

# UPS Maintenance and Renewal

Preventive Maintenance, Replacement and Upgrades

**ERS**   
ELECTRICAL RELIABILITY SERVICES  
A VERTIV Company

## Benefits

Businesses rely on the coordination of their total electrical power system to provide reliable uninterrupted power and sustain their operation. The coordination of the AC and DC power systems is critical to ensure power, 24x7.

The DC system's industrial uninterruptible power supply (UPS) is responsible for your dependable power quality. It corrects equipment-damaging power issues such as sags, spikes, and harmonic distortion and supplies continuous power to critical loads in the case of AC power failure. The uninterrupted, clean power delivered by the UPS safeguards critical applications such as petrochemical processing, power generation, commercial services, and power transmission and distribution. For these types of businesses, power interruption is not an option!

When power interruptions occur, there can be serious consequences such as production disruption, chemical instability, critical services interruption, damage to processing equipment, or in some cases, the complete shutdown of a facility. With so much at stake, it's important to protect your power system by performing routine preventive maintenance — ensuring the maximum reliability of the DC power system including the UPS, batteries, chargers and inverters.

### Benefits

- Maximize availability
- Safeguard critical assets and processes
- Comply with regulatory requirements
- Maintain a safe work environment



## The continuous operation of your electrical power system depends on the reliability of your UPS system

Over time, your UPS components will become worn or obsolete and reach their end-of-life. These systems have higher maintenance requirements, pose higher safety risks for your personnel, and are at greater risk for failure. A misoperation can result in millions of dollars in lost productivity, spoiled product, damaged electrical equipment, and may even result in regulatory fines.

The life-limited components of your UPS need to be maintained according to manufacturer's specifications. To maximize the life of these components, regular maintenance is critical. An effective preventive maintenance strategy can be one of the most cost-effective measures you can take to ensure continuous power.

Electrical Reliability Services (ERS), DC Power Specialists and technicians are certified by the InterNational Electrical Testing Association (NETA). We have the knowledge and expertise to ensure the dependability of your UPS system and keep your system in compliance with the Institute of Electrical and Electronics Engineers (IEEE), the North American Electric Reliability Corporation (NERC),

and NETA standards. You'll be assigned a dedicated team that is trained and outfitted with the latest test equipment to deliver the highest level of quality service. Additionally, as a NETA Accredited Company, we deliver unbiased testing and maintenance services and have the expertise to maintain both AC and DC components for total power system protection.

You can rely on our trained technicians to understand the criticality of your UPS and battery systems. We provide a comprehensive set of maintenance and renewal services to ensure the uninterrupted operation of your total power chain.

Our UPS maintenance and renewal services include:

- UPS maintenance
- Inverter maintenance
- Battery maintenance
- Battery charger maintenance
- Capacity testing
- UPS battery monitoring
- UPS renewal services

## UPS Maintenance

A comprehensive preventive maintenance program includes routine inspections and testing. Our DC power specialists will test your UPS systems' safety and control functions and connections to ensure proper operation. This includes a visual and mechanical inspection, thermographic scan, electrical and mechanical interlock systems tests, alarm history review, insulation resistance tests, electronics calibration, and verification of alarm circuits and indicators.

## Inverter Maintenance

The inverter is critical to maintaining clean, continuous power. Our DC specialists ensure proper functionality by checking input/output voltage and currents, system alignment, and DC bus voltage and ripple on the system battery.

## Battery Maintenance

Proper battery maintenance not only prevents unexpected failures, but can also extend battery service life to reduce the frequency of required replacements. Our battery maintenance services validate the condition of the battery and include resistance testing on battery strings and individual cells, recording of float voltage measurements and specific gravity readings, and adjustment to connections and fluid levels as needed.

## Battery Charger Maintenance

As part of a complete battery solution, our technicians maintain your batteries, as well as the equipment that keeps your batteries working as intended. Our battery charger maintenance service includes regular equipment inspections to ensure your batteries maintain the appropriate level of charge at all times. We will conduct a general inspection of the charger cabinet for cleanliness, examine

interconnection cables between the battery and the charger for discoloration and corrosion, check the charger's voltage settings, and adjust settings as needed to match the battery manufacturer's recommendations.

## Capacity Testing

Capacity testing is the most effective method available for determining a battery's ability to provide a reliable power source and to support the required load for a specific period of time. Our trained battery specialists perform all capacity tests per IEEE standards and manufacturer specifications. This includes load testing with individual cell monitoring to check battery bank capacity. Test results identify when battery reserve is low, so you know when it is time for replacement.

## UPS Battery Monitoring

Using the Albér® monitoring system and qualified battery monitoring specialists to assess your UPS battery strings around the clock increases the mean time between failures by more than double when compared to preventive maintenance alone. Our 24x7 remote monitoring services help you detect and diagnose problems that may otherwise go undetected, such as leaking water, failing batteries, and more. Our services also include emergency service for rapid incident response, as well as monthly trending and reporting for better UPS battery management.

## UPS Renewal Services

All electrical components have a finite life span. Our UPS renewal services will restore your emergency power system to original equipment manufacturer specification. We will design a battery replacement program and deliver an

end-to-end replacement solution, including the installation of new battery cells and modernized control systems for the UPS, inverter, and/or battery charger. We'll replace most major components including capacitors and fans, printed circuit boards, chokes, meters, potentiometers, relays/sockets, LEDs, switches, push buttons, fuses and timers, then test and calibrate to OEM specifications to complete the job.

## Summary

Your AC and DC power systems play an interconnected and equally critical role in ensuring the overall reliability of your electrical power system. Your industrial UPS system is critical to keeping your processes and operations running 24x7. A properly functioning UPS depends on a routine preventive maintenance program to ensure all UPS components and battery systems are operating reliably for total system availability.

## Next Level Reliability

ERS' DC Power Specialists offer unparalleled expertise in DC power system maintenance. We deliver consistent, quality service that is performed safely and in compliance with regulatory requirements. Additionally, to assist you with urgent situations affecting your UPS, battery systems, battery chargers and inverters, we also offer on-site emergency service.

## Order Information

To learn more about our UPS Maintenance and Replacement Services, contact your local service center, visit [ERS.vertiv.com](http://ERS.vertiv.com), or call 1-877-468-6384.