

RELAY MAINTENANCE AND TESTING

Preventive Maintenance



BENEFITS

Gain System Reliability and Asset Protection Support

Today's challenges in relay maintenance and testing are many. Due to rapid advances in technology, it's not unusual for one utility or plant to operate multiple generations of relays all in one integrated protection scheme. Ensuring your system is properly protected requires a high learning curve and unique skill sets for each technology in operation. This can be difficult to manage in-house without the assistance of outside technical resources familiar with the various relay manufacturers' operating philosophies. Trust Vertiv™ to deliver complete relay solutions for all major manufacturers. From electromechanical, solid-state, and microprocessor-based relays to IEC 61850 IEDs, relay panels, and distributed protection systems, Vertiv has qualified resources to meet your needs.

Benefits

- Avoid substantial financial loss associated with service disruptions
- Eliminate unplanned downtime through cost-effective testing and maintenance
- Ensure ongoing reliability of electrical generation, transmission, and distribution systems
- Avoid costly penalties associated with a negative impact on the Bulk Electric System (BES)
- Ensure timely reporting for NERC compliance



Ensure optimum system performance, efficiency, and safety with Vertiv's relay maintenance and testing

Protection systems play a key role in ensuring the safe and reliable operation of today's entire electrical grid including generation, transmission and distribution for utility and industrial applications.

The protective relay is your most powerful defense against long, costly outages and extensive equipment damage. In the event of a fault, they keep the damage to a minimum, helping you reduce downtime, prevent equipment damage, and most importantly, protect people.

For more than 40 years, Vertiv's Electrical Reliability Services team has been providing startup, commissioning, testing, maintenance, and engineering services for advanced relay systems. As a member of the InterNational Electrical Testing Association (NETA), we can provide independent testing for any manufacturer's relay devices or systems.

Vertiv's solutions for maintaining and testing electromechanical, solid-state, and microprocessor-based relays, as well as IEC 61850 IEDs, relay panels and distributed protection systems include:

- Relay startup and commissioning
- Relay maintenance and testing
- Leading-edge technology
- Compliance support for NFPA and NERC

Relay Startup and Commissioning

New relay installations require startup and commissioning to ensure proper protection for your system. Our experience in advanced utility and industrial relay applications includes:

- General inspection of equipment
- Wiring diagram check with functional and point-to-point wiring checks
- Insulation resistance measurements
- Relay device testing
- Current and voltage transformer testing
- Verification of relay alarm and trip settings
- Primary and secondary injection testing
- End-to-end testing of protection scheme logic

Relay Maintenance and Testing

Periodic maintenance and testing is necessary to ensure your protection scheme continues to provide satisfactory performance for many years after installation. With microprocessor relays, the built-in, self-testing features can be expected to reveal most faults, but this alone does not meet regulatory requirements or cover the other components involved in the protection scheme. Regular inspection and testing of a protection scheme is therefore recommended.

The experienced relay technicians of Vertiv™ understand the critical nature of working with an active protection scheme and the impact testing and maintenance has on critical system operation. Our

technicians perform testing based on the maintenance recommendations from NETA, NERC and NFPA, as well as specific customer requirements. Tests vary based on the relay technology, but may include:

- Visual and mechanical inspection
- Insulation resistance measurements
- Secondary injection tests
- Verification of relay settings
- Functional testing on wire connections, current and voltage transformers, and all auxiliary devices
- Control verification

Leading-Edge Technology

Vertiv's Electrical Reliability Services utilizes advanced technology for relay testing services, allowing us to provide you with the the most efficient solution. The equipment and software used by our test technicians includes Doble, Manta, Omicron, PowerDB, Enoserv RTS, and Doble ProTest, just to name a few.

Compliance Support for NFPA and NERC

Whether working in a substation or power plant, regulations from NFPA and NERC require an ongoing and systematic program to test, maintain, and document the performance of your protection scheme devices and systems that impact the Bulk Electric System. Complying with these requirements can exceed the capacity of your in-house resources. We have extensive experience helping customers adhere to industry standards and can assist with asset management, testing, and reporting to ensure your compliance with NFPA and NERC requirements.

Summary

There is no aspect of an electrical system that is scrutinized more than the electrical protection scheme. Our customers expect and demand that we provide highly qualified personnel who have the expertise to work in a variety of environments, as well as on a diverse installed base of devices with different operating practices. By drawing on our nationwide network of resources for relay maintenance and testing, Vertiv's Electrical Reliability Services can meet that demand for qualified support today and tomorrow.

Ordering Information

To learn more about this service and other Vertiv solutions, please contact your local sales representative office for Vertiv's Electrical Reliability Services or visit VertivCo.com. In the United States, call 1-877-468-6384.