METHOD STATEMENT FOR INSTALLATION, TESTING AND COMMISSIONING OF UPS

Project No:	

REVISION HISTORY	ISSUE DATE	DESCRIPTION	REVIEW / STATUS
00			

PREPARED BY:	**REVIEWED & APPROVED BY:**
QA QC ENGINEER	PROJECT ENGINEER

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1.0. PURPOSE

The purpose of this method statement define the procedure to be followed for the Installation, Testing, and Commissioning of UPS.

2.0. SCOPE

The scope of this method statement covers the following activities.

1. Material handling
2. Procedure
3. Precaution
4. Safety

3.0. REFERENCES

- Approved System Specifications
- Approved shop Drawing
- CLIENT Requirements

4.0. DEFINITIONS

SITE – Location of the project
MS – Method Statement
ITP – Inspection Test Plan
PPE – Personal Protective Equipment

5.0. RESPONSIBILITIES

- Project Engineer (Electrical)
  - Ensure that the activities are carried out according to the Specifications, drawing, and approved Method statement.
  - Ensure that all required submittals are made promptly.
  - Arrange all materials and tools required for installation as per agreed project schedule
  - Provide all necessary information and distribute the responsibilities to his unit installation team.
  - Monitoring that all process tests are carried out and obtaining approval from
  - Consultant's Representative
  - Monitoring and ensuring that the work is performed within the time and cost constraints.
- Foreman (Electrical)
  - Carrying out the work and the proper distribution of all the available resources in coordination with the Site Engineer daily.

- Continuous coordination and following the Site Engineer's instructions to meet quality requirements during the job execution.
- Incorporate all the QC and Safety requirements as requested by the Consultant's representative.
- Report to the Site Engineer the accomplishments and problems encountered daily.

6.0. EQUIPMENT'S AND TOOLS

- Crane or Boom Truck
- Fork Lift
- Hammer and screwdriver
- Laptop computer
- Approved test equipment
- Correctly rated load and cables

7.0. PROCEDURE

7.1. Receipt and Storage of Material

- The materials shall be offloaded in a designated location (in a weatherproof place) in original packing as far as possible.
- The permissible storage temperature shall be ensured to be maintained as mentioned in the instruction manual
- It shall be ensured that protection of UPS against damage

7.2. Installation Procedures

- Before installation, the concerned area shall be clean and free from dust.
- By using the crane, the pallets containing the battery & UPS shall be removed from the truck and it will be placed temporarily in the corridor as close to the UPS room as possible to avoid unnecessary ways.
- Ropes shall be attached far enough on the hoisting tackle so that they cannot exert any force on UPS.
- The ropes shall be slung around the ends of the wooden pallet.
- It shall be ensured that nobody is standing in the swinging area of the lifted UPS.
- Unload the transport units in packed condition and leave them packed as long as possible.
- After unloading all pallets in the temporary place, each pallet shall be dismantled carefully to take the subject materials out.
- Using a forklift, the UPS and Battery shall be moved to the place of installation in the UPS room.
- While moving through the corridor and inside the room, it shall be ensured that materials should not hit the side walls and other panels already installed in the room.
- While positioning the Battery and UPS, it shall be ensured that clearance between them and from the wall is as per the approved drawing.

7.3. Installation Check

- It is to be ensured for proper tightening of all external connections to UPS, battery, and load.

- It is to be ensured for proper AC phase rotation and DC connections' polarity.
- All protective earth connections are to be checked.
- Service switch installation is to be checked.

7.4. Inspection

Mechanical Inspection

General inspection of external steelwork & internal components:

- Physical damage internal or external.
  - UPS and cabinets lined up.
  - The doors are fixed properly.
- Electrical Inspection
  - The power cable size for UPS input, output, bypass, and battery cabinets.
  - Voltage measurement for UPS input, output, Bypass

7.5. Testing Procedure (Load Bank Test)

- Barriers/signs shall be erected if necessary to ensure personnel approaching the work area are adequately informed of the operation in progress.
- The cables of sufficient size shall be run to support the load bank.
- The final connection to the UPS shall be made at the output point once it has been established that it is DEAD and safe to do so.
- The load bank shall be energized with zero loads and checked for functionality if satisfactory the UPS shall be energized and switched to support the load bank.
- The load shall be applied to the kW rating of the UPS (assuming unity power factor load bank) and the UPS is allowed to run for 15 minutes.
- On starting the battery discharge test the mains shall be failed at the closest isolation point upstream of the UPS to simulate mains failure. Battery voltage and current will be recorded from the UPS display at 60-second intervals until cutoff voltage is achieved.
- The mains supply shall be reinstalled and the UPS allowed to restart, Recharge voltage and current shall be recorded and the battery allowed to recharge.
- Before disconnecting the load bank it shall be allowed to cool off the load and then switched off. The output of the UPS will be isolated to allow the load bank to be disconnected.
- On completion of the load bank test all connections, power, and control, shall be remade and checked.
  - If the battery still requires recharging the UPS shall be started and left to recharge either supplying the load or isolated from it
  - The load bank shall be packed for removal and stored safely until dispatched.
  - All barriers/signs were removed leaving the workplace as it was found
  - Results shall be drawn up into a report and a completion certificate issued

7.6. Safety Equipment

All necessary PPE and safety gear shall be worn at all times during the execution of work, in full compliance with safety requirements.

- Helmets
- Safety Shoes
- Hand gloves

- Safety signs
- Reflective Vest

7.7. Safety Checks

Safety checks will be made before the commencement of work to ensure that materials and equipment are in safe working order according to project and site regulations.

8.0. ATTACHMENTS

- Inspection Test Plan
- Check List
- Risk Assessment