



**PRASA**

[www.prasa-pl.com](http://www.prasa-pl.com)

# **PRASA'S CRITICAL POWER SERVICES**

**UPS & ATS AMC  
BATTERY & INVERTER AMC  
GRID-TO-CHIP MAINTENANCE**



## ENSURE THE CONTINUOUS OPERATION OF YOUR FACILITY

**Services for UPS, Batteries, Power, Static Switches etc.**

Every emergency power system contains life-limited components that must be maintained according to the 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 the continuous power to both your critical processes and your entire plant. PRASA's Electrical Reliability Services is an authorized Emerson/Vertiv service provider with access to their OEM parts, technical support and design engineering resources. With this expertise, PRASA can provide solutions for Power and any other manufacturer's emergency power system. PRASA offers a variety of services to ensure these systems are performing properly and will support the critical load. Whether you need startup support, routine maintenance or emergency response, we have the personnel and the technical expertise to support your service needs.

- ◆ **Startup and Commissioning Services**
- ◆ **Maintenance & Testing Services**
- ◆ **Life-Extension Services**
- ◆ **Battery Replacements**
- ◆ **Emergency Services**

## Downtime Is Not An Option

The industrial uninterruptible power supply (UPS) is the foundation of your emergency power system. Unlike the commercial UPS designed to protect critical IT loads, the industrial UPS protects critical processes, control systems and fire/life safety systems. For applications such as oil and gas, petrochemical and power generation plants, when the power is interrupted, it can cause dangerous chemical process instability, damage to process equipment, or in some cases, the complete shutdown of the facility costing millions in lost production, damaged equipment, and loss of production time.

When so much is at stake, it's important to protect your emergency power system by performing routine preventive maintenance ensuring maximum reliability of the backup system including the UPS, batteries, chargers, inverters and static switches, electrical filters etc.





## START-UP AND COMMISSIONING SERVICES

New equipment installations require startup and commissioning to ensure your emergency power system has been correctly installed and configured and will perform as designed. PRASA's highly qualified personnel will conduct testing to verify the system operates as an integrated system and will support the critical load during power interruptions. All testing is conducted in accordance with the manufacturer's and NETA's testing specifications. This includes the following tests:

- ◆ **Visual and mechanical inspection of the equipment including subassemblies, wiring harnesses, contacts, cables and major components**
- ◆ **Electrical and mechanical functional tests.**
- ◆ **Thermographic scan to check temperatures on all breakers, connections, and associated controls. (Optional)**
- ◆ **Verification of alarm circuits and indicators for static switch bypass switches**

## MAINTENANCE AND TESTING SERVICES

A regular preventive maintenance program from PRASA ensures maximum reliability of your equipment by providing systematic inspections, detection, and correction of incipient failures before they develop into major defects that could translate into costly downtime. Our trained technicians understand the critical nature of working on your emergency power system. All testing will be performed based on the maintenance recommendations from NETA and NFPA for UPS, batteries, inverters, and associated components. PRASA will also ensure compliance with IEEE standards.



### UPS Maintenance

We'll test your UPS systems safety functions, control function, batteries 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, verification of alarm circuits and indicators, replacement of life-limited components as required, static transfer tests, battery operation and return test, load balancing evaluation, phase rotation and site wiring checks.

### Battery Maintenance

In the event of a power outage, a single bad cell in a string of batteries could compromise your entire backup system and leave you without protection. Frequent battery inspections identify weak or failing batteries. Timely assessments of the cell and string state of health helps identify when batteries need replaced to ensure system reliability. PRASA's technicians and engineers can design a maintenance plan based around tests and procedures that meet the requirements of NETA, IEEE, and/or NERC depending on your application.

# EMERGENCY POWER SYSTEM RECOMMENDED MAINTENANCE

The Electric Power Research Institute (EPRI) estimates the national cost of power interruptions is a huge cost per year to electrical customers. With momentary interruptions accounting for two-thirds of the total cost. Studies have also shown that nearly 67 percent of all load losses are preventable. Because companies rely on their emergency power system to deliver continuous power without any disruption to their business, a maintenance program, similar to the one outlined below, is critical to ensure that your emergency power system minimizes your risk of downtime.

## UPS SYSTEMS

PROCEDURE	FREQUENCY
● Conduct visual and mechanical inspection	1 Month
● Perform functional testing	2 Months
● Thermographic scan of breakers, connections	6 Months
● Perform electrical and mechanical interlock systems tests	3 Months
● Review alarm history inspect filters and vents	3 Months
● Measure voltage readings for input/output and bypass; measure power supply levels and harmonic currents	3 Months
● Calibrate electronics to system specifications	12 Months
● Verify alarm circuits and indicators for static witch and bypass switches	3 Months
● Replace life-limited components as required	12 Months
● Test static transfer from invert to bypass and back	6 Months
● Verify battery operation and return tests to UPS, generator, and ATS functions	3 Months
● Evaluate load balancing	3 Months
● Check phase rotation and site wiring	3 Months



### UPS MAINTENANCE

PRASA technicians will also inspect and verify the UPS features and functionality including proper operation; input/output voltage and currents; system alignment; and verification of DC bus voltage and ripple on the battery plant.



### BATTERY MAINTENANCE

PRASA ensure that the battery maintain the appropriate level of charge. Periodic maintenance should verify proper operation and examine interconnection cables, cell connectors, and other conductors for wear, contamination, corrosion and discolorations. Racks should be checked for corrosion, cleanliness and structural integrity.



### PARTS AVAILABILITY

Our field service technicians adhere to recommended parts replacement cycles and have access to local OEM spare parts inventory to perform corrective maintenance as required. Technicians can also provide spare part recommendations to reduce downtime should a failure occur.



# BATTERIES

## PROCEDURE

- Conduct visual and mechanical inspection
- Perform battery resistance testing
- Record float and supply voltage measurements
- Inspect electrolytes
- Record specific gravity readings
- Test battery bank capacity including load testing with individual cell monitoring

## FREQUENCY

3 Months  
3 Months  
12 Months  
12 Months  
12 Months  
As Per  
Manufacturer  
Specification

# STATIC SWITCHES

## PROCEDURE

- Inspect and verify operation and system alignment
- Record inverter and bypass input voltage and currents
- Record output voltage and currents

## FREQUENCY

3 Months  
6 Months  
12 Months

# AUTO TRANSFER SWITCH

## PROCEDURE

- Perform functional testing
- Inspect physical and mechanical condition
- Inspect bolted electrical connections
- Perform manual trans-fer operation
- Verify positive mechanical interlocking
- Perform insulation resistance tests, contact/pole-resistance tests
- Verify setting and operation of control devices
- Calibrate and set all relays and timers
- Perform automatic transfer tests to simulate loss of normal power, return emergency power, and simulate all forms of single-phase conditions
- Verify correct operation and timing of relays, engine start sequence, time operation;

## FREQUENCY

2 Months  
3 Months  
3 Months  
3 Months  
6 Months  
6 Months  
12 Months  
12 Months  
12 Months  
12 Months



# RELIABILITY

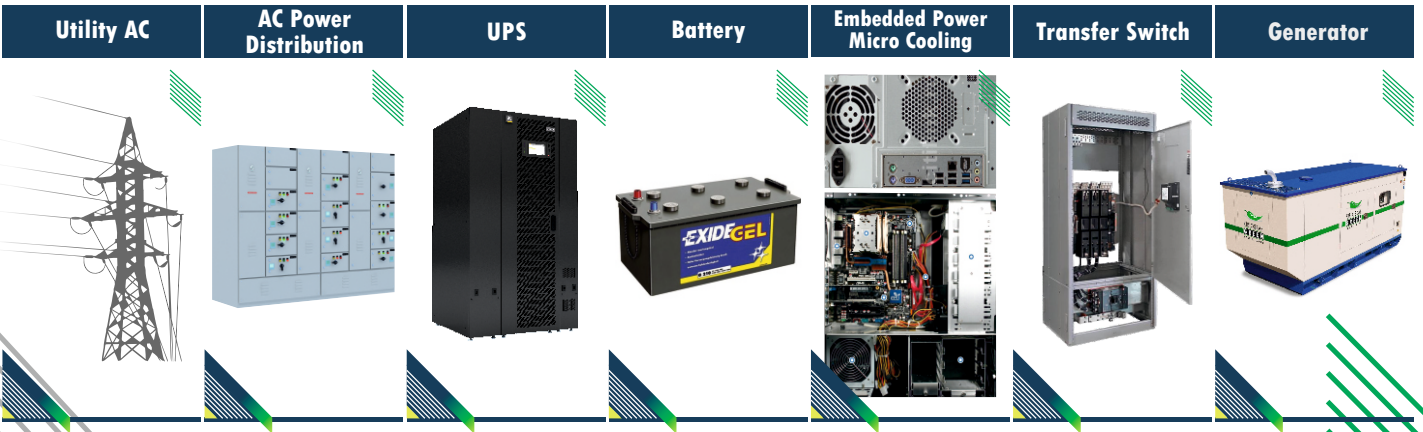
Ensure operational reliability with preventive maintenance | Minimize risk of downtime | Enhance effective life and backup time of battery

## INBOUND POWER

## POWER SYSTEMS

## EMBEDDED SOLUTIONS

## POWER PROTECTION

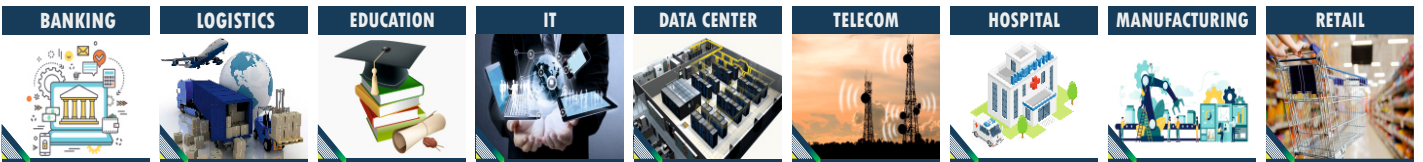


# SAFETY

Improve worker safety | Improve risk management and reduce catastrophic failures | Ensure regulatory compliance



## APPLICATION VERTICALS





# EXPERIENCE YOU CAN TRUST

For more than 25 years we have been providing electrical testing, maintenance and engineering services to more than 4,000 valued repeat customers in the industrial, chemical, power, food and beverage, life sciences, data centres, education, BFI, Corporate, Transport, Communication, IT, healthcare industries etc. Take a look at our proven track record and discover how we can help & ensure your success.

## YOUR ACCREDITED PARTNER

Being a Partner member of Vertiv, you are assured that the people working on your equipment are trained and qualified Engineers, you know that all test and inspection procedures are done in accordance with industry and regulatory standards.

## COMPREHENSIVE SERVICE & SUPPORT

Whether you need startup support, routine maintenance or emergency service, you can count on Us along with VERTIV to deliver complete life cycle service and support for all your electrical assets. we'll ensure your equipment operates within factory specifications ensuring continuous power to all your critical operations for years to come.

## PARTIAL CLIENT LIST:

AIR INDIA  
TATA MOTORS LTD.  
DEENANATH MANGESHKAR HOSPITAL (DMH)  
LUPIN PHARMA  
SAVITRIBAI PHULE PUNE UNIVERSITY  
FORBES MARSHALL  
TIMES OF INDIA LTD.  
INDIAN OIL CORPORATION LIMITED (IOCL)  
SECURITIES AND EXCHANGE BOARD OF INDIA (SEBI)  
INDIAN INSTITUTE OF SCIENCE EDUCATION & RESEARCH (IISER)  
INDIAN INSTITUTE OF TECHNOLOGY BOMBAY  
BAJAJ AUTO LTD.  
LG ELECTRONICS  
NATIONAL CHEMICAL LABORATORY  
PRIVILEGE BIKSONS BOILERS PRIVATE LIMITED  
ATRIA CONVERGENCE TECHNOLOGIES LTD  
TMEIC INDUSTRIAL SYSTEMS INDIA PRIVATE LIMITED  
EDCIL (INDIA) LIMITED  
KENNIGTON INDUSTRIES PVT LTD  
TATA MEMORIAL CENTRE (ADVANCED CENTRE FOR TREATMENT RESEARCH AND EDUCATION IN CANCER)-ACTREC  
GKN FOKKER ELMO INDIA PVT LTD  
INDIAN INSTITUTE OF TROPICAL METEOROLOGY  
EDELWEISS SECURITIES (IFSC) LIMITED  
INDIAN RAILWAY  
CENTRAL PUBLIC WORKS DEPARTMENT  
BHARATI VIDYAPEETH DEEMED UNIVERSITY MEDICAL COLLEGE  
SHIVAJI UNIVERSITY KOLHAPUR  
PUNE DISTRICT CENTRAL CO-OP. BANK  
SANGALI URBAN CO.OP BANK  
DENA BANK  
THE SINDHUDURG DISTRICT CENTRAL CO OPERATIVE BANK LTD  
CANARA BANK  
ABHYUDAYA CO-OPERATIVE BANK LIMITED  
SANMATI SAHAKARI BANK LTD  
SANGLI URBAN CO-OP BANK LTD, SANGLI  
MAZAGON DOCK SHIPBUILDERS LTD  
GHODAWAT FOODS INTERNATIONAL PVT LTD  
ATOS INDIA PRIVATE LIMITED  
NATIONAL CENTER FOR RADIO ASTROPHYSICS  
CRAY INC  
DEWAN HOUSING FINANCE CORP LTD  
SWAROVSKI INDIA PVT LTD  
HARMAN FINOCHEM LTD  
FINOLEX INDUSTRIES LTD  
ARMACELL INDIA PRIVATE LIMITED  
SHOPPERS STOP LIMITED  
BAJAJ AUTO LTD  
SAHYADRI HOSPITALS LIMITED  
BHARATI HOSPITAL & RESEARCH CENTRE  
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SHAPOORJI PALLONJI & CO PVT LTD  
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RELIANCE JIO INFOCOMM LIMITED  
SOFTWARE TECHNOLOGY PARKS OF INDIA  
VERAZ NETWORKS  
YASHWANT DHARMARTH RUGNALAYA  
NYATI ENGINEERS & CONSULTANTS PRIVATE LIMITED  
GHODAWAT TEXTILES  
NIKON INDIA PRIVATE LIMITED  
MAHINDRA & MAHINDRA LTD  
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BOSCH CHASSIS  
SONY INDIA PVT LTD  
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