Method Statement
For
Installation of Uninterruptible Power Supply

00.0.2023	**00**					
DATE		**PREPARED BY:** QAQC DEPARTMENT	**PREPARED BY:** HSE RISK ASSESSMENT	**CHECKED BY:** ENGG. & CONST DEPARTMENT	**REVIEWED BY:** PROJECT MANAGER	**APPROVED BY:** PROJECT DIRECTORATE

Table of Contents

1. Purpose

The purpose of this Method Statement is to describe the details used and controls to be carried out for the installation of an Uninterruptible Power Supply to ensure that it complies with Project requirements, specifications (Section XXXX), and standards.

2. Scope of Work

This Method Statement applies to all installations of Uninterruptible Power Supply at Project electrical works.

Manpower and equipment shall be organized to meet the schedule as per the approved construction program.

3. Definition

3.1. Abbreviation

UPS	- Uninterruptible Power Supply
QAQC	- Quality Assurance Quality Control
MS	- Method Statement
MEP	- Mechanical, Electrical, Plumbing
RFIA	- Request for Inspection & Approval
MIR	- Materials Inspection Request
ITP	- Inspection and Test Plan
TBT	- Tool Box Talk

3.2. “Approved” or “Approval”

“Approved” or “Approvals” means approved in writing by the applicable Engineers' Assistant acting within the scope of their delegate authority.

3.3. “Shop Drawings”

“Shop Drawings” means drawings produced where the contract designs drawings require expression in a more basic form to facilitate construction.

3.4. "Final Inspection"

"Final Inspection" means the inspection of the records of works at completion or completion of pre-determined elements to ensure that all previous inspections and tests have been satisfactorily carried out and properly recorded.

3.5. "Materials"

"Materials" means all items covering the materials or equipment delivered to the site that must be incorporated into the project.

3.6. "Method Statements"

"Method Statements" means a technical document to be read in conjunction with the drawings, specifications, standards, codes of practice, technical datasheets, schedules, work instructions, and any other technical document related to a particular work.

4. Reference Documents – Specifications, Drawings. Etc.

- Project Quality Plan
- Project General Specifications,
- Approved Project Electrical Drawings
- Approved Method Statements
- Installation of Electrical Cables
- Approved Material Submittal
- Manufacturer's Recommendations / Installation Instructions

5. Tools and Equipment

5.1. Equipment / Instrument

- Insulation Resistance Tester - 1000V DC
- Multimeter Tester

5.2. Tools

- Electrician Hand Tool
- Crimping Tools.
- Drilling & Grinding Machines
- Spanners
- Half Round files
- Screw Drivers
- Open and Box Wrench
- Pliers

- Crowbar & Hammer

6. Manpower

6.1. Staff:

- Construction Manager
- Site Engineer
- Supervisor
- QC Engineer / Inspector
- Quantity Surveyor
- Safety Officer

6.2. Labor

- Foreman
- Trade workers
- Helpers / Labours
- Drivers

7. Responsible Personnel on the Site

- The Project Manager shall be responsible for the overall construction activities.
- The Construction Manager, Site Engineers, Supervisors, and Foremen shall implement this Method Statement.
- The Material controller shall be responsible for receiving materials on-site warehouse.
- The site Engineer / Supervisor shall check the materials as per the manufacturer's recommendation before installation and shall be responsible for the installation as per approved shop drawings.
- Safety Officer shall ensure that appropriate/necessary measures are in place at the work location to avoid any unexpected events.
- QAQC Inspector shall be responsible for carrying out inspections for the materials delivered on-site. He shall document such inspections.
- QAQC Engineer / Inspector shall monitor the installation activities progressively and shall record all deviations from the specification in a form of snags or further non-conformance notifications.

8. Material Inspection / Storage

- Unload the UPS in the designated unloading area. Use a forklift or crane to unload UPS.

- Proper care must be observed during offloading to prevent unnecessary damage to UPS.
- Ensure that UPS is stored in a dry and clean area.
- Before acceptance, an inspection regarding the physical condition of the UPS shall be conducted to ensure that the components are following the Approved material submittal.
- Ensure that the UPS is properly protected.
- Submit Material Inspection Requests to the consultant for their inspection and approval.

9. Construction Sequence and Methodology

9.1. Preparation before Installation

- Ensure that Drawings for Installation are approved & coordinated with other services.
- The material to be used must be inspected and approved.
- Ensure that the material is free from damage before shifting to the areas of work. Any discrepancies, damages, etc. shall be notified and reported for further action.
- Before starting the work, check that proper access is to execute the works in a suitable condition and free from obstruction.
- Ensure that all safety precautions are in place.

9.2. Installation Procedure

- UPS systems are to be installed as per the approved drawings, as per the new approved single-line diagram for UPS attached in the material submittal.
- The installation will begin by placing the UPS units in the pre-determined location. The input and output cables for each UPS will be connected.
- Battery installation will be done by placing the battery cabinet in the pre-determined location and arranging the batteries on the cabinet such that 40 batteries will fit and are accessible for maintenance.
- A Battery disconnection panel will also be installed near the battery racks in an accessible location as per the approved drawings.
- The battery set will be connected in series using flexible double insulation single core cables (provided along with UPS).
- The anode and cathode of the battery set will be connected to the Battery disconnection panel. The battery disconnection panel will be connected to the UPS. Also, a control cable will be laid from the UPS to the Battery disconnection panel.
- All battery cabling will be done in dedicated cable trays installed on uni-strut channel supports as shown in the approved drawings.
- Ensure before termination of any cables that they are tested for Insulation Resistance.

- The UPS will be installed as per the manufacturer's recommendations. (Please refer to the attached user manual).

10. Inspection and Testing

- After completion of the work, the Site Engineers who perform an activity are required to raise an RFIA with complete information regarding the scope of the inspection, including the Test Report & necessary drawings highlighted to show the scope of the inspection. He shall systematically check and inspect their work. The inspection shall be performed according to a typical checklist and approved Inspection and Test Plans (ITP).
- After Site Engineer's completed their inspection, RFIA with a duly filled Inspection Check List shall be submitted to QAQC Department who after internal inspection shall process the documents to have the completed work inspected by Supervision Consultant for their approval.
- After satisfactory inspection by Supervision Consultant, completed work shall be subject to testing and commissioning.
- Testing and commissioning of the UPS shall be done as per manufacturer requirements. A testing report is to be submitted to the consultant for Inspection.
- The UPS will be tested at normal ambient conditions of the rooms where it will be installed; where it is supposed to be air-cooled, the UPS can operate at an ambient temperature of 0˚ ÷ 45˚C (32˚ ÷ 104˚F) and maximum relative humidity (95%).

Note:

- RFIA must be processed and submitted to Supervision Consultant 24 hours before the actual inspection and/or witnesses.
- The preparatory meeting shall be carried out with the execution team as per the method statement, material submittal & shop drawings before the start of work on-site (by QA. QC Personal).

11. Health, Safety, and Environment

The safety of all personnel and equipment is the highest priority of ETA-Debbas JV during the execution of the Works.

11.1. Personnel Protective Equipment

- Safety Helmet
- Safety Goggles (during drilling and use of grinders)
- Face shield (during grinding)
- Safety Footwear (steel toes)

- Safety Gloves (for material handling)
- Coverall (as protective clothing)
- Full Body Harness
- Respiratory Mask (if require)

11.2. Tool Box Talk (TBT)

- Safety Tool Box Talk shall be given by the site supervisor every week and/or as deemed necessary.
- Safety tool Box Talk shall brief the task/subject and shall be given in languages understandable by the multinational workforce.
- Safety Tool Box Talk attendance shall be recorded on a sheet and signed by attendees

11.3. Housekeeping

- Housekeeping shall be maintained by all personnel working at the site. Housekeeping for fabrication and installation shall be as per the project safety plan and GENINT-Safety Manual.

11.4. Signage

- All necessary safety warnings and caution signs shall be displayed at work locations.

12. QC Approval and Other Documentary Requirements (Attachment)

- Material Technical Submittal Approval
- Shop Drawing Approval
- Material Inspection Report (MIR) approval
- Installation Request for Inspection & Approval (RFIA)

13. Attachments

13.1 Risk Assessment

13.2 Inspection and Test Plan

13.3 Installation - Checklist