PROJECT DETAILS

METHOD STATEMENT FOR

Installation of MDB, SMDB, DB, MCC

REVISION RECORD

This cover page is a record of all revisions of the document identified above by number and title. All previous cover pages are hereby superseded and are to be destroyed.

Rev. No.	Date	By	Chkd.	Approvals	Description and Page Numbers of Revisions

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1.0PURPOSE

The purpose of generating this method statement is to define the procedure step by step to implement the correct practices for Installation of MDB, SMDB, DB, MCC & CB through the guidelines contained herein so as to ensure that the job execution complies with specification and serves the intended function to satisfactory level where applicable in the project building.

2.0 SCOPE

This method statement covers all processes related to Installation of MDB, SMDB, DB, MCC & CB as the following:

2.1 Installation of MDB, SMDB, DB, MCC & CB.

This procedure is to be read in conjunction with the relevant ITP, outlining the responsibility and the quality verification to be performed by various parties.

3.0REFERENCE

- Approved Shop drawings for power distribution and load schedule.
- Specifications :
- ISO 9001:2008.
- Project Quality Plan
- Project HSE plan
- Manfacturer's Data sheets.
- Manufacturer's recommendations.
- Regulation of the local Electrical Authority
- Requirements of Civil Defense Department

4.0 DEFINITIONS:

PQP	: Project Quality Plan
PSP	: Project Safety Plan
QCP	: Quality Control Procedure
HSE	: Health, Safety and Environment
MS	: Method Statement
ITP	: Inspection Test Plan
QA/QC	: Quality Assurance / Quality Control Engineer.
SK	: Store Keeper.
WIR	: Inspection and Test Request

MIR	: Material Verification Record.
MDB	: Main Distribution Board
SMDB	: Sub Main Distribution Board
DB	: Distribution Board.
MCC	: Motor Control Center
CB	: Capacitor Bank – Power factor corrector-.

5.0 RESPONSIBILITIES:

Responsibilities for ensuring that the steps in this procedure shall be carried out are specified at relevant steps in the procedure:

- Project Manager
- Construction manager
- QA/QC Engineer
- Site Engineer
- HSE officer
- SK

5.1 Project Manager

- Project Manager is the overall responsible for the project in terms of work execution, safety, planning & quality. The Project Manager will maintain the planning progress and coordination of works with the main contractor.
- The work progress shall be carried out as per planned program and all the equipment's required to execute the works shall be available and in good condition as per project planned.
- Specific attention is paid to all safety measures and quality control in coordination with Safety Engineer and QA/QC Engineer and in line with PSP and PQP.

5.2 Construction Manager

- Construction Manager is responsible to supervise and control the work on site.
- Coordinating with QA/QC Engineer and site Team and foremen for all activities on site.
- Control and sign all WIR's before issuing to Consultant approval.

5.3 Site Engineer

- The method of statement to the system shall be implemented according to the Consultant project specifications and approved shop drawings.
- Provision of all necessary information and distribution of responsibilities to his Construction team.
- The work progress shall be monitored in accordance with the planned work program and he will provide reports to his superiors.
- The constant coordination with the Safety Engineer to ensure that the works are carried out in safe working atmosphere.
- The constant coordination with the QA/QC Engineer for any works to be carried out and initiate for the Inspection for the finished works.

- He will ensure the implementation of any request that might be raised by the Consultant.
- Efficient daily progress shall be obtained for all the equipment and manpower.
- He will engage in the work and check the same against the daily report received from the Foremen.
- The passage of all the revised information to the Foremen and ensure that it's being carried out properly.

5.4 QA/QC Engineer (MEP):

- The monitoring of executions of works at site and should be as per the approved shop drawings and project specifications.
- Ensure WIRs and MIRs are being raised for activities in timely manner and inspected by the Consultant.
- Check and insure that all activities / work done / completed prior to offer for consultant inspection.
- He will follow and carried out all the relevant tests as per project specifications.
- Obtain the required clearance prior to Consultant's inspections.
- Should acquire any necessary civil works clearances and coordination.
- Coordinate with site construction team.
- One who will assist the Consultant Engineer / Inspector during inspection.

5.5 Site Foreman

- The carrying-out of work and the proper distribution of all the available resources in coordination with the Site Engineer on a daily basis.
- Daily reports of the works are achieved and coordinated for the future planning with the Site Engineer.
- Incorporate all the QA/QC and Safety requirements as requested by the concerned Engineer.
- Meeting with any type of unforeseen incident or requirement and reporting the same to the Site Engineer immediately.

5.6 Safety Officer

- The implementation of all safety measures in accordance with the HSE plan and that the whole work force is aware of its proper implementation.
- The implementation of safety measures is adequate to maintain a safe working environment on the work activity.
- Inspection of all the site activities and training personnel in accident prevention and its proper reporting to the Construction Manager and the Project Manager.
- The site is maintained in a clean and tidy manner.
- Ensure only trained persons shall operate the power tools.
- Ensure all concerned personals shall use PPE and all other items as required.
- Ensure adequate lighting is provided in the working area at night time.
- Ensure high risk elevated areas are provided are barricade, tape, safety nets and provided with ladders.
- Ensure service area/inspection area openings are provided with barricade, tape, and safety nets.
- Ensure safe access to site work at all times.

5.7 Store Keeper (SK)

- Responsible for overall Store operations in making sure to store the material delivery to the site and keep it in suitable area that will keep the material in safe from rusty and damage.
- One who will acknowledge the receiving of materials at site in coordination with QA/QC and concerned Engineer.

6.0 EQUIPMENTS

- MDB's, SMDB's, FDB's, MCC's & CB's shall be in line with approved material submittal and as per approved shop drawing.
- Forklift.
- Portable Hand Tools.
- Portable Drilling Machine.
- Grinding Machine.
- Insulation Testing Equipment.
- Digital Multi-meter.
- Measuring Tape.
- Ladder/ Scaffolding.
- Safety requirements tools such as safety shoes, safety helmet, safety glasses, fluorescent vest, and safety gloves to ensure maximum ability of safe work and dust mask when require.

7.0 PROCEDURE

7.1 Safety

- Ensure only trained/ Authorised & licensed persons only shall operate the power tools.
- Ensure that Temporary live cable management plan shall develop and implemented.
- Necessary PPE to be worn while working in energized to be worn while working in energized circuits.
- Ensure adequate lighting is provided in the working area at night time and if inside the building area to be well illuminated.
- Safe lifting and shifting of LV switch gear panels and its related hazards and risks shall be identifying.
- Ensure service area/work area openings are provided with barricade, tape, safety nets and warning signage to be provided (Danger: Low Voltage).
- Ensure LOTO procedure to be followed and implement comprehensive logout & tag out during execution of work.
- Emergency response plan & procedure shall be developed and established as per the site condition during the execution of activity.
- Ensure that training cards issues as to identify the power tools operatives.
- Ensure that not to shift any material or tools required, through pedestrian access by hand. Mechanical aids shall be used.
- PTW to be applied and obtained to start work on the required area.
- Calibrated Instruments only to be used.

7.2 Work Sequence And Methodology

- Check all material delivered to site is inspected properly by QA/QC Engineer and check if it is stored

properly as per manufacturer's recommendations.

- MIR shall be raised for the inspection of materials received at site by Sub-contractor QA/QC Engineer to the Consultant Engineer.
- Strict supervision and guidance of the concerned Supervisors / Foremen / Engineers.
- Work shall be carried out by the site staff under
- The Sub-contractor QA/QC Engineer shall check all the installations as per the Installation Check list.
- WIR shall be prepared by Sub-contractor QA/QC Engineer and will be submitted to Consultant for their inspection and approval.
- Sub-contractor QA/QC Engineer shall coordinate with other contractors and arrange inspection for installation to the Consultant Engineer.
- MEP QA/QC Engineer is responsible for all installation activities for getting the work inspected and approved by Consultant Engineer.

7.3 Handling and Storage

On receipt of MDB's, SMDB's, FDB's, MCC's, CB's and accessories at site, necessary precautions shall be taken for unloading, shifting and storage, as follows:

- Material shall be stored in a covered / dry space at all the time.
- All materials received at site shall be inspected and ensured that the materials are as per approved material submittal.
- Any discrepancies, damage etc., found will be notified and reported for further action.
- Site Engineer has to ensure that all panel boards used at site are of free from any damage or deformity of any kind. Any minor damages observed shall be repaired suitably and in case if the repairs could not be done properly, the panel boards are to be sent to assembler for rectification, after all formalities carried on.

7.4 General Installation Procedure

- Ensure that the work area is ready and safe to start the installation of Ensure that the work area is ready and safe to start the installation of MDB's, SMDB's, FDB's, MCC's, CB's and accessories.
- Ensure the installation of MDB's, SMDB's, FDB's, MCC's, CB's &accessories. Carried out in accordance with manufacturer's installation recommendations, requirement of applicable standards and in accordance with recognized industrial practices and specified in project specification to ensure that installation complies with requirements.

- Prior to start the installation, refer to the approved shop drawings related to the area of installation and ensure that required materials are available at site as per approved material submittals.

- Ensure the materials are stored properly and there is no mark of damage or deformity of any kind before issuing the material from site store. All materials and accessories should also be free of dust, scale, or oil.

- Ensure that the issued materials are of approved specifications / submittals and as per the requirement of the area shop drawings. (I.e. Make Size, Model / Type etc.).

7.5 Installation Procedure for MCC, CB & MDB

- Installation works shall be carried out only with respect to approved shop drawings of latest revision.

- All components of MCC, CB &MDB such as relays, fuses. CT's, meters etc. shall be verified against the approved material submittal.

- Ensure the floor surface is ready with base frames grouted to install the switch gear.

- Minimum clearance of 800 mm shall be maintained at rear side of the panel so that easy access for termination of cables and other maintenance works can be carried out.

- Panel boards shall be installed serially and with Level Verticality in accordance with the Manufacturer's recommendations, approved site layout and as per site requirement.

- Check cabinet interconnections, bus bar connections, control wire connections between the cubicles after proper alignment of the sections cubical as per manufacturer's drawing and approved shop drawing.

- All knockouts made on the panel covers shall be filed and provided with grommets to avoid sharp edges and unused knockouts shall be covered.

- The connection of bus bar trunking with all panel boards shall be done rigidly with proper supports.

- Cables bending radius should be less than the 8 times of the cable diameter in line with the Manufacturer's recommendation.

- Cable pulling, termination & crimping shall be done as per cables method statement.

- Termination of cables shall be done using approved material submittal for cable glands and lugs. Glanding and connections should be done only by competent technicians / electricians under supervision of electrical site Engineer.

- All panel boards and switch gears shall be provided with proper earthing connections as per approved

shop drawings.

- Manufacturer recommendations are to be followed for all relay, timer and other breaker current settings, as per the total connected loads and the discrimination study of the system.
- Identification labels of approved type shall be fixed on all panel boards.
- Co-ordinate with the Main Contractor and ensure provision of chequer plates on the open trenches inside the LV Room and Electrical rooms.
- Ensure that all cable entries and other openings of Electrical / LV Room, Wall / Floor are carried out with proper approved sealant.
- The manufacturer's representative to verify the site installations and provide acceptance of same prior to Energisation of Panel boards after obtaining clearance from Site Engineer.
- Raise (WIR) for installation of Panel Boards along with glanding and termination to Consultant.

7.6 INSTALLATION PROCEDURE FOR SMDB &FDB

- Manufacturer's representative to verify the site installations and provide acceptance of same prior to Energisation of Panel boards after obtaining clearance from Site Engineer.
- Installation works shall be carried out only in accordance to approved shop drawings of latest revision.
- Ensure all civil and finishing works are completed and area is released for the area of installation and cleared by civil section to proceed on with Distribution Board installations. Also, ensure that the work area is clean and safe to undertake activities.
- Ensure the floor/ wall surface is ready to install the Distribution Boards.
- Clearances are to be maintained between the SMDB's and FDB's, as specified in the approved shop drawings.
- Height of the Distribution Boards shall be maintained as per approved shop drawings so that easy access for termination of cables and other maintenance works can be carried out.
- Connection of cable trays / Cable trunking with all Distribution Boards shall be done rigidly with proper supports.
- All knockouts made on the panel covers shall be filed and provided with grommets to avoid sharp edges and unused knockouts shall be covered. All cable entries shall be closed and sealed in a proper way.
- Termination of cables shall be done using approved cable glands and lugs glanding and connections should be done by only competent technicians electricians as per the approved shop drawing.
- SMDB's and FDB's shall be provided with proper earthing connections as per approved shop

drawings.
- Doors of SMDB's and FDB's are to be earthed with flexible connection.
- Identification labels of approved type shall be fixed on SMDB's and FDB's.
- Raise (WIR) for installation of SMDB's and FDB's along with glanding and termination to Consultant.

8.0 ATTACHMENTS

8.1. Inspection and Testing Plan

8.2. Check Listfor Installation of FDB

8.3 Check List for Installation of SMDB

8.4 Check Listfor Installation of MDB

8.5 Check List for Installation of MCC & CB

8.6 Risk Assessment

8.7 Attachments