

# **Scope of Work (SOW) for Installation, Commissioning of UPS APC Symmetra PX Static Switch, and Battery Replacement at NASREC.**

## **1. Project Title:**

Installation and Commissioning of APC Symmetra PX Static Switch (Model: SYSW500KD) for UPS 1 at NASREC Teleport, including Supply and Installation of 384 Batteries for Bank 1 and Software Upgrade if Required.

## **2. Objective:**

To install and commission the internal static switch (Model: SYSW500KD) of APC Symmetra PX UPS 1, ensuring seamless power transfer functionality, system stability, and compliance with industry standards. The work will also include supplying and installing 384 batteries for Bank 1, performing a software upgrade if required, downloading UPS logs, and generating a detailed report on system performance.

## **3. Scope of Work:**

### **3.1 Pre-Installation Assessment**

- 3.1.1 Conduct an on-site assessment of the existing UPS 1 setup at NASREC Teleport.
- 3.1.2 Verify the compatibility of the SYSW500KD static switch with the existing APC Symmetra PX UPS 1 system.
- 3.1.3 Check for any existing faults, alarms, or anomalies in the UPS system.
- 3.1.4 Inspect the condition of the existing batteries in Bank 1 to confirm the need for replacement.
- 3.1.5 Verify the current software/firmware version and determine if an upgrade is required.

## **4. Installation of Internal Static Switch**

- 4.1 Power down the affected UPS module following approved shutdown procedures.
- 4.2 Safely remove the faulty or existing static switch.
- 4.3 Install the new SYSW500KD static switch inside the APC Symmetra PX UPS 1.
- 4.4 Perform necessary wiring, connections, and secure all components as per manufacturer specifications.
- 4.5 Conduct an initial inspection to ensure proper installation.

## **5. Battery Replacement for Bank 1**

- 5.1 Supply 384 new 12V 9AH batteries for Bank 1.
- 5.2 The UPS has 48 battery cartridges, and inside each cartridge, there are 8 batteries ( $48 \times 8 = 384$  batteries).
- 5.3 Safely disconnect and remove the old batteries from Bank 1.
- 5.4 Inspect the battery compartment for any signs of corrosion, wear, or damage.
- 5.5 Install the new batteries as per the manufacturer's specifications.
- 5.6 Ensure proper wiring connections and battery management system (BMS) integration.
- 5.7 Perform a voltage and load test to verify battery performance and stability

## **6. Software Upgrade (if required)**

- 6.1 Check the current firmware and software versions of the UPS system.
- 6.2 Download and install the latest compatible software/firmware updates.
- 6.3 Verify system stability and compatibility after the upgrade.
- 6.4 Document the changes and provide a report on the upgrade process.

## **7. Commissioning and Functional Testing**

- 7.1 Power up the UPS 1 system and verify proper initialization.
- 7.2 Perform system diagnostics to confirm proper functionality of the new static switch.
- 7.3 Conduct load testing to ensure seamless power transfer between mains and battery backup.
- 7.4 Check for alarms, errors, or abnormal performance indicators.
- 7.5 Verify that the UPS operates as per design specifications and within manufacturer guidelines.
- 7.6 Conduct a battery runtime test to confirm proper functionality and expected performance.

## **8. UPS Logs Download and Reporting**

- 8.1 Extract system logs from the APC Symmetra PX UPS 1 before and after installation. (This should be done using a pc)

- 8.2 Analyze logs to detect any historical or active faults, warnings, and performance trends.
- 8.3 Generate a comprehensive report detailing:
  - 8.3.1 Current UPS health status
  - 8.3.2 Event logs before and after installation
  - 8.3.3 Any anomalies detected
  - 8.3.4 Recommendations for future maintenance

## **9. Handover and Documentation**

- 9.1 Provide a final installation report with details of the completed work.
- 9.2 Submit log analysis and recommendations report.
- 9.3 Conduct a brief training or walkthrough with the client on system status and any operational changes.

## **10. Responsibilities:**

### **10.1 Bidder's Responsibilities:**

- 10.1.1 Supply all necessary tools, equipment, and materials.
- 10.1.2 Execute the installation, commissioning, and battery replacement safely and professionally.
- 10.1.3 Perform thorough functional testing and reporting.
- 10.1.4 Ensure compliance with OEM guidelines and industry standards.
- 10.1.5 Provide a final report detailing work completed and UPS health analysis.

### **10.2 Client's Responsibilities:**

- 10.2.1 Provide the SYSW500KD static switch.
- 10.2.2 Ensure site access and necessary approvals.
- 10.2.3 Facilitate power shutdown (if required).

## **11. Safety and Compliance:**

- 11.1 All work must comply with manufacturer guidelines and electrical safety standards.
- 11.2 Personnel must use appropriate PPE (Personal Protective Equipment) during installation.
- 11.3 Environmental and electrical hazard protocols must be strictly observed.

## **12. Mandatory Requirement:**

12.1 The bidder must have previously worked on APC Symmetra 250 KW UPS.

## **13. Acceptance Criteria:**

13.1 Successful installation and commissioning of the SYSW500KD static switch.

13.2 Battery Bank 1 replacement completed, tested, and verified for proper operation.

13.3 Log reports confirm system stability and compliance with operational requirements.

13.4 Documentation and handover are completed to the client's satisfaction.

13.5 Warranty period for batteries and static switch installation is clearly defined.

## **14. Rate of Exchange, Currency Fluctuations and Currency**

All bid prices quoted shall be in South African Rands (ZAR). If prices are in a foreign currency, the rate of exchange quoted shall remain fixed throughout the term of the agreement. Bidders will bear the risk of and all cost/s associated with currency fluctuations, therefore Bidders shall be required to manage such risk in their bid price.

## **15. General - Prices**

All prices shall be quoted in ZAR.

Unless written approval has been obtained from Sentech, no adjustment in contract prices will be made.

Applications for price adjustment must be accompanied by documentary evidence in support of any adjustment.