reliability as its prime objective with consideration given to economics or other factors as appropriate. ERCOT is responsible for collecting data updates and maintaining the ERCOT short circuit cases.

2. Administrative Procedures

Membership consists of representatives appointed by the Reliability and Operations Subcommittee (ROS). Special projects may necessitate the SPWG Chair to obtain ROS approval for additional representation on an ad hoc basis.

The ROS Chair, with ROS approval, appoints the SPWG Chair and Vice-Chair.

When consensus cannot be achieved on an issue, it is presented to the ROS for disposition.

Meetings of the SPWG are scheduled by the chair as necessary to discharge its responsibilities. Meetings are typically held in March, July, and November.

To facilitate keeping the ROS informed with regard to activities of the SPWG, a copy of all official correspondence (from Chair and his designates) shall be sent to the ROS Chair in the same manner as other ERCOT working group work. Each SPWG Member shall keep his ROS member informed of his activities.

The responsibilities of the SPWG Chair include:

- a. Attend ROS meetings representing SPWG. (Present information in written form)
- b. Preside at SPWG meetings.
- c. Make arrangements with sponsoring utility/host for SPWG meeting.
- d. Notify members of upcoming SPWG meeting date, information needed, and matters to be discussed.

- e. Develop agenda for SPWG meeting. (includes any action items from ROS)
- f. Take minutes at SPWG meetings (includes mailing draft and final copy to members).
- g. Coordinate with ERCOT regarding dates for short circuit data submittal.
- h. Coordinate short circuit case development between SPWG members and ERCOT organization responsible for model management.
- i. Coordinate with the Steady State Working Group (SSWG) and Dynamics Working Group (DWG) Chairs to ensure consistency between the short circuit and load flow cases.
- j. Notify members of dates short circuit data submissions are due.
- k. Maintain and publish the SPWG Roster, SPWG Calendar, and the Short Circuit Case Building Procedure Manual.

Responsibilities f - k above may be delegated to the SPWG Vice-Chair.

3. Sharing System Protection Information

The membership should share system protection information, including but not limited to protection philosophies, design practices, and operating experience. This sharing of information may address, but is not limited to:

- a. One-line diagrams / relay functional diagrams
- b. Control and relay schematic diagrams
- c. Relay installation and checkout procedures
- d. Relay maintenance
- e. Relay test facilities / equipment information
- f. Relay settings
- g. Changes in system protection schemes
- h. Tie line protection coordination
- i. Fault recorders and applications
- j. Relay communications
- k. Under frequency and under voltage tripping
- l. Co-generation – utility interface
- m. Functional testing
- n. System disturbances
- o. Phasor measurement

4. Procedure for the Short Circuit Case Building

Utilize ERCOT Planning Guide section 6.3 and the latest posted version of the SPWG “Short Circuit Case Building Procedure Manual” in order to build the current and future year short circuit cases.

5. Special Protection Systems and Electric System Disturbances

ERCOT conducts a review of any proposed or modified SPS prior to the SPS being placed in service. The SPWG shall support ERCOT by providing the technical assistance required for these reviews as requested.

ERCOT Disturbance Review

The SPWG shall review any ERCOT disturbances requested by the ROS. Additionally, each SPWG member should discuss any significant or unusual events at regularly scheduled SPWG meetings.

345 kV System Disturbance Review and Case Validation

Each 345 kV transmission facility owner shall evaluate the accuracy of their 345kV portion of the SPWG maintained current year short circuit case for 345kV faults in known locations. This short circuit case evaluation shall be performed annually. This evaluation shall be completed by the November meeting of the SPWG for faults occurring prior to September 30th of that year. Once a cause of any discrepancies or deficiencies in the short circuit case is identified, corrections shall be made before the next year short circuit case update.

6. Reporting of Protective Relay System and Automatic Reclosing Misoperations

Reporting of protective relay system and automatic reclosing misoperations shall be submitted per the Regional Entity procedures.

Protective relay system and automatic reclosing misoperations shall be reported in the format requested by the Regional Entity. The submitted data shall include all applicable protective relay system and automatic reclosing misoperations occurring on Resource Systems and at Transmission Facilities 100 kV and above.

7. Procedures for the Review and Maintenance of Nodal Operating Guide Requirements on Disturbance Monitoring and System Protection

The SPWG shall be responsible for the review and maintenance of ERCOT Nodal Operating Guide requirements on disturbance monitoring and system protection. Revisions to the Nodal Operating Guides shall be presented to the ROS for approval in accordance with ERCOT "Process for Nodal Operating Guide Revision". At a minimum, a review of this guide shall be done on an annual basis, typically during the November SPWG meeting.