



Reduce unplanned downtime.

Maximize electrical reliability with maintenance and testing services.

schneider-electric.us/electrical-maintenance

Life Is On

Schneider
Electric

A trusted partner of Schneider Electric


GraybaR

For over 50 years, Schneider Electric has been trusted by top companies.

Automotive

- Chrysler®
- Honda of America
- Ford Motor Company
- General Motor Corp.

Chemical

- Pfizer Inc.
- INVISTA

Commercial

- Disney® Corp.
- The Home Depot®
- McDonald's Corp.
- UPS Corp.
- Hyatt Regency

Communications

- AT&T
- GTE
- Pacific Bell

Data Centers

- Lowe's
- Mayo Clinic
- M&T Bank

Educational

- Duke University®
- Harvard University
- Penn State University
- Texas A&M
- Vanderbilt University

Food and Beverage

- Coca-Cola Company
- General Foods
- Kraft Foods
- Nestle®
- Nabisco Foods
- Pepsi™ Cola

Government

- FAA
- Ft. Campbell
- IRS
- Pentagon
- U.S. Postal Service

Healthcare

- VA Hospital (various facilities)
- Massachusetts General Hospital
- Barnes Jewish Hospital

Manufacturing

- Kimberly Clark Corp.
- Dell™ Computer Corp.
- IBM® Corp.
- 3M™ Company
- Intel® Corp.
- Boeing Aircraft

Oil and Gas

- Koch
- ExxonMobil™
- Shell
- BP
- Chevron

Pharmaceutical

- Johnson & Johnson
- AstraZeneca
- Merck
- GlaxoSmithKline

Utility

- Commonwealth Edison
- TVA
- Northern States Power
- Southern Indiana Gas and Electric

Water Treatment

- WWTP Columbus
- LTC WWTP (Ph2)
- Pelham WWTP Expansion
- Four Mile Creek WWTP

81%

Best in class for customer satisfaction with an 81% customer net promoter score.

“Communication was great on the front end and the techs were really diligent on the job site.”

- Perdue Farms

“I’ve been very satisfied with their quality of work and equipment for many years. The knowledge of the techs as well.”

- Bristol-Myers Squibb Company

An effective and reliable electrical installation is **critical to any operation.**

Studies of electrical equipment maintenance show a strong correlation of maintenance level to reliability. The ultimate goal is to maximize equipment performance and minimize power outages or interruptions to operations or service.

Do you know what the financial impact of unplanned downtime means to your operation?

When an unexpected event happens, is the focus on restoring power as quickly as possible? And at all costs? Often, the tangible and intangible costs are not accounted for. The best way to avoid this financial impact is to reduce the risk of an unplanned outage.

An efficient and cost-effective maintenance strategy identifies the scope, amount, and frequency of maintenance activities to be carried out on each piece of electrical distribution equipment. This can be a complex undertaking, given the different types and manufacturers of equipment used within a facility. Few companies have in-house maintenance staff who are qualified to service all of the electrical components that make up the facility's power system.

Schneider Electric™ Field Services offers comprehensive maintenance and testing services that include:

- Preventive maintenance programs
- Advantage service plans
- Predictive maintenance technologies

We can customize a program based upon your specific requirements to maximize electrical reliability and minimize downtime.

Following are the most common causes* of electrical equipment breakdowns:



Mechanical failure

Loose connections, overheating, load changes, and/or additions



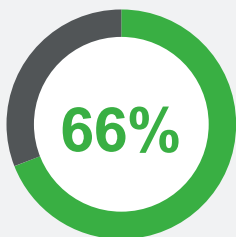
Environmental conditions

Humidity, corrosive environments, dirt, or dust may require preventive maintenance more frequently than the OEM's recommended schedule



Work improperly performed

OSHA and NFPA require electrical equipment maintenance to be performed by qualified personnel



Did you know?

Having a preventive maintenance program in place can reduce the risk of unplanned downtime by as much as 66%, according to IEEE.

Our national network of qualified field service representatives has the expertise to work on any manufacturer's electrical distribution equipment.

Any brand. Any industry. Any time.

*Source: Hartford Steam Boiler Inspection and Insurance Company

Preventive maintenance and testing.

“A well-administered Electrical Preventive Maintenance program: reduces accidents, saves lives and minimizes costly breakdowns and unplanned shutdowns of production equipment.... Impending troubles can be identified, and solutions applied, before they become major problems requiring more expensive, time consuming solutions.” — NFPA 70B-2016 Ed., Section 4.2.1

An electrical preventive maintenance and testing program should incorporate all electrical power distribution equipment, regardless of the manufacturer. Following are recommended items or equipment to be incorporated:

- Automatic transfer switches
- Optional standby generators
- Bonding and grounding systems
- Panelboards
- Busway
- Protective relays
- Circuit breakers
- Service-entrance switchgear
- Metering equipment
- Switchboards
- Monitoring equipment
- Transformers
- Motor control centers
- UPS systems

Schneider Electric Field Services provides comprehensive maintenance and testing services through our nationwide network of field service representatives. Our personnel are qualified, as defined by OSHA and NFPA 70E, and have the expertise to work on any manufacturer's electrical distribution equipment. Our work scope includes:

- Inspection
- Cleaning and lubrication
- Adjustments
- Overcurrent protective device testing
- Oil testing
- Electrical testing
 - Insulation
 - Current path
 - System function

Benefits of a preventive maintenance program

Minimizes operating costs

- Reduces staffing requirements via outsourcing
- Reduces repair costs and costly equipment breakdowns

Improves power system reliability

- Maximizes electrical equipment productivity
- Helps ensure electrical integrity of system
- Increases uptime and facility and equipment utilization

Extends equipment life

- Forestalls the need to buy new equipment

Provides documentation for maintenance activities

- Details test results and summarizes technicians' comments
- Reports can be customized based upon your specifications
- Ensures data integrity via built-in equations and correction factors

Pay now or pay (more) later

Do you know that increasing planned maintenance activities by 10% yields big savings? Visit our interactive calculator to see how much further your maintenance budget can go!

To access, go to <http://bit.ly/maintenance-calculator>



Advantage Service Plans

Fixed-rate service plans mitigate your risk of downtime and unexpected repair costs.

Service provided	Description	Advantage Service Plans		
		Plus	Prime	Ultra
Technical support access	24/7 access to industry-leading expertise	✓	✓	✓
Preventive maintenance ¹	Regularly-scheduled maintenance and testing performed by qualified service personnel increases equipment reliability and identifies potential issues	✓	✓	✓
Preferred pricing for parts and services	Pricing discounts on additional parts and services	✓	✓	✓
Test results with engineer review and recommendations	Detailed reporting of maintenance and testing activities, including corrective recommendations	✓	✓	✓
Guaranteed on-site repair response ²	Labor and travel for on-site response for remedial repairs; 24/7 priority upgrades are available	*	✓	✓
Repair parts	Replacement parts used during repair visits, which further improves budget stability	*	*	✓

*Available at preferred rates

Optional upgrades:

1. After-hours preventive maintenance

2. Twenty-four/seven priority response and four-hour response (where available)

Without a proper maintenance strategy for your electrical distribution equipment, it's just a matter of time before costly breakdowns occur. Having an Advantage Service Plan in place minimizes unplanned outages. Should an issue arise, we will ensure prompt response to get you back up and running. Best of all, our fixed-rate service plans take the guesswork out of your budget since there are no hidden charges.

There are three Advantage Service Plans to choose from. Descriptions of each service plan are shown in the table to the left. You also have the flexibility to choose a 12-month, 36-month, or 72-month term.

- Our comprehensive preventive maintenance scope of work includes:
 - Inspections and adjustments
 - Overcurrent protective device testing
 - Cleaning and lubrication
 - Electrical testing
 - Infrared electrical inspection
- Advantage Service Plans cover primary electrical distribution system components serving a facility, even other manufacturers' equipment.
- Billing can be structured to provide a fixed payment schedule, which will prevent fluctuations to your maintenance and repair budget.

For more information, download the White Paper "Service Plans Enhance the Benefits of Preventive Maintenance Programs."

To access, go to
<http://bit.ly/service-plans-add-value>

Predictive maintenance technologies

Monitoring the condition of electrical equipment provides trending data to help anticipate and plan maintenance activities.

Predictive maintenance technologies reduce downtime and improve workplace safety. Having regular access to the current state of the equipment helps to determine when maintenance should be performed.

Infrared viewing windows

Schneider Electric Field Services offers a variety of infrared windows and panel covers that reduce the need to remove panels or covers for infrared and visual inspections.

They are:

- H.VIR COMET Infrared Windows
- CAP series: Industrial-grade viewing windows
- TPC series: Transmissive panel covers
- H.VIS Electric Eye viewing windows

With our infrared viewing windows or panels installed, there is no need to de-energize equipment during an infrared inspection since they are permanently retrofit into the electrical equipment. Once installed, infrared inspections can be performed safely and without downtime.

Wireless temperature monitoring system

Overheating is frequently an early indication of electrical equipment damage or breakdown. The wireless temperature monitoring system (WTMS) provides continuous online temperature monitoring of critical connection points in electrical equipment. Since sensors can be placed in locations usually not accessible with an infrared camera, WTMS can complement an infrared thermography program.

Partial discharge monitoring

Partial discharge (PD) is a localized electrical discharge in an insulation system. A leading indicator of insulation breakdown, PD occurs in electrical equipment under high voltage stress, usually 2,000 V or greater.

Partial discharge monitoring operates continuously and provides early warning alarms to help prevent downtime. Sensors are installed during a planned outage and wired to a monitoring unit, which can be tied into an existing SCADA system via open protocol. Web hosting is also available.



Asset Performance Monitoring as a Service

Condition-based maintenance with predictive insights

While many companies are adopting advanced maintenance models for their most valuable assets (IT mainframes and servers, power generators, automated production lines, etc.), electrical distribution systems lag behind.

Introducing Asset Performance Monitoring as a Service (APM-aaS) from Schneider Electric. This innovative approach provides:

- Access to key equipment data whenever you need it
- Assistance from experienced professionals to make better informed decisions
- Knowledge of which assets need to be serviced or replaced and benchmark how they are performing and aging

To learn more about APM-aaS, go to <http://bit.ly/asset-performance-monitoring>

Your single-source service provider

And when we say “single source,” we mean it! Our national team of qualified professionals has the expertise to service ANY brand of equipment. To see just how much we stand out from other providers, take a moment to review our qualifications ...

To enable you to operate at peak performance by delivering expert care throughout the life cycle of your electrical distribution system.



Over 200 professional engineers collectively registered in every state
Over 20,000 power system studies, assessments, and designs
Over 50 years of field services experience

- Maintenance and testing services
Switchgear modernization solutions
- Power system engineering services
Custom and turnkey solutions
New installation services
Emergency services 24/7

We are available on-demand or by appointment.
Emergency services available 24/7: 888-778-2733.
Visit: schneider-electric.us/electrical-maintenance

Any brand. Any industry. Any time.

COMMITTED TO SAFETY

8X

lower incident rate than national average

300+

operational safety awards by the National Safety Council in the past two years



National network

of **qualified** field service representatives, as defined by OSHA/NFPA 70E



1 of 3 companies in the world

to simultaneously hold the Robert W. Campbell and Green Cross Awards for safety excellence

COMMITTED TO CUSTOMERS

81%

customer net promoter score, proving our best-in-class customer satisfaction

How can we help you?

Our professional engineers and qualified field service personnel are ready and available to help you keep your facility safe, reliable, productive, and efficient.

888-778-2733

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