

Electrical Maintenance Testing

Electrical Systems Thrive with Preventive Maintenance

According to IEEE, implementing preventive maintenance can increase system reliability by 35-40% by identifying system issues before they can cause destructive, dangerous, and costly incidents and outages.

Relatively minor issues can have disastrous impacts if left unchecked. A loose lug connection, for example, can allow current to arc across small air gaps as the connection between metal surfaces worsens. Accumulated dust - especially in moist or oily environments - reduces the dielectric strength of insulating surfaces, leading to increased instances of arcing or short circuiting.

The regular cleaning, inspecting, testing, and servicing inherent to a preventive maintenance strategy reduces the impact of such avoidable incidents.

Maintenance testing supports:

- Enhanced personnel safety
- Reduced costly unplanned downtime
- Improved power quality
- Optimized energy efficiency
- Compliance with safety and maintenance standards
- Informed and efficient capital expenditure planning



Proactive Maintenance for Reliability and Cost Efficiency

Reliable electrical systems are essential to protecting productivity, critical assets, and personnel. Maintenance testing keeps system components operating as intended, identifying wear and early indicators of failure before they escalate into safety risks or operational disruptions.

Maintenance testing is a strategic investment in safety, reliability, and long-term performance. Regular testing, as required by NFPA 70B, delivers measurable lifecycle benefits by reducing emergency repairs, strengthening power quality, improving energy efficiency, and supporting compliance with safety standards.

Staying in cycle with electrical maintenance helps prevent costly surprises and keeps systems performing at their best. Partnering with a qualified electrical testing company provides consistent inspections, expert insight into potential issues, and proactive service.

Our Services:

ERS' electrical maintenance services provide comprehensive solutions to keep critical power systems safe, reliable, and efficient.

Preventive Maintenance (PM) Testing

Provides regular inspection and testing of electrical system assets to support safe, reliable operation and reduce lifecycle maintenance costs. Services include maintenance and testing for switchgear and switches, battery and UPS systems, cables and busbars, generators, and grounding systems, as well as support for turnarounds and outages. All work is performed in accordance with the ANSI/NETA MTS standard for maintenance testing.

Predictive Maintenance (PdM)

Uses advanced diagnostic technologies—such as infrared and thermographic inspection, partial discharge analysis, ultrasonic inspection, oil and fluid testing, and power quality assessment—to identify early signs of asset degradation and determine when maintenance should be performed to avoid unplanned downtime.

Protective Relay Testing

Provides periodic testing, configuration, and integration support for a wide range of protective relay types to maintain proper system coordination and responsiveness. Services include relay performance verification, logic validation, and expert consultation to support protection schemes that may incorporate multiple relay types.

Circuit Breaker Maintenance Testing

Delivers NETA-based inspection, testing, and maintenance of circuit breakers to support equipment protection, operational continuity, and personnel safety. Maintenance testing identifies wear or impending failure and helps keep breakers operating properly when critical faults occur.

Life-Extension Services

Delivers cost-effective refurbishment, reconditioning, rebuilding, and retrofit solutions to extend the life of aging electrical equipment. Replacing electromechanical relays with modern digital packages and upgrading breakers with newer, more reliable technologies enhances system reliability and safety while reducing operating costs.

Troubleshooting, Repair, and Parts

When emergencies and unexpected repairs happen, responsive support is the quickest path to resolution. Experienced technicians and engineers deliver system inspection, technical repair recommendations, and asset repair, refurbishment, or replacement to restore system functionality and safety.

Summary

For more than 50 years, ERS has been a trusted partner for organizations seeking reliable, high-performance electrical maintenance solutions. Our approach combines deep technical expertise, practical experience, and a commitment to helping customers prevent downtime, extend asset life, and support safety.

As a leading employer of Level 3 and 4 NETA-certified technicians and an active contributor to NFPA and IEEE standards, we bring credibility, precision, and accountability to every engagement. From routine maintenance tasks to complex, mega-scale projects, our project managers, engineers, and field technicians provide comprehensive support from pre-construction through closeout.

We do not just test and maintain equipment; we deliver measurable results. Your electrical systems will remain resilient, compliant, and fully prepared to support continuous, safe, and efficient operations.

More Information

To learn more about electrical maintenance testing, please contact us at 1 (888) 468-6384 or visit ERS.vertiv.com