

Overview

The North American Electrical Reliability Corporation (NERC) continues to expand its standards, striving to increase power grid reliability and resilience to system disturbances. History-making blackouts, unexpected equipment failures, power disturbances, and the growing cyber threat are all factors leading to regular releases of new and updated standards.

With each new or updated standard NERC specifies a set of requirements and rolling compliance deadlines making it a challenge to maintain compliance. Maintenance engineers and compliance managers must be current on the latest updates, have a detailed understanding of each standard's requirements, and also have the expertise to know how to apply the standards to their electrical system.

NERC reliability standards include specific sections related to generation-owner requirements, impacting the documentation, design, modeling, and maintenance of their protection and control systems. They include NERC PRC-002, 005, 019, 024, 025, 027 and MOD-025, 026, 027, 032. Understanding and complying with these standards requires considerable knowledge of the technical aspects and methodology used to successfully implement the requirements.



Ensure compliance with NERC PRC and MOD regulatory requirements

Electrical Reliability Services (ERS) maintains a team of dedicated NERC Compliance Specialists who have the expertise to help design and manage your compliance program. They will work with your maintenance and compliance engineers to create a customized compliance and Protection System Maintenance Plan (PSMP). Our experts document equipment records and system data, evaluate and verify settings, event recordings, and dynamic models to ensure accurate reporting in preparation for audits. We will provide system analyses, field testing, upgrade recommendations, and can offer a complete turnkey solution, starting with engineering design and procurement, through construction and acceptance testing. No matter what level of service you require, you can rely on ERS to ensure your facility is fully NERC compliant.

Protection Systems Subject to NERC Requirements

- Generator Protection
- Main Transformer Protection

- Station Service Transformer, Unit Auxiliary Transformer, and Excitation Transformer Protection
- Transmission Lines and Substation Bus Protection
- Undervoltage or Underfrequency Load-Shedding Protection
- Sudden Pressure Relaying
- Automatic Reclosing

Equipment Subject to NERC Requirements:

- Protective Relays
- Reclosing and Supervisory Relays
- Sudden Pressure Relays
- Voltage and Current Sensing Devices (CT/PT)
- Station DC Supply
- Communication Systems
- Control Circuitry Associated with Protective Functions
- Control Circuitry Associated with Reclosing and Supervisory Relays
- Alarming Paths and Monitoring

ERS Services Include:

NERC Standard	Application	Electrical Reliability Services
PRC-002	GEN ≥ 500MVA, or GEN ≥ 300MVA where Gross Facility ≥ 1,000 MVA	<ul style="list-style-type: none"> Evaluation of existing plant's sequence of event recorder (SER), fault recorder (FR), and dynamic disturbance recorder (DDR) performances Recommendation for SER/FR/DDR system upgrades
PRC-005	Individual GEN>20MVA Aggregated GEN>75MVA	<ul style="list-style-type: none"> PRC-005 scoping based on the Client's PSMP to identify protection system components that are due for maintenance Development of Method of Procedures for maintenance testing Outage planning and maintenance testing Preparation of test reports Identification of unresolved maintenance issues and recommendation for components replacements or upgrades
PRC-019	Individual GEN>20MVA Aggregated GEN>75MVA	<ul style="list-style-type: none"> Evaluation of existing plant capabilities; voltage regulator limiters & protection, and protective relay settings Recommendation for setting changes or relay retrofits to achieve compliance
PRC-024	Individual GEN>20MVA Aggregated GEN>75MVA	<ul style="list-style-type: none"> Evaluation of existing frequency and voltage relay settings Recommendation for setting changes or relay retrofits to achieve compliance
PRC-025	Individual GEN>20MVA Aggregated GEN>75MVA	<ul style="list-style-type: none"> Evaluation of existing distance, overcurrent, and directional overcurrent relay settings Recommendation for setting changes, or relay retrofits to achieve compliance
PRC-027	Individual GEN>20MVA Aggregated GEN>75MVA	<ul style="list-style-type: none"> Review of existing protection schemes to verify protection coordination between generation & transmission owners Recommendation for setting changes or relay retrofits to achieve compliance
MOD-025	Individual GEN>20MVA Aggregated GEN>75MVA	<ul style="list-style-type: none"> Develop Method of Procedure for generator reactive power verification test Perform compliance testing for minimum and maximum load reactive power verification
MOD-026	Eastern: GEN (ind. or agg.)>100MVA Western: GEN (ind. or agg.)>75 MVA ERCOT: GEN (ind.)>50MVA, GEN (agg.)>75	<ul style="list-style-type: none"> Develop Method of Procedures for excitation control system model verification Perform compliance testing and model the generator & excitation control system to match test results Prepare model quality test report
MOD-027	Eastern: GEN (ind. or agg.)>100MVA Western: GEN (ind. or agg.)>75 MVA ERCOT: GEN (ind.)>50MVA, GEN (agg.)>75	<ul style="list-style-type: none"> Develop Method of Procedure for turbine governor model verification Perform compliance testing and model the turbine governor control system to match test results Prepare model quality test report
MOD-032	Individual GEN>20MVA Aggregated GEN>75MVA	<ul style="list-style-type: none"> Review data requirements Obtain information for the steady-state, dynamic and short circuit modeling data from plant document and drawings Prepare the data reporting form

Summary

The experts at ERS are ready to help you through each step of the compliance process. With our expertise, we will assist you in developing and executing a plan to achieve full NERC compliance in accordance with the required deadlines.

Order Information

To learn more about ERS' NERC compliance solutions, please contact us at 1-877-468-6384 or visit ERS.vertiv.com.

NEXT LEVEL RELIABILITY

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