

Request for Proposal

(123/27) Hiring of Consultant Regarding Supervision of Procurement &
Installation of APMS on High AT&C Loss Feeders against MEPCO Tender
No. 01//ICB
(Consultancy Services)

National

Single Stage-Two Envelope



September 14, 2026

*Multan Electric Power Company (MEPCO) (Multan Electric Power Company (MEPCO)), Assistant Manager
Procurement
MEPCO Complex, Wapda Colony, Khanewal Road, Multan City, Multan (District), Multan Division (Division), Punjab
(Province).
Phone: +92-319-975-7793, Email: amproc&dist@mepco.com.pk*

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PROCUREMENT NOTICE

PROCUREMENT OF CONSULTANCY SERVICES

1. The **Multan Electric Power Company (MEPCO) (Multan Electric Power Company (MEPCO))** has reserved Funds for the procurement planned for FY **2026-27**. The **Multan Electric Power Company (MEPCO) (Multan Electric Power Company (MEPCO))** intends to apply part of the proceeds of this Fund to cover eligible payments under the contract for the consultancy services of “**(123/27) Hiring of Consultant Regarding Supervision of Procurement & Installation of APMS on High AT&C Loss Feeders against MEPCO Tender No. 01//ICB**” with the reference of “**P119041**”
2. The **Multan Electric Power Company (MEPCO) (Multan Electric Power Company (MEPCO))** invites RFP through **EPADS v2.0** from eligible Bidders registered on **EPADS v2.0** for provision of Consultancy Services.
3. **Single Stage-Two Envelope** Procedure of Principal Method of Procurement (i.e. Open Competitive Bidding) will be used by adopting **Quality and Cost Based Selection (QCBS)** Technique for the subject procurement, in line with the Public Procurement Rules, 2004 and any Regulations, and Instructions issued by the Authority (from time to time).
4. All proposals must be accompanied by a Bid Security described in Bid Security Section in Bidding Document in the form of or Bid Securing Declaration on the prescribed format described.
5. E-Bidding documents, containing detailed terms & conditions, specifications and requirements etc. are available on **e-Pak Acquisition and Disposal System (EPADS)** at **<https://epads.gov.pk/opportunities/federal/procurements/119041>**.
6. The RFP, prepared in accordance with the instructions in the e-Bidding documents, must be submitted through **EPADS v2.0** on or before **Thursday, October 1, 2026 11:00 AM**. Proposals will be opened on the same day at **Thursday, October 1, 2026 11:30 AM**. Manual submission of RFPs shall not be entertained. Those consultants/Firm who have not yet registered on the

new version of **EPADS v2.0**, may register themselves on <https://vendors.epads.gov.pk/>. A tutorial to explain the registration process is available at <https://www.youtube.com/watch?v=MNW6T38v7tc>

In terms of Rules 48 of Public Procurement Rules, 2004 Grievance Redressal Committee (GRC) is notified for the subject procurement and notification copy is available on the procuring agency's website and also available on **EPADS v2.0** as well as Authority's website at (www.ppra.org.pk).

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+92-319-975-7793

amproc&dist@mepco.com.pk





Instructions to Bidders

A. General Provisions

1. Introduction

1.1. The Procuring Agency named in the Data Sheet intends to select a consultant, in accordance with the method of selection specified in the Data Sheet. The eligible Consultants are invited to submit a proposal, as specified in the Data Sheet, for consulting services required for the assignment named in the Data Sheet.

1.2. The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the Data Sheet. Attending any such pre-proposal conference is optional and is at the Consultants' expense.

1.3. The Procuring Agency will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the Data Sheet.

2. Corrupt and Fraudulent Practices

2.1. The procuring agencies and the consultant are required to compliance Procurement Regulatory Framework in regard to corrupt and fraudulent practices as defined under Rule 2(1)(f) of the Public Procurement Rules.

B. Preparation of Proposals

3. General Considerations

3.1. In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.

4. Language

5. The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Procuring Agency, shall

be written in the language(s) specified in the Data Sheet.

Documents Comprising the Proposal

5.1. The Proposal shall comprise the documents and forms listed in the Data Sheet.

6. Only One Proposal

6.1. The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet** and subject to regulatory instructions, if any.

7. Proposal Validity

7.1. Proposals shall remain valid for the period specified in the Data Sheet after the Proposal submission deadline prescribed by the Procuring Agency (PA). To ensure the validity of proposal, it shall contain bid security or bid Securing declaration as a complementary bid securing instrument having the validity twenty-eight days more than the bid validity period.

7.2. During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price.

7.3. If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to blacklisting and debarment in accordance with Clause 5 of this ITC.

7.4. Extension of Validity Period

7.4.1. If considered necessary, an extension in the bid validity can be made in accordance with the provision of public procurement rules, 2004 or any instructions issued in this regard.

8. Bid security/Bid Securing Declaration

8.1. The consultant shall submit bid security in the form and amount specified by the procuring agency before the submission deadline. Provided that in case where the procuring agency does not require the bid security, the bidder shall submit bid securing declaration on the format prescribed by the Authority in Standard Procurement Documents.

8.2. Any Proposal not accompanied by a Bid Security or Bid Securing Declaration shall be rejected by the Procuring Agency as non-responsive.

8.3. The Bid Securing Declaration of a joint venture must be in the name of the joint venture submitting the Proposal indicating all the members are jointly and severally responsible.

8.4. The successful Consultant's Bid Securing Declaration will be discharged upon the signing the contract with the Successful Consultant, and furnishing the performance security

9. Clarification and Amendment of RFP

9.1. The Consultant may request a clarification of any part of the RFP during the period indicated in the Data Sheet before three days prior to the Proposals' submission deadline through **EPADS v2.0** only. The Procuring Agency will respond to the same through **EPADS v2.0**. Should the Procuring Agency deem it necessary to amend the RFP as a result of a clarification or at its own initiative, it shall do so following the procedure described below:

9.1.1. At any time before the proposal submission deadline, the Procuring Agency may amend the RFP by issuing an amendment through **EPADS v2.0**.

9.1.2. If the amendment is substantial, the Procuring Agency may extend the proposal submission deadline to give the Consultants reasonable time to take an amendment into account in their Proposals.

9.2. The Consultant who has already submitted the proposal prior to any amendments in the RFP, may submit a modified Proposal based on the respective amendment in the RFP at any time prior to the proposal submission deadline. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.

10. Preparation of Proposals - Specific Considerations

10.1. While preparing the Proposal, the Consultant must give particular attention to the following:

10.1.1. The Procuring Agency may indicate in the Data Sheet the estimated Key Experts' time input (expressed in person-month) or the Procuring Agency's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same.

10.1.2. If stated in the Data Sheet, the Consultant shall include in its Proposal at least the same time input (in the same unit as indicated in the Data Sheet) of Key Experts, failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the Data Sheet.

10.1.3. For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the Data Sheet, and the Financial Proposal shall not exceed this budget.

10.1.4. The proposal may be subject to price adjustment in accordance with Data sheet and formula specified.

11. Financial Proposal

11.1. The Financial Proposal shall be prepared using the Standard Forms provided in the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the Data Sheet.

12. Taxes

12.1. The proposal submitted shall be inclusive of all the taxes unless otherwise stated in the Data Sheet. The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the Data Sheet. Information on taxes in the Procuring Agency's country is provided in the Data Sheet.

13. Currency of Proposal

13.1. The Consultant may express the price for its Services in the currency or currencies as stated in the Data Sheet. If indicated in the Data Sheet, the portion of the price representing local cost shall be stated in the national currency. Payment shall also be made in the currency specified in the data sheet or condition of the contract.

C. Submission, Opening and Evaluation

14. Submission/withdrawal of Proposals

14.1. The Consultant shall submit proposal through **EPADS v2.0** before the submission deadline.

14.2. A Proposal submitted by a Joint Venture shall be submitted through **EPADS v2.0** from the account of Lead Member. Reference to the EPADS account of all the JV Member shall be provided along with the proposal. Incase any of Member is not registered on the **EPADS v2.0**, may be registered on the **EPADS v2.0** or all his credential shall be provided along with the proposal for the evaluation of the procuring agency. JV agreement signed by all the members shall also be provided along with the proposal.

14.3. A Consultant may withdraw its Proposal after it has been submitted before the submission deadline.

15. Opening of Proposal

15.1. The Procuring Agency will open all Proposal through **EPADS v2.0**.

15.2. Financial Proposal, will remain unopened till the prescribed financial Proposal opening date.

16. Evaluation of Technical Proposals

16.1. The Procuring Agency's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the Data Sheet. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the Data Sheet.

17. Opening of Financial Proposals

17.1. After the technical evaluation is completed, the Procuring Agency shall issue the Technical Evaluation Report containing all the information regarding responsiveness or non-responsiveness of the consultant along with the technical scores (if any). The Procuring shall notify those Consultants that have achieved the minimum overall technical score and inform them of the date and time for the opening of the Financial Proposals.

17.2. The Financial Proposals shall be opened and evaluated through **EPADS v2.0**.

18. Correction of Errors

18.1. Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.

18.2. The Procuring Agency's evaluation committee will

(a) correct any computational or arithmetical errors, and

(b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Procuring Agency's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.

19. Conversion to Single Currency

19.1. For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the Data Sheet.

20. Selection Technique

20.1. Quality and Cost Based Selection

In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the Data Sheet. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.

20.2. Fixed-Budget Selection (FBS)

20.2.1. In the case of FBS, those Proposals that exceed the budget indicated in the Data Sheet shall be rejected.

20.2.2. The Procuring Agency will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

20.3. Least-Cost Selection.

In the case of Least-Cost Selection (LCS), the Procuring Agency will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant for discussion on technical issues, without changing the cost and scope of services.

D. Negotiations and Award

21. Negotiations

21.1. The negotiations will be held at the date and address indicated in the Data Sheet with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant.

21.2. The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Procuring Agency's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not alter the original scope of services under the TORs or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.

22. Availability of Key Experts

22.1. The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clauses of ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Procuring Agency proceeding to negotiate the Contract with the next-ranked Consultant.

22.2. Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter

of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.

23. Award of Contract

23.1. The Procuring Agency will award the Contract to the Consultant whose Proposal has been determined to be substantially responsive to the RFP Documents and who has been declared as Successful Consultant, provided that the same is not in conflict with any other law or policy of the Federal Government

24. Grievance Redressal Mechanism

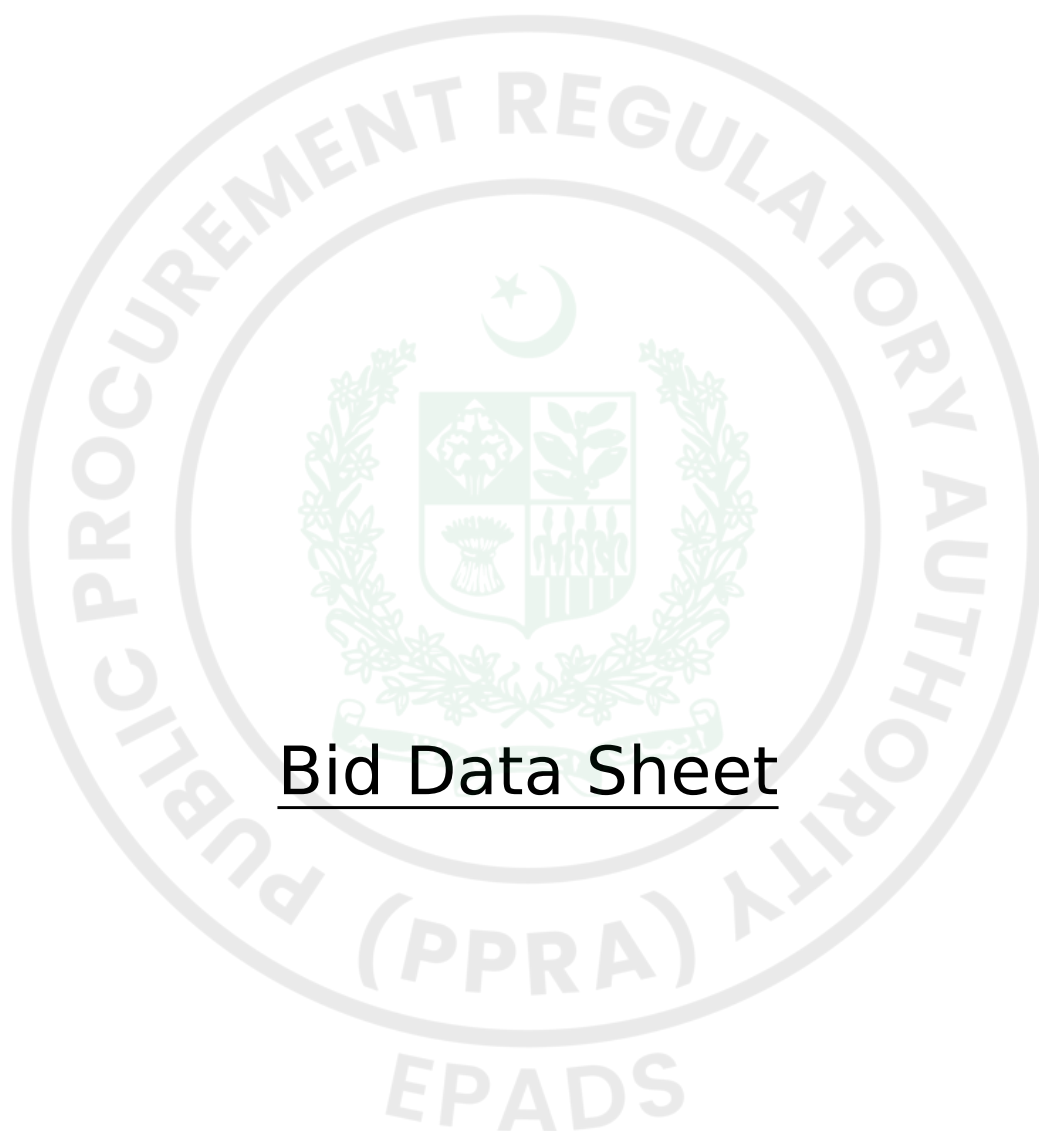
24.1. Grievance shall be redressed in accordance with procedure and mechanism defined under Rule 48 of the Public Procurement Rules, 2004 and Redressal of Grievance regulations.

25. Mechanism of Blacklisting

25.1. The Blacklisting shall be carried out in accordance with provision of Rule 19 of the Public Procurement Rules, 2004 and for Procedure of Filing and Disposal of Review Petition under Rule 19 (3), 2021, to be read with the Regulations on "Mechanism for Blacklisting and Debarment of Bidders or Contractors Regulations, 2024".

26. Environmental objectives

26.1. As per Rule 4 of Public Procurement Rules, 2004, The procuring agency may seek to procure services with a reduced environmental impact throughout their life cycle when compared to services with the same primary function that may otherwise be procured



Bid Data Sheet

Proposal Data Sheet (BDS)

The following specific data for the procurement of Consultancy Services to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

BDS Clause Number

ITB Number

Amendments of, and Supplements to, Clauses in the Instruction to Bidders

A. General

1

1.1

Name of Procuring Agency: **Multan Electric Power Company (MEPCO) (Multan Electric Power Company (MEPCO))**

The subject of procurement is: **(123/27) Hiring of Consultant Regarding Supervision of Procurement & Installation of APMS on High AT&C Loss Feeders against MEPCO Tender No. 01//ICB**

Financial year for the operations of the Procuring Agency: **2026-27**

Name and identification number of the Contract: **P119041**

BDS Clause Number 2

ITB Number 1.2 & 9.1

The Bidders may seek clarifications through **EPADS v2.0**: Clarification Date: Thursday, September 24, 2026

Pre-Bid Meeting: Tuesday, September 22, 2026 11:30 AM

Venue: MEPCO COMMITTEE ROOM

B. Preparation of Proposals

BDS Clause Number 3

ITB Number 4.1

The language of the proposals is: **English**

BDS Clause Number 4

ITB Number 6.1

Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible? **No**

BDS Clause Number 6

ITB Number 7.1

Proposals shall be valid until **75 Days**

BDS Clause Number 7

ITB Number 9.1

List of documents required along with the bid: **No**

BDS Clause Number 8

ITB Number 10.2

The Consultant's Proposal must include the minimum Key Experts' time-input of _____person-months.

For the evaluation and comparison of Proposals only: if a Proposal includes less than the required minimum time-input, the missing time-input (expressed in person-month) is calculated as follows:

The missing time-input is multiplied by the highest remuneration rate for a Key Expert in the Consultant's Proposal and added to the total remuneration amount. Proposals that quoted higher than the required minimum of time-input will not be adjusted.]

BDS Clause Number 9

ITB Number 105

The price shall be **Fixed**.

Price schedule will be provided according to the format defined and acquired. see section price schedule.

BDS Clause Number 10

ITB Number 11.1

The qualification criteria to establish the supply / production capability of the bidder.

see Eligibility Criteria

BDS Clause Number 11

ITB Number 7.6

Services and Their related documents:

See section Required Services and ToR

C. Submission, Opening and Evaluation

BDS Clause Number 12

ITB Number 8.1 & 8.2

The amount of Bid Security shall be as defined in Bid Security Section for items and lots given in **BDS 6**

The Bid Security shall be in the form of:

BDS Clause Number 13

ITB Number 13.1

Currency of the Bids shall be : **PKR**

BDS Clause Number 14

ITB Number 14.1

Proposal shall be submitted online on EPADS v2.0 whereas hard copy of the bid security should be submitted to the following;

MEPCO Complex, Wapda Colony, Khanewal Road, Multan City, Multan (District), Multan Division (Division), Punjab (Province).

Bids that are not submitted on EPADS v2.0 shall be disqualified.

The deadline for Bids submission is: **Thursday, October 1, 2026 11:00 AM**

BDS Clause Number 15

ITB Number 15.1

The Bids opening shall take place on **EPADS v2.0**.

Day : **Thursday**

Date: **Thursday, October 1, 2026**

Time : **11:30 AM**

BDS Clause Number 16

ITB Number 20

Selection technique adopted will be: **Quality and Cost Based Selection (QCBS)**

see Evaluation Criteria

F. Negotiation and Award

BDS Clause Number 18

ITB Number 21.5

The Performance guarantee shall: **5.00%**.

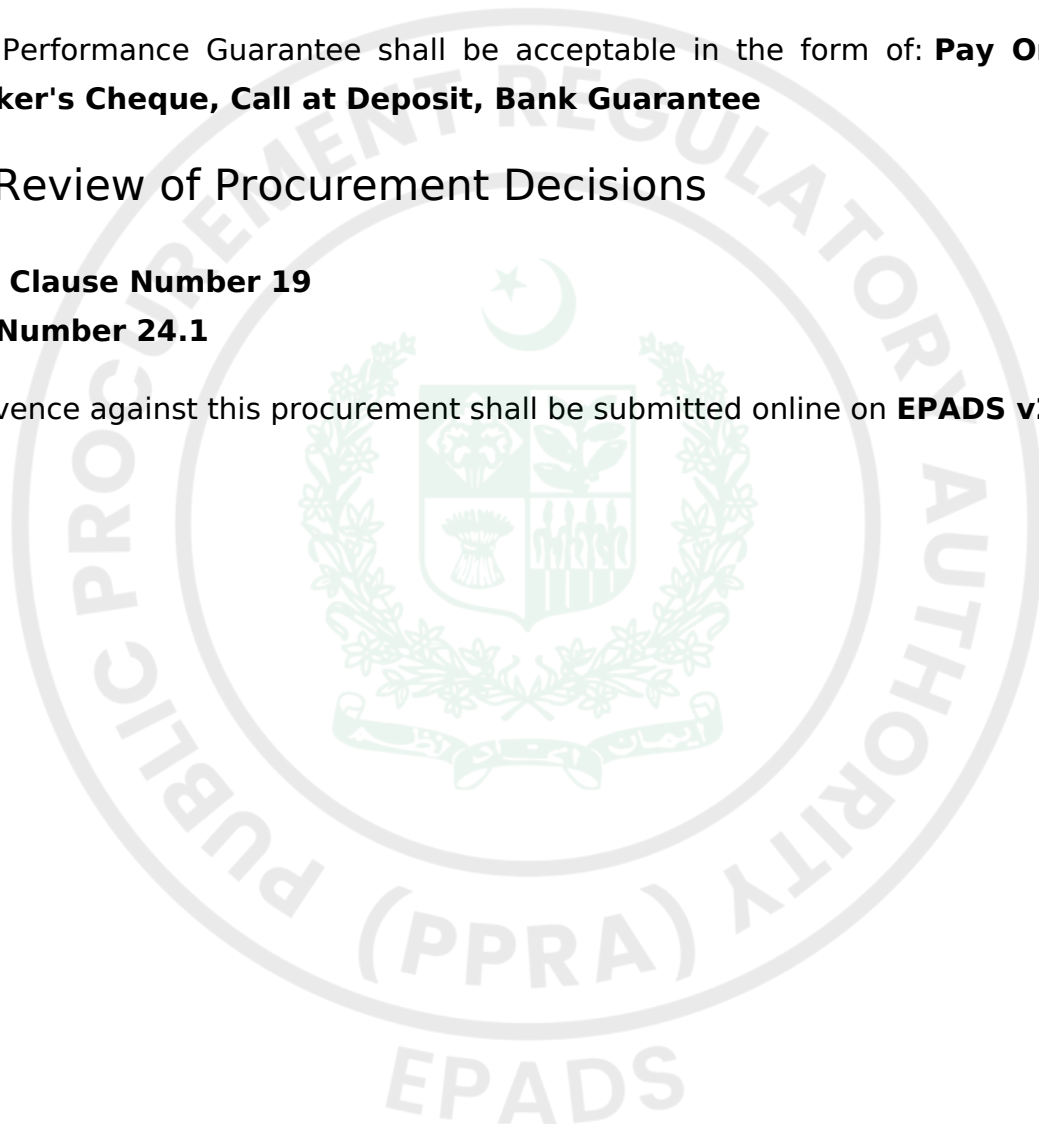
The Performance Guarantee shall be acceptable in the form of: **Pay Order, Banker's Cheque, Call at Deposit, Bank Guarantee**

G. Review of Procurement Decisions

BDS Clause Number 19

ITB Number 24.1

Grievance against this procurement shall be submitted online on **EPADS v2.0**.



Eligibility Criteria

Bidder's Type	Required Registration
Individual / Individual Consultant	None
Sole Proprietorship	
Partnership Firm	
Company (Private Limited)	
Company (Public Limited)	
Company (Holding Company)	
Company (Limited by Guarantee)	
State Owned Enterprise (Private Limited)	
State Owned Enterprise (Public Limited)	

Eligibility Criteria	Document
The Consultant / Firm shall have at least one completed assignment of similar electrical works during the last 5 years	Yes
The Consultant shall propose at least one qualified Electrical Engineer / Team Leader having minimum 03 years of similar experience of MDC / MDM / AMI / APMS	Yes

The Consultant shall submit CV / Resume of Proposed key personnel.	Yes
Note: The Following requirements shall be mandatory.	No



Evaluation Criteria

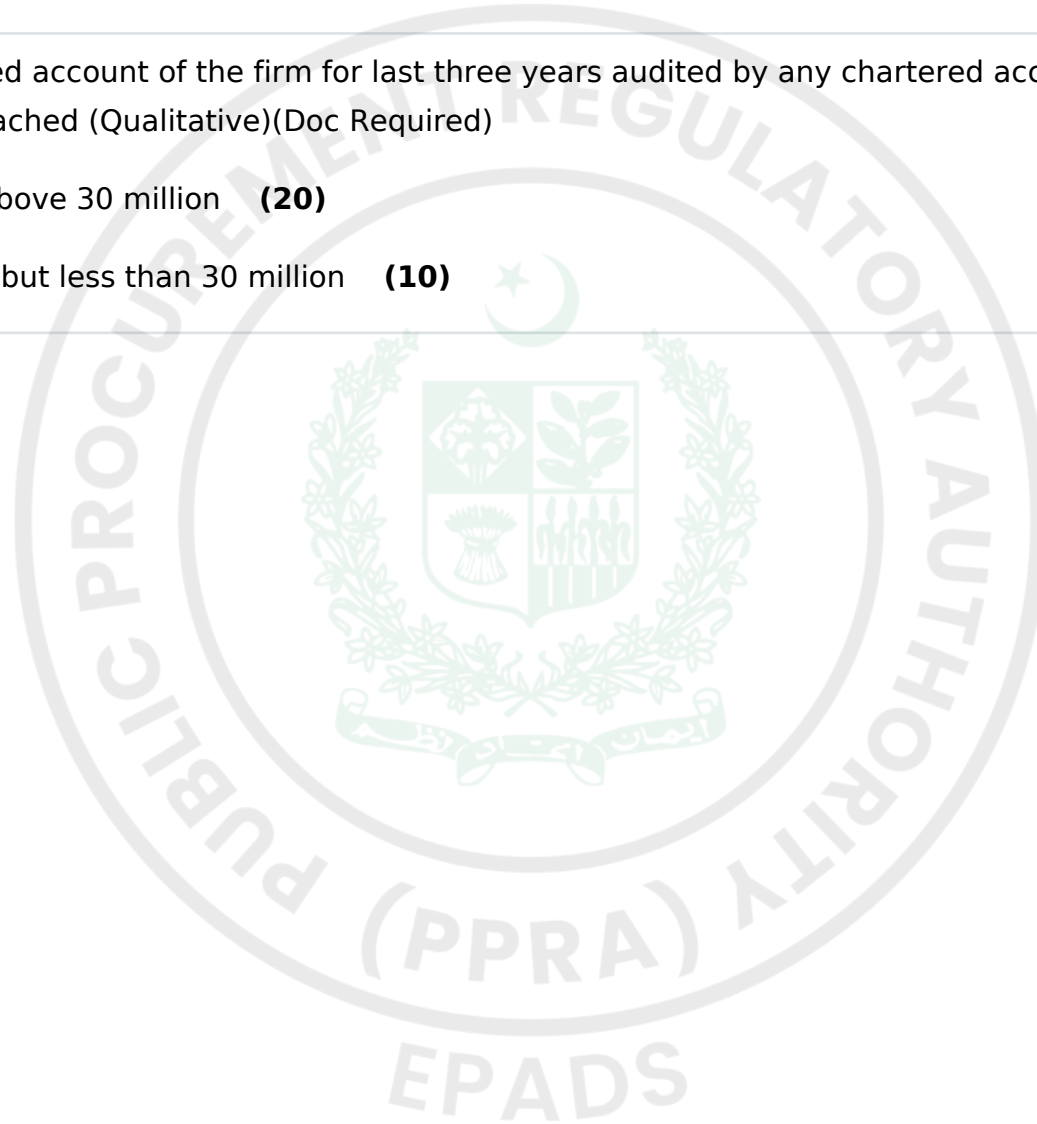
Quality and Cost Based Selection (QCBS)

Weightage

Technical Evaluation %	Financial Evaluation %
70	30

Technical Marks	100
Passing Marks	75
Technical Evaluation Criteria	
Firm experience (Qualitative)(Doc Required)	30
03 number of similar /electrical system project (30)	
02 number of relevant subject (20)	
01 number of relevant subject (15)	
Qualification and experience of key expert/Team leader (Qualitative)(Doc Required)	25
05+ years relevant experience in power system studies (25)	
Number of years of experience less than 5 but greater or equal 03 years (relevant experience) (15)	

Methodology & work plan (Qualitative)(Doc Required)	25
Study methodology, implementation plan, and work plan & deployment schedule (25)	
Financial capabilities (Audited account of the firm for last three years audited by any chartered accounts firm or other authorized agency to be attached (Qualitative)(Doc Required)	20
Annual turnover equal or above 30 million (20)	
Annual turnover 10 million but less than 30 million (10)	



Required Services

Positions Without Lots :

Position	Delivery Schedule	Quantity	Bid Security
Hiring of Consultant Regarding Supervision of Procurement & Installation of APMS on High AT&C Loss Feeders against MEPCO Tender No. 01//ICB (Quoted price inclusive of all Taxes)	Address: MEPCO Complex, Wapda Colony, Khanewal Road, Multan City, Multan (District), Multan Division (Division), Punjab (Province). Schedule: 75 Days Quantity: 1/job Quantity: 1 job	1/job	40000 PKR

Related Services :

No



TORS (Terms of References)

Positions Without Lots :

Position: Hiring of Consultant Regarding Supervision of Procurement & Installation of APMS on High AT&C Loss Feeders against MEPCO Tender No. 01//ICB (Quoted price inclusive of all Taxes)

TORs (Terms of Reference):

1. Supervision of Electrical Works along with its final measurements.
 2. Verification / Supervision of Installation of material alongwith Delivery of material at site.
 3. Verification o& testing of Material & Commissioning of related Works according to the requirement of Client i.e., MEPCO and according to the specifications.
 4. Pre-installation, site survey and validation of distribution network.
 5. Supervision of electrical works and installation.
 6. Verification of function of the APMS features in compliance of standard and specification.
 7. Site Documentation and Photographic Evidence.
 8. progress monitoring and reporting.
 9. Final completion report of whole including reconciliation of material after vetting from field formation.
 10. Training and handover.
-

Price Schedule

For Individual Positions

#	Position Title	Quantity	Unit Price (PKR)	Total Price (PKR)	Delivery Location	Delivery Period / Year	Country of Origin
1							
2							

For Lots

#	Lot Title	Total Lot Price (PKR)	Country of Origin
1	[Lot 1 Title]		





General Conditions of Contract

A. General Provisions

1. Definitions

Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

- 1.1. “**Affiliate(s)**” means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant.
- 1.2. “**Applicable Law**” means the laws and any other instruments having the force of law in Pakistan or as may be specified in the Special Conditions of Contract (SCC), as they may be issued and in force from time to time.
- 1.3. “**Consultant**” means an individual consultant or a consulting firm as the case may be;
- 1.4. “**Contractor’s Personnel**” means personnel whom the Contractor utilizes in the execution of its contract, including the staff, labor and other employees of the Contractor and each subcontractor; and any other personnel assisting the Contractor in the execution of the contract to be supervised by the Consultant (if applicable).
- 1.5. “**Day**” means calendar day unless indicated otherwise.
- 1.6. “**Effective Date**” means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.
- 1.7. “**Experts**” means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.
- 1.8. “**Foreign Currency**” means any currency other than the Pakistani Rupees.
- 1.9. “**GCC**” means these General Conditions of Contract.
- 1.10. “**Government**” means the Government of Pakistan.
- 1.11. “**Joint Venture (JV)**” means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Procuring Agency for the performance of the Contract.
- 1.12. “**Key Expert(s)**” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant’s proposal.
- 1.13. “**Local Currency**” means the currency of Pakistan
- 1.14. “**Non-Key Expert(s)**” means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.
- 1.15. “**Party**” means the Procuring Agency or the Consultant, as the case may be, and “**Parties**” means both of them.

1.16. "Procuring Agency's Personnel" refers to the staff, labor and other employees (if any) of the Procuring Agency engaged in fulfilling the Procuring Agency's obligations under the Contract; and any other personnel identified as Procuring Agency's Personnel, by a notice from the Procuring Agency to the Consultant

1.17. "**Proposal**" means the Technical Proposal and/or the Financial Proposal of the Consultant.

1.18. "**RFP**" means the Request for Proposals to be prepared by the Procuring Agency for the selection of consultants, based on the SRFP.

1.19. "**SCC**" means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

1.20. "**Site**" (if applicable) means the land and other places where Works are to be executed or facilities to be installed, and such other land or places as may be specified in the Contractor's Contract as forming part of the Site.

1.21. "**SRFP**" means the Standard Request for Proposals, which must be used by the Procuring Agency as the basis for the preparation of the RFP.

1.22. "**Sub-consultants**" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

1.23. "**Third Party**" means any person or entity other than the Government, the Procuring Agency, the Consultant or a Sub-consultant.

1.24. "**TORs**" means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Procuring Agency and the Consultant, and expected results and deliverables of the assignment.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Procuring Agency and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract

3.1. The contract shall be governed and interpreted in accordance with the laws of Pakistan, unless otherwise specified in SCC.

4. Language

4.1. The Contract as well as all correspondence and documents relating to the Contract exchanged between the Consultant and the Procuring Agency, shall be written in the English language unless otherwise stated in the SCC. Supporting documents and printed literature that are part of the Contract may be in another language provided these are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Contract, this translation shall govern.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the SCC.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the SCC.

7. Location

7.1. The Services shall be performed at such locations as are specified in Appendix A hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Procuring Agency may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the SCC to act on their behalf in exercising all the Consultant's rights and obligations towards the Procuring Agency under this Contract, including without limitation the receiving of instructions and payments from the Procuring Agency.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Procuring Agency or the Consultant may be taken or executed by the officials specified in the SCC.

10. Fraud and Corruption

10.1. Public Procurement Regulatory Authority requires that Procuring Agencies (including beneficiaries of Government funded projects) as well as Applicants/Bidders/Suppliers/Contractors under Government financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts in accordance with the requirement of Procurement Regulatory Framework

B. Commencement, Completion, Modification and Termination of Contract

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Procuring Agency's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the SCC have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the SCC, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the SCC.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the SCC.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of any modifications or variations, the prior written consent of the Procuring Agency is required.

17. Force Majeure

17.1. Definition

17.1.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.1.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.1.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

17.2. No Breach of Contract

17.2.1. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

17.3. Measures to be Taken

17.3.1. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.3.2. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.3.3. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.3.4. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Procuring Agency, shall either:

17.3.4.1. demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and necessarily incurred, and, if required by the Procuring Agency, in reactivating the Services; or

17.3.4.2. continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.3.5. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 49& 50.

18. Suspension

18.1. The Procuring Agency may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a) By the Procuring Agency

19.1.1. The Procuring Agency may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Procuring Agency shall give at least thirty (30) days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) days' written notice in case of the event referred to in (e); and at least five (5) days' written notice in case of the event referred to in (f):

- (a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;
- (b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;
- (c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 49
- (d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) days;
- (e) If the Procuring Agency, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;
- (f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. if the Consultant, in the judgment of the Procuring Agency has engaged in Fraud and Corruption, in competing for or in executing the Contract, then the Procuring Agency may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

19.2. By the Consultant

The Consultant may terminate this Contract, by not less than thirty (30) days' written notice to the Procuring Agency, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

- (a) If the Procuring Agency fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clauses GCC 49.1 within forty-five (45) days after receiving written notice from the Consultant that such payment is overdue.
- (b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) days.
- (c) If the Procuring Agency fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 49.1.
- (d) If the Procuring Agency is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Procuring Agency of the Consultant's notice specifying such breach.

19.3. Cessation of Rights and Obligations

Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except

- (i) such rights and obligations as may have accrued on the date of termination or expiration,
- (ii) the obligation of confidentiality set forth in Clause GCC 22,

(iii) the Consultant's obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause GCC 25 and to cooperate and assist in any inspection or investigation, and (iv) any right which a Party may have under the Applicable Law.

19.4. Cessation of Services

19.4.1. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Procuring Agency, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

19.5. e.Payment upon Termination

Upon termination of this Contract, the Procuring Agency shall make the following payments to the Consultant:

- (a) remuneration for Services satisfactorily performed prior to the effective date of termination, and reimbursable expenditures for expenditures actually incurred prior to the effective date of termination; and pursuant to Clause 43;
- (b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. Obligations of the Consultant

20. General

20.1. Standard of Performance

20.1.1. The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Procuring Agency, and shall at all times support and safeguard the Procuring Agency's legitimate interests in any dealings with the third parties.

20.1.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.1.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be approved in advance by the Procuring Agency

20.2. Law Applicable to Services

20.2.1. The Consultant shall perform the Services in accordance with the Contract and in accordance with the Law of Pakistan and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

21. Conflict of Interests

21.1. The Consultant shall hold the Procuring Agency's interest's paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

21.1.1. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1.1. The payment of the Consultant pursuant to GCC F (Clauses GCC 42 through 47) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.1.2. Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Procuring Agency on the procurement of goods, works or services. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Procuring Agency.

21.1.2. Consultant and Affiliates Not to Engage in Certain Activities

21.1.2.1. The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the SCC.

21.1.3. Prohibition of Conflicting Activities

21.1.3.1. The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

21.1.4. Strict Duty to Disclose Conflicting Activities

21.1.4.1. The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Procuring Agency, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1. Except with the prior written consent of the Procuring Agency, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1. Subject to additional provisions, if any, set forth in the SCC, the Consultant's liability under this Contract shall be as determined under the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1. The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Procuring Agency, insurance against the risks, and for the coverage specified in the SCC, and (ii) at the Procuring Agency's request, shall provide evidence to the Procuring Agency showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1. The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services in such form and detail as will clearly identify relevant time changes and costs.

25.2. Pursuant to paragraph 1.23 (e) of Attachment 1 to the General Conditions, the Consultant shall permit and shall cause its agents (where declared or not), subcontractors, sub-consultants, service providers, suppliers, and personnel, to permit, the procuring agency to inspect the site and/or the accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have such accounts, records and other documents. The Consultant's and its Subcontractors' and sub-consultants' attention is drawn to Sub-Clause 10.1 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Procuring Agency's inspection and audit rights constitute a prohibited practice subject to contract termination.

26. Reporting Obligations

26.1. The Consultant shall submit to the Procuring Agency the reports and documents specified in Appendix A, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Procuring Agency in Reports and Records

27.1. Unless otherwise indicated in the SCC, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Procuring Agency in the course of the Services shall be confidential and become and remain the absolute property of the Procuring Agency. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Procuring Agency, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Procuring Agency.

27.2. If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Procuring Agency's prior written approval to such agreements, and the Procuring Agency shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be

specified in the SCC.

28. Equipment, Vehicles and Materials

28.1. Equipment, vehicles and materials made available to the Consultant by the Procuring Agency, or purchased by the Consultant wholly or partly with funds provided by the Procuring Agency, shall be the property of the Procuring Agency and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the Procuring Agency an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Procuring Agency's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Procuring Agency in writing, shall insure them at the expense of the Procuring Agency in an amount equal to their full replacement value.

28.2. Any equipment or materials brought by the Consultant or its Experts into the Procuring Agency's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

29. Code of Conduct

29.1. The Procuring Agencies and the Consultant are bound to follow the Code of Ethics to be issued by the Authority.

D. Consultant's Experts and Sub-Consultants

30. Description of Key Experts

30.1. The title, agreed job description, minimum qualification and time-input estimates to carry out the Services of each of the Consultant's Key Experts are described in Appendix B.

30.2. If required to comply with the provisions of Clause GCC 20a, adjustments with respect to the estimated time-input of Key Experts set forth in Appendix B may be made by the Consultant by a written notice to the Procuring Agency, provided (i) that such adjustments shall not alter the original time-input estimates for any individual by more than 10% or one week, whichever is larger; and (ii) that the aggregate of such adjustments shall not cause payments under this Contract to exceed the ceilings set forth in Clause GCC 42.2.

30.3. If additional work is required beyond the scope of the Services specified in Appendix A, the estimated time-input for the Key Experts may be increased by agreement in writing between the Procuring Agency and the Consultant. In case where payments under this Contract exceed the ceilings set forth in Clause GCC 42.2, the Parties shall sign a Contract amendment.

31. Replacement of Key Experts

31.1. Except as the Procuring Agency may otherwise agree in writing, no changes shall be made in the Key Experts.

31.2. Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the

Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

32. Approval of Additional Key Experts

32.1. If during execution of the Contract, additional Key Experts are required to carry out the Services, the Consultant shall submit to the Procuring Agency for review and approval a copy of their Curricula Vitae (CVs). If the Procuring Agency does not object in writing (stating the reasons for the objection) within twenty two (22) days from the date of receipt of such CVs, such additional Key Experts shall be deemed to have been approved by the Procuring Agency.

The rate of remuneration payable to such new additional Key Experts shall be based on the rates for other Key Experts position which require similar qualifications and experience.

33. Removal of Experts or Sub-consultants

33.1. If the Procuring Agency finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Procuring Agency determine that a Consultant's Expert or Sub-consultant has engaged in Fraud and Corruption while performing the Services, the Consultant shall, at the Procuring Agency's written request, provide a replacement.

33.2. In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Procuring Agency to be incompetent or incapable in discharging assigned duties, the Procuring Agency, specifying the grounds therefore, may request the Consultant to provide a replacement.

33.3. Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Procuring Agency.

34. Replacement/ Removal of Experts – Impact on Payments

34.1. Except as the Procuring Agency may otherwise agree, (i) the Consultant shall bear all additional travel and other costs arising out of or incidental to any removal and/or replacement, and (ii) the remuneration to be paid for any of the Experts provided as a replacement shall not exceed the remuneration which would have been payable to the Experts replaced or removed.

35. Working Hours, Overtime, Leave, etc.

35.1. Working hours and holidays for Experts are set forth in Appendix B. To account for travel time to/from the Procuring Agency's country, experts carrying out Services inside the Procuring Agency's country shall be deemed to have commenced or finished work in respect of the Services such number of days before their arrival in, or after their departure from, the Procuring Agency's country as is specified in Appendix B.

35.2. The Experts shall not be entitled to be paid for overtime nor to take paid sick leave or vacation leave except as specified in Appendix B, and the Consultant's remuneration shall be deemed to cover these items.

35.3. Any taking of leave by Key Experts shall be subject to the prior approval by the Consultant who shall ensure that absence for leave purposes will not delay the progress and or impact adequate supervision of the Services.

E. Obligations of the Procuring Agency

36. Assistance and Exemptions

36.1. Unless otherwise specified in the SCC, the Procuring Agency shall use its best efforts to:

36.1.1. Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

36.1.2. Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

36.1.3. Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

36.1.4. Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Procuring Agency's country according to the applicable law in the Procuring Agency's country.

36.1.5. Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Procuring Agency's country, of bringing into the Procuring Agency's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

36.1.6. Provide to the Consultant any such other assistance as may be specified in the SCC.

37. Access to Project Site

37.1. The Procuring Agency warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Procuring Agency will be responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

38. Change in the Applicable Law Related to Taxes and Duties

38.1. If, after the date of this Contract, there is any change in the applicable law in the Procuring Agency's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the ceiling amounts specified in Clause GCC 42.2.

39. Services, Facilities and Property of the Procuring Agency

39.1. The Procuring Agency shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (Appendix A) at the times and in the manner specified in said Appendix A.

39.2. In case that such services, facilities and property shall not be made available to the Consultant as and when specified in Appendix A, the Parties shall agree on (i) any time extension that it may be appropriate to grant to the Consultant for the performance of the Services, (ii) the manner in which the Consultant shall procure any such services, facilities and property from other sources, and (iii) the additional payments, if any, to be made to the Consultant as a result thereof pursuant to Clause GCC 42.3.

40. Counterpart Personnel

40.1. The Procuring Agency shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Procuring Agency with the Consultant's advice, if specified in Appendix A.

40.2. If counterpart personnel are not provided by the Procuring Agency to the Consultant as and when specified in Appendix A, the Procuring Agency and the Consultant shall agree on (i) how the affected part of the Services shall be carried out, and (ii) the additional payments, if any, to be made by the Procuring Agency to the Consultant as a result thereof pursuant to Clause GCC 42.3.

40.3. Professional and support counterpart personnel, excluding Procuring Agency's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Procuring Agency shall not unreasonably refuse to act upon such request.

41. Payment Obligation

41.1. In consideration of the Services performed by the Consultant under this Contract, the Procuring Agency shall make such payments to the Consultant and in such manner as is provided by GCC F below.

F. Payments to the Consultant

42. Ceiling Amount

42.1. An estimate of the cost of the Services is set forth in Appendix C (Remuneration) and Appendix D (Reimbursable expenses).

42.2. Payments under this Contract shall not exceed the ceilings in foreign currency and in local currency specified in the SCC.

42.3. For any payments in excess of the ceilings specified in GCC42.2, an amendment to the Contract shall be signed by the Parties referring to the provision of this Contract that evokes such amendment.

43. Remuneration and Reimbursable Expenses

43.1. The Procuring Agency shall pay to the Consultant (i) remuneration that shall be determined on the basis of time actually spent by each Expert in the performance of the Services after the date of commencing of Services or such other date as the Parties shall agree in writing; and (ii) reimbursable expenses that are actually and reasonably incurred by the Consultant in the performance of the Services.

43.2. All payments shall be at the rates set forth in Appendix C and Appendix D.

43.3. Unless the SCC provides for the price adjustment of the remuneration rates, said remuneration shall be fixed for the duration of the Contract.

43.4. The remuneration rates shall cover: (i) such salaries and allowances as the Consultant shall have agreed to pay to the Experts as well as factors for social charges and overheads (bonuses or other means of profit-sharing shall not be allowed as an element of overheads), (ii) the cost of backstopping by home office staff not included in the Experts' list in Appendix B, (iii) the Consultant's profit, and (iv) any other items as specified in the SCC.

43.5. Any rates specified for Experts not yet appointed shall be provisional and shall be subject to revision, with the written approval of the Procuring Agency, once the applicable remuneration rates and allowances are known.

44. Taxes and Duties

44.1. The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the SCC.

44.2. As an exception to the above and as stated in the SCC, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Procuring Agency on behalf of the Consultant.

45. Currency of Payment

45.1. Any payment under this Contract shall be made in the currency(ies) specified in the SCC.

46. Mode of Billing and Payment

46.1. Billings and payments in respect of the Services shall be made as follows:

(a) Advance payment. Within the number of days after the Effective Date, the Procuring Agency shall pay to the Consultant an advance payment as specified in the SCC. Unless otherwise indicated in the SCC, an advance payment shall be made against an advance payment bank guarantee acceptable to the Procuring Agency in an amount (or amounts) and in a currency (or currencies) specified in the SCC. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in Appendix E, or in such other form as the Procuring Agency shall have approved in writing. The advance payments will be set off by the Procuring Agency in equal installments against the statements for the number of months of the Services specified in the SCC until said advance payments have been fully set off.

(b) The Itemized Invoices. As soon as practicable and not later than fifteen (15) days after the end of each calendar month during the period of the Services, or after the end of each time interval otherwise indicated in the SCC, the Consultant shall submit to the Procuring Agency, in duplicate, itemized invoices, accompanied by the receipts or other appropriate supporting documents, of the amounts payable pursuant to Clauses GCC 45 and GCC 46 for such interval, or any other period indicated in the SCC. Separate invoices shall be submitted for expenses incurred in foreign currency and in local currency. Each invoice shall show remuneration and reimbursable

expenses separately.

(c) The Procuring Agency shall pay the Consultant's invoices within sixty (60) days after the receipt by the Procuring Agency of such itemized invoices with supporting documents. Only such portion of an invoice that is not satisfactorily supported may be withheld from payment. Should any discrepancy be found to exist between actual payment and costs authorized to be incurred by the Consultant, the Procuring Agency may add or subtract the difference from any subsequent payments.

(d) The Final Payment .The final payment under this Clause shall be made only after the final report and a final invoice, identified as such, shall have been submitted by the Consultant and approved as satisfactory by the Procuring Agency. The Services shall be deemed completed and finally accepted by the Procuring Agency and the final report and final invoice shall be deemed approved by the Procuring Agency as satisfactory ninety (90) calendar days after receipt of the final report and final invoice by the Procuring Agency unless the Procuring Agency, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report or final invoice. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. Any amount that the Procuring Agency has paid or has caused to be paid in accordance with this Clause in excess of the amounts payable in accordance with the provisions of this Contract shall be reimbursed by the Consultant to the Procuring Agency within thirty (30) days after receipt by the Consultant of notice thereof. Any such claim by the Procuring Agency for reimbursement must be made within twelve (12) calendar months after receipt by the Procuring Agency of a final report and a final invoice approved by the Procuring Agency in accordance with the above.

(e) All payments under this Contract shall be made to the accounts of the Consultant specified in the SCC.

(f) With the exception of the final payment under (d) above, payments do not constitute acceptance of the Services nor relieve the Consultant of any obligations hereunder.

47. Interest on Delayed Payments

47.1. If the Procuring Agency had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 46.1 (c), interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the SCC.

G. Fairness and Good Faith

48. Good Faith

48.1. The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. Settlement of Disputes

49. Amicable Settlement

49.1. Any dispute of any kind whatsoever shall arise between the Procuring Agency and the Service Provider in connection with or arising out of the Contract, including without prejudice to the generality of the foregoing, any question regarding its existence, validity or termination, or the execution of the Project –whether during

developing phase or after their completion and whether before or after the termination, abandonment or breach of the Contract – the parties shall seek to resolve any such dispute or difference by mutual consultation. If the parties fail to resolve such a dispute or difference even after negotiations or mediation, then the dispute shall be referred within fourteen (14) days in writing by either party to the Arbitrator, with a copy to the other party.

49.2. Any dispute in respect of which a notice of intention to commence arbitration has been given, in accordance with GCC sub-clause 45.1, shall be finally settled by arbitration. Arbitration may be commenced prior to or after completion of the Project. Arbitration proceedings shall be conducted in accordance with Arbitration Act 1940.

49.3. Notwithstanding any reference to the arbitration herein, the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree that the Procuring Agency shall pay the Service Provider any monies due the Service Provider.





Special Conditions of Contract

SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the Conditions of Contract. The corresponding clause number of the GCC is indicated in parentheses.

Number of GC Clause

Amendments of, and Supplements to, Clauses in the General Conditions of Contract>

Number of GC Clause 3.1

The Contract shall be interpreted in accordance with the laws of Islamic Republic of Pakistan

Number of GC Clause 4.1

The language is **English**

Number of GC Clause 6.1 and 6.2

The addresses are:

The Procuring Agency is: Multan Electric Power Company (MEPCO) (Multan Electric Power Company (MEPCO)), Assistant Manager Procurement MEPCO Complex, Wapda Colony, Khanewal Road, Multan City, Multan (District), Multan Division (Division), Punjab (Province).

The Consultant Address:

The title of the subject procurement is: (123/27) Hiring of Consultant Regarding Supervision of Procurement & Installation of APMS on High AT&C Loss Feeders against MEPCO Tender No. 01//ICB

Number of GC Clause 8.1

[Note: If the Consultant consists only of one entity, state "N/A"; Or

The Lead Member on behalf of the JV is _____ *[insert name of the member]*

Number of GC Clause 9.1

The Authorized Representatives are:

The Authorized Representatives are:

For the Procuring Agency:

Multan Electric Power Company (MEPCO) (Multan Electric Power Company (MEPCO)), Assistant Manager Procurement
MEPCO Complex, Wapda Colony, Khanewal Road, Multan City, Multan (District), Multan Division (Division), Punjab (Province).
+92-319-975-7793
amproc&dist@mepco.com.pk

For the Bidder:

Name:

Designation:

Address:

Number of GC Clause 11.1

[Note: If there are no effectiveness conditions, state “N/A”]OR

List here any conditions of effectiveness of the Contract]

The effectiveness conditions are the following: *[insert “N/A” or list the conditions]*

Termination of Contract for Failure to Become Effective:

The time period shall be *[insert time period, e.g.: four months].*

Commencement of Services:

The number of days shall be *[e.g.: ten].*

Confirmation of Key Experts’ availability to start the Assignment shall be submitted to the Procuring Agency in writing as a written statement signed by each Key Expert.

Expiration of Contract:

The time period shall be *[insert time period, e.g.: twelve months].*

Number of GC Clause 23.1

No additional provisions.

The following limitation of the Consultant’s Liability towards the Procuring Agency can be subject to the Contract’s negotiations:

Consultant's Liabilities

The Consultant shall be fully responsible and liable for the quality, accuracy and completeness of all services rendered under this assignment. Any loss or damage caused to the Client due to negligence, error, or omission of the Consultant shall be the sole responsibility of the Consultant. The Consultant shall indemnify MEPCO against all such claims and losses.

Number of GC Clause 24.1

The insurance coverage against the risks shall be as follows:

(a) Professional liability insurance, with a minimum coverage of *[insert amount and currency which should be not less than the total ceiling amount of the Contract];*

Number of GC Clause 33. Removal of Experts or Sub-consultants

[Note to Procuring Agency: include the following for supervision of infrastructure contracts (such as Plant or Works) and for other consulting service where the social risks are substantial or high, otherwise delete.]

Price adjustment on the remuneration [insert “applies” or “ does not apply”]

[If the Contract is less than 18 months, price adjustment does not apply.

If the Contract has duration of more than 18 months, a price adjustment provision on the remuneration for foreign and/or local inflation shall be included here. The adjustment should be made every 12 months after the date of the contract for remuneration in foreign currency and – except if there is very high inflation in the Procuring Agency’s country, in which case more frequent adjustments should be provided for – at the same intervals for remuneration in local currency. Remuneration in foreign currency should be adjusted by using the relevant index for salaries in the country of the respective foreign currency (which normally is the country of the Consultant) and remuneration in local currency by using the corresponding index for the Procuring Agency’s country. A sample provision is provided below for guidance:

Payments for remuneration made in [foreign and/or local] currency shall be adjusted as follows:

{ or }

where

R_f is the adjusted remuneration;

R_{fo} is the remuneration payable on the basis of the remuneration rates (**Appendix C**) in foreign currency;

I_f is the official index for salaries in the country of the foreign currency for the first month for which the adjustment is supposed to have effect; and

I_{fo} is the official index for salaries in the country of the foreign currency for the month of the date of the Contract.

{ or }

where

R_l is the adjusted remuneration;

R_{lo} is the remuneration payable on the basis of the remuneration rates (**Appendix D**) in local currency;

I_l is the official index for salaries in the Procuring Agency’s country for the first month for which the adjustment is to have effect; and

I_{lo} is the official index for salaries in the Procuring Agency’s country for the month of the date of the Contract.

The currency of payment shall be the following: PKR

[The advance payment could be in either the foreign currency, or the local currency, or both; select the correct wording in the Clause here below. The advance bank payment guarantee should be in the same currency(ies)]

The following provisions shall apply to the advance payment and the advance bank payment guarantee:

Following is the guidance for Dispute Resolution

i. If any dispute of any kind whatsoever shall arise between the Authority and the Bidder in connection with or arising out of the Contract, including without prejudice to the generality of foregoing, any question regarding its existence, validity, termination and the execution of the Contract – whether during developing phase or after their completion and whether before or after the termination, abandonment or breach of the Contract – the parties shall seek to resolve any such dispute or difference by mutual diligent negotiations in good faith within 14 (fourteen) days following a notice sent by one Party to the other Party in this regard.

ii. At future of negotiation the dispute shall be resolved through mediation and mediator shall be appointed with the mutual consent of the both parties.

iii. At the event of failure of mediation to resolve the dispute relating to this contract such dispute shall finally be resolved through binding Arbitration by sole arbitrator in accordance with Arbitration Act 1940. The arbitrator shall be appointed by mutual consent of the both parties. The Arbitration shall take place in Islamabad, Pakistan and proceedings will be conducted in English language.

iv. The cost of the mediation and arbitration shall be shared by the parties in equal proportion however the both parties shall bear their own costs and lawyer's fees regarding their own participation in the mediation and arbitration. However, the Arbitrator may make an award of costs upon the conclusion of the arbitration making any party to the dispute liable to pay the costs of another party to the dispute.

v. Arbitration proceedings as mentioned in the above clause regarding resolution of disputes may be commenced prior to, during or after completion of the contract.

Notwithstanding any reference to the arbitration herein, the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree that the Authority shall pay the Bidder any monies due to the Bidder.

Arbitrator's fee:

The fee shall be specified in Pak Rupees, as determined by the Arbitrator, which shall be shared equally by both parties.

Appointing Authority for Arbitrator:

By the Mutual Consent or in accordance with the provisions of Arbitration Act, 1940, in case the parties fail to reach a consensus on the name of sole arbitrator, any party may submit an application to the Chief Justice Islamabad High Court for appointment of sole arbitrator. The Chief Justice IHC may appoint a former judge of any High Court or Supreme Court as the sole arbitrator to resolve the dispute between the parties.

Rules of procedure for arbitration proceedings:

Any dispute between the Authority and a Bidder who is a national of the Islamic Republic of Pakistan arising in connection with the present Contract shall be referred to adjudication or arbitration in accordance with the laws of the Islamic Republic of Pakistan including Arbitration Act 1940, however above provision shall prevail in referring the case to the Arbitrator.

Place of Arbitration and Award:

The arbitration shall be conducted in English language and place of arbitration shall be at Islamabad. The award of the arbitrator shall be final and shall be binding on the parties.



Bid Securing Declaration

Bid Securing Declaration

Date: *[insert date (as day, month and year)]*

Bid No.: **P119041**

To: **Multan Electric Power Company (MEPCO) (Multan Electric Power Company (MEPCO)), Assistant Manager Procurement MEPCO Complex, Wapda Colony, Khanewal Road, Multan City, Multan (District), Multan Division (Division), Punjab (Province).**

We, the undersigned, declare that:

We understand that, according to your conditions, Bids must be supported by a Bid Securing Declaration.

We accept that we will be blacklisted and henceforth cross debarred for participating in respective category of public procurement proceedings for a period of (not more than) six months, if fail to abide with a bid securing declaration, however without indulging in corrupt and fraudulent practices, if we are in breach of our obligation(s) under the Bid conditions, because we:

1. have withdrawn or modified our Bid during the period of Bid Validity specified in the Form of Bid;
2. Disagreement to arithmetical correction made to the Bid price; or
3. having been notified of the acceptance of our Bid by the Procuring Agency during the period of Bid Validity, (i) failure to sign the contract if required by Procuring Agency to do so or (ii) fail or refuse to furnish the Performance Security or to comply with any other condition precedent to signing the contract specified in the Bidding Documents.

We understand this Bid Securing Declaration shall expire if we are not the successful

Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight (28) days after the expiration of our Bid.



Contract Form

FORM OF CONTRACT

This CONTRACT (hereinafter called the “Contract”) is made the [number] day of the month of [month], [year], between, on the one hand, [name of Procuring Agency or Recipient] (hereinafter called the “Procuring Agency”) and, on the other hand, [name of Consultant] (hereinafter called the “Consultant”).

[If the Consultant consist of more than one entity, the above should be partially amended to read as follows: “...(hereinafter called the “Procuring Agency”) and, on the other hand, a Joint Venture consisting of the following entities, each member of which will be jointly and severally liable to the Procuring Agency for all the Consultant’s obligations under this Contract, namely, [name of member] and [name of member] (hereinafter called the “Consultant”).]

WHEREAS

1. the Procuring Agency has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the “Services”);
2. the Consultant, having represented to the Procuring Agency that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;
3. the Procuring Agency has received [or has applied for] a loan [or credit or grant] from the *[Insert as appropriate:]*) toward the cost of the Services and intends to apply a portion of the proceeds of this [loan/credit/grant] to eligible payments under this Contract, it being understood that (i) payments will be made only at the request of the Procuring Agency; (ii) such payments will be subject, in all respects, to the terms and conditions of the [loan/financing/grant] agreement, including prohibitions of withdrawal from the [loan/credit/grant] account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import.

NOW THEREFORE the parties hereto hereby agree as follows:

The following documents attached hereto shall be deemed to form an integral part of this Contract:

- The General Conditions of Contract
- The Special Conditions of Contract;
- Appendices: Appendix
 - Terms of Reference Appendix
 - Key Experts Appendix
 - Remuneration Cost Estimates Appendix)
 - Reimbursable Cost Estimates Appendix
 - Form of Advance Payments Guarantee

In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A;

Appendix B; Appendix C and Appendix D; and Appendix E. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Procuring Agency and the Consultant shall be as set forth in the Contract, in particular:

- (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
- (b) the Procuring Agency shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[Name of Procuring Agency]*

[Authorized Representative of the Procuring Agency – name, title and signature]

For and on behalf of *[Name of Consultant or Name of a Joint Venture]*

[Authorized Representative of the Consultant – name and signature]

[For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached.]

For and on behalf of each of the members of the Consultant *[insert the name of the Joint Venture]*

[Name of the lead member]

[Authorized Representative on behalf of a Joint Venture]

[add signature blocks for each member if all are signing]



Integrity Pact

Integrity Pact

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAYABLE BY THE SUPPLIERS OF GOODS, SERVICES & WORKS IN CONTRACTS WORTH RS.10.00 MILLION OR MORE

Contract

Number: Contract

Value: Contract Title:

Dated:

[Name of Supplier] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan or any administrative subdivision or agency thereof or any other entity owned or controlled by it (GoP) through any corrupt business practice.

Without limiting the generality of the foregoing [Name of Supplier] represents and warrants that it has fully declared the brokerage, commission, fee etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultations fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

[Name of Supplier] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representative or warranty.

[Name of Supplier] accepts full responsibility and strict liability for making and false declaration, not making full disclosure, misrepresenting fact or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

Notwithstanding any rights and remedies exercised by GoP in this regard, [Name of Supplier] agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [Name of Supplier] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.



Performance Guarantee Form

Performance Guarantee Form

To: **Multan Electric Power Company (MEPCO) (Multan Electric Power Company (MEPCO)), Assistant Manager Procurement MEPCO Complex, Wapda Colony, Khanewal Road, Multan City, Multan (District), Multan Division (Division), Punjab (Province).**

WHEREAS *[name of Bidder]* (hereinafter called “the Bidder”) has undertaken, in pursuance of Contract No. *[reference number of the contract]* dated *[insert date]* for provision of Goods (hereinafter called “the Contract”).

AND WHEREAS it has been stipulated by you in the said Contract that the Bidder shall furnish you with a Bank Guarantee by a reputable bank for the sum specified therein as security for compliance with the Bidder’s performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the Bidders guarantee:

THEREFORE, WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Bidder, up to a total of *[amount of the guarantee in words and figures]*, and we undertake to pay you, upon your first written demand declaring the Bidder to be in default under the Contract and without cavil or argument, any sum or sums within the limits of *[amount of guarantee]* as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the: *[insert date]*

Signature and seal of the Guarantors

[name of bank or financial institution]

[address]

[date]





Annexure

SPECIAL CONDITIONS

BIDDER MUST SIGNED AND STAMPED THE SPECIAL CONDITIONS

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **SPECIAL CONDITIONS** (page number: 65)

PRICE SCHEDULE

BIDDER MUST SIGNED AND STAMPED THE PRICE SCHEDULE

Financial Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **PRICE SCHEDULE** (page number: 69)

LIST OF DOC TO BE FILLED BY THE BIDDER

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **LIST OF DOC TO BE FILLED BY THE BIDDER** (page number: 71)

APMS SPECIFICATIONS

Information (Read-Only)

See Form Under Additional Forms and Documents: **APMS SPECIFICATIONS** (page number: 76)



Procurement Forms







Additional Forms and Documents

SPECIAL CONDITIONS FOR BIDDING

1. This Tender is governed by PPRA Rules 2004 (Amended to-date).
2. Rate should be quoted inclusive of all taxes / duties and Sales Tax in local currency without involving any foreign exchange.
3. In order to be considered, the technical bid must be accompanied by a Bid Security of fixed amount mentioned in the data sheet valid for 105 days from tender opening date. The bid security from any schedule bank of Pakistan will be acceptable. The technical bid(s) not accompanied with above mentioned bid security will be considered non-responsive **and also conditional tenders/bids/rate** or tender without bid money will not be accepted.
4. Performance security in shape of **Bank Guarantee Only** equal to 05% (Five percent) of the total value of contract (**Including Tax**) shall be furnished with the acceptance of LOI / NOA within 14 days from any scheduled bank of Pakistan in favour of **CEO MEPCO** by the successful bidder(s) after the issuance of LOI / NOA valid for 12 months from the issuance of Work Order. Non-compliance may tantamount to cancellation of LOI /NOA & bid money will be confiscated in favour of MEPCO and black listing of firm / debarring of firm.
5. Bid Security and Performance Security be furnished on non-judicial stamp paper of value of prescribe by the Government.
6. The prices include the present duties, taxes. In case however the present duties and taxes are increased or new taxes / duties are imposed on finished goods by the Govt. during the currency of contract, the same will be paid extra on production of documentary evidence. In case of decrease in duties/ taxes by Govt., the price will be decreased accordingly.
7. **PAYMENT CLAUSE:**
The Payment will be made directly by the Chief Financial Officer MEPCO Multan or through confirmed & irrecoverable inland letter of credit at sight from nationalized bank of Pakistan. All charges relating to L/C opening and negotiation together with subsequent amendments shall be borne by the contractor. The payment / negotiation of L/C will be made on presentation of following documents.
 - i) Invoice of PROVIDED SERVICES in triplicate duly approved by Office of Chief Supply chain office being the end user and pre-audited by the CFO office MEPCO with following provisions.

Sr. No.	Activity	% Payment
1	Mobilization Advance against Bank Guarantee	10%
2	Report upon completion of installation of 50% APMS on feeders after due certificate of completion by concerned formation.	30%
3	Report upon completion of installation of 100% APMS on feeders after due certificate of completion by concerned formation.	30%
4	Upon Verification of communication of features of APMS installed with PITC and field verification report	20%
5	Upon completion of Six-months defect liability period (with effect from issuance of completion certificate by MEPCO)	10%
Total		100%

- ii) non-payment certificate.
 - iii) Confirmation of Director (Procurement) Dist: MEPCO Ltd. Multan about acceptance of performance bond in case of first claim only.
 - iv) The payment of the Sales tax shall be made on presentation of following documents:
 - a. Sales tax invoice as per section-23 of Sales tax act 1990.
 - b. Sales tax cum payment Challan for the concerned monthly duly paid into Government treasury.
8. The complete offer should be submitted as under:
- Complete Bid should be in duplicate failing in which shall be ignored. In the event of any discrepancy between them, the original shall govern.
 - The original and all copies of the Bid shall be typed or written on indelible ink and shall duly authorize & bind the bidder to the contract. The authorization shall be indicated is written power of attorney accompanying the Bid. All pages of the Bid, except for un-amended printed literature, shall be initialed by the person or persons signing the Bid.
 - Cutting / overwriting / using fluid on the bid is strictly prohibited and may tantamount to rejection of bid.
 - The bidder shall clearly mention all information precisely regarding Bid Validity, completion schedule, term of payment and schedule of technical data. Any incomplete information as required in said tender will lead the offer for rejection.
9. The Tender shall be duly filled in, signed and stamped by the Consultant in English, otherwise the offer will be considered incomplete / rejected.
10. Consultant will submit a certificate that the firm is not blacklisted / debarred by any Government Department / Authority
11. The Consultant / Firm shall maintain close liaison with the concerned department throughout the assignment. Tender documents of **Tender No. 123/27** shall be provided to the Consultant upon request.
12. Technical literature in English giving out salient features of the item must accompany the Bid.
13. **LATE BID SECURITY:**
The Bidder shall be solely responsible for ensuring that the Bid Security is submitted in accordance with the instructions stated in the Advertisement / Bidding Documents. Any Bid Security received after the deadline prescribed for submission of bids shall not be considered, even if the delay is caused by circumstances beyond the Bidder's control.
14. **MODIFICATION BID:**
The bidder may modify or withdrawn it's Bid after the Bid's submission. Provided that written notice of the modification or withdrawal is received by the purchaser prior to the deadline prescribed for submission of Bids.
15. **AMENDMENT OF BID SCHEDULE:**
At any time before the submission of Proposals, the Employer may amend the RFP by issuing an addendum in writing or by standard electronic means. To give Consultants reasonable time in which to take an amendment into account in their Proposals, the Employer may, if the amendment is substantial, extend the deadline for the submission of Proposals.
16. **SEALING & MARKING OF BIDS: (As per EPADS)**
17. **FAILURES AND TERMINATION:**
A) If the Consultant fails to perform the services or deliver the agreed deliverables within the specified timeframe, the client shall be entitled at his option either:

- i) To recover from your liquidated damages levied at the rate of two percent (2%) per month or a fraction thereof subject to a maximum of ten (10%) of the work order price, except:
 - a. The client may recover such damages by deducting the amount from any payments due to the Consultant under this or any other contract with the MEPCO, or WAPDA / DISCOs.
 - ii) To avail services from elsewhere without notice to you at your risk and cost, the services not delivered without canceling the work order in respect of the consignment not yet due for delivery or
 - iii) To cancel the work order at your risk and cost in the event of event of action being taken under (ii) or (iii) above, you shall be liable for any loss which the client may suffer on the account.
- B) If during the course of execution of work order, you are black listed by WAPDA / MEPCO or any other DISCO under PPMC then MEPCO may proceed with all or any of the actions detailed below: -
- i) To allow the work order to run its course till completed in accordance with terms and conditions of the contract
 - ii) To stop further work with or without financial repercussions.
 - iii) To cancel the work order with or without reservation or rights.
- 18. FORCE MAJEURE:**
 The right of MEPCO while terminating the contract for breach of contract or imposing liquidated damages, the MEPCO shall give due consideration to the circumstances leading to the breach of contract or delay on which you had no hold, which are:
- i) Act of God.
 - ii) Act of State, War or any act of the enemy.
 - iii) Lock outs, Riots or Civil commotion.
- 19. FORFEITURE OF BID SECURITY / PERFORMANCE GUARANTEE (PERFORMANCE BOND):**
 The contracting officer will have the right to blacklist / debar & forfeit the Security / Performance Bond.
- A) If the contractor/consultant:
- i) fails to supply the services within the time specified;
 - ii) commits any breach contract.
- If the forfeiture of the security deposit does not compensate the contracting officer for losses suffered due to non-delivery or breach of contract for any other reason, the contracting officer will have a right to forfeit other security deposits or to recover the same from any other security deposits made in favor of any other unit of DISCOs / GENCOs / NTDC / WAPDA / MEPCO or from any money due to the contractor from any unit of WAPDA / MEPCO / DISCOs / GENCOs / NTDC.**
- 20. PREFERENCE OF TENDER CONDITIONS:**
 In Case of any contradiction between the Clauses of Bid Data / Instructions to Bidders and Special Conditions for Bidding then the relevant clause(s) of Special Conditions for Bidding & clause(s) of bid data will prevail over Instructions to the Bidder.
- 21.** The blacklisting of firms and contractors will be carried out as per Blacklisting Policy of MEPCO available at MEPCO website.
- 22.** The parties agree that this agreement and any subsequent agreement (s) shall be governed by, applied to, interpreted and construed in accordance with the laws of the Islamic Republic of Pakistan.
 In relation to any legal action or proceedings rising out of or in connection with this agreement, the parties irrevocably submit to the exclusive jurisdiction of the competent

- courts of Law at Multan, Pakistan.
23. The Consultant and its personnel shall treat all data, drawings, and information provided by MEPCO as strictly confidential and shall not disclose the same to any third party without prior written consent of MEPCO. The Consultant shall maintain impartiality, avoid any conflict of interest with the installation contractor/equipment supplier, and adhere to the highest standards of professional ethics and integrity throughout the assignment, in line with PPRA's Code of Conduct.
23. PPRA Rules (Amended to-date) will prevail during the whole procurement process.



FINANCIAL BIDS SUBMISSION FORM

{Location, Date}

To: [Name and address of Procuring Agency]

Dear Sir:

We, the undersigned, offer to provide the non-consultancy Services s for [Insert title of assignment] in accordance with your Request for Bids dated [Insert Date]

Our attached Financial Bids is for the amount of {Indicate the corresponding to the amount(s) currency (ies)} {Insert amount(s) in words and figures}, [Insert “including” or “excluding”] of all applicable taxes.

Our Financial Bids shall be fixed and remain valid for the duration of the contract and extension period of the contract

We understand you are not bound to accept any Bids you receive. We remain,
Yours sincerely,

Authorized Signature {In full and initials}:

Name and Title of Signatory: _____

In the capacity of: _____

Address: _____

E-mail: _____

PRICE SCHEDULE

(To be filled by the Individual Consultant / Firm / JV/Consortium)

Name of Assignment:

Hiring of Consultant for Supervision of Procurement & Installation of APMS on High AT&C Loss Feeders against MEPCO Tender No. 123/27

Name of Individual Consultant / Firm / JV/Consortium: ____

Sr. No.	Description of Services	Unit	Quantity	Total Amount (Rs.)	Total Amount (Rs.) without Taxes	Total Amount (Rs.) with all Taxes <u>(Bidder Must match this column Price with Quoted Bid Amount on EPADS)</u>
1	Complete Consultancy Services for Supervision of Procurement & Installation of APMS as per Scope of Work / TORs	Lump Sum	01 Job			

Grand Total (Inclusive of all taxes)

Amount in Words: _____

Notes:

- The quoted price shall be inclusive of all taxes, duties, transportation, accommodation, TA/DA, and all other expenses.
- PST (if applicable) shall be mentioned separately.
- Payment shall be made as per the Payment Schedule mentioned in the bidding documents.
- No escalation or additional claim shall be entertained.

Signature of Consultant: _____

Name: _____

Date: _____

Stamp: _____

List of Forms to be submitted by the bidder

1. Bids Submission Sheet
2. Form of Bid Security
3. Letter of Acceptance
4. Qualification Information Form



Bids Forms

Bids Submission Sheet

Date: _____

Contract No.: _____

To: _____

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the bidding document, including Addenda No.: _____;
- (b) We offer to provide the required Services in conformity with the bidding document and in accordance with the delivery schedule specified in the Schedule of Requirements, the following Services: _____;
- (c) Our Bids shall be valid for a period of _____ days from the date fixed for the Bids submission deadline in accordance with the bidding document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (d) If our Bids is accepted, we commit to submit a Performance Guarantee in the number of _____ Percent of the Contract Price for the due performance of the Contract;
- (e) The rates quoted by us are fixed and valid for _____ and binding upon us for the entire period of the contract and period of extension.
- (f) We are not participating, as Bidders, in more than one Bids in this Bidding process, other than alternative offers in accordance with the bidding document;
- (g) Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, have not been declared ineligible by any Government, public sector, bilateral, multilateral agency in Pakistan or international financial organization/ foreign country.

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bids for and on behalf of _____

Form of Bid Security

[insert Bank's Name, and Address of Issuing Branch or Office]

Beneficiary: *[insert Name and Address of Procuring agency]*

Date: *[insert date]*

Bid Security No.: *[insert number]*

We have been informed that *[insert name of the Service provider]* (hereinafter called "the Service Provider") has submitted to you its Bids dated *[insert date]* (hereinafter called "the Bids") for the execution of *[insert name of contract]*.

Furthermore, we understand that, according to your conditions, Bid must be supported by a Bid Security.

At the request of the Bidder, we *[insert name of Bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[insert amount in figures]* *[insert amount in words]* upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the Bids conditions, because the Service Provider:

- (a) has withdrawn its Bid during the period of Bid validity specified by the Bidder in the Forms of Bid; or
- (b) having been notified of the acceptance of its Bid by the *Procuring agency* during the period of Bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the Performance Guarantee, in accordance with the ITB.

This guarantee will expire: (a) if the Bidder is the successful Service Provider, upon our receipt of copies of the contract signed by the Bidder and the Performance Guarantee issued to you upon the instruction of the Service Provider; and (b) if the Bidder is not the successful Service Provider, upon the earlier of (i) our receipt of a copy your notification to the Bidder of the name of the successful Service Provider; or (ii) twenty-eight days after the expiration of the Service Provider's Bids.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid Security for and on behalf of _____

Date _____

Letter of Acceptance

[Letter head paper of the Procuring Agency]

[date]

To: *[name and address of the Supplier/Contractor]*

This is to notify you that your Bid dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Special Conditions of Contract]* for the Contract Price of the equivalent of *[amount in numbers and words]* *[name of currency]*, as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by us.

We hereby confirm *[insert the name of the Appointing Authority]*, to be the Appointing Authority, to appoint the Arbitrator in case of any arisen disputes in accordance with **ITB 35**.

You are hereby informed that after you have read and return the attached draft Contract the parties to the contract shall sign the vetted contract within fourteen (14) working days.

You are hereby required to furnish the Performance Guarantee in the form and the amount stipulated in the Special Conditions of the Contract within a period of fourteen (14) days after the receipt of Letter of Acceptance.

Authorized Signature:

Name and Title of Signatory:

Name of Agency:

Attachment: Contract

Copy: Appointing Authority and Supplier

QUALIFICATION INFORMATION FORM

Bidder's name [insert full name]
In case of Joint Venture (JV), name of each member: [insert full name of each member in JV]
Bidder's actual or intended country of registration: [indicate country of Constitution]
Bidder's actual or intended year of incorporation: [indicate year of Constitution]
Bidder's legal address [in country of registration]: [insert street/ number/ town or city/ country]
Bidder's authorized representative information Name: [insert full name]
Address: [insert street/ number/ town or city/ country]
Telephone/Fax numbers: [insert telephone/fax numbers, including country and city codes]
E-mail address: [indicate e-mail address]
Attached are copies of original documents of Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITBs.
In case of JV, letter of intent to form JV or JV agreement, in accordance with the ITBs

Note: The procuring agency may insert in this section additional form in accordance with their requirement.



Power Planning & Monitoring Company

Office of Chief (Technical Services), Office # 112, Evacuee Trust Complex, Agha Khan Road, F-5/1, Islamabad. Tel: +92 51 92 1301-302, Email: tufail.ahmed@ppmc.gov.pk

No. 183-208 / TS / PPMC / 12

Dated: 27 / 04 / 2026

All Chief Executive Officers DISCOs

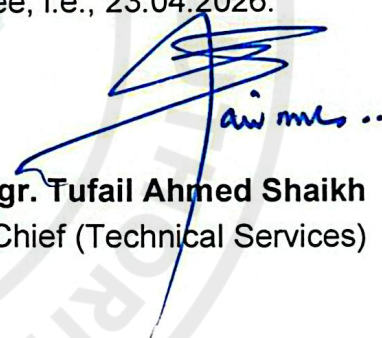
CEO K-Electric, Karachi

CEO Barqiat, AJK Electricity Department

CEO Water & Power Department, Gilgit Baltistan

Subject: REVISED PPMC SPECIFICATION NO. PPMC-DS-01:2026 OF ASSET PERFORMANCE MANAGEMENT SYSTEM (APMS) FOR POLE MOUNTED DISTRIBUTION TRANSFORMERS

Enclosed please find herewith a copy of revised PPMC Specification No. PPMC-DS-01:2026 of Asset Performance Management System (APMS) for pole mounted Distribution Transformers, duly approved by Managing Director PPMC for your information, record and implementation. The same shall be applicable with effect from the date of approval by Specification Review Committee, i.e., 23.04.2026.


Engr. Tufail Ahmed Shaikh
Chief (Technical Services)

Cc:

1. CEO Power Information Technology Company (PITC)
2. Mr. Talha Khalid, Chief (Policy & Strategic Planning) PPMC (Member SRC)
3. Mr. Naveed Qaiser, Chief Financial Officer PPMC (Member SRC)
4. Mr. Mubashar Jalal, Chief (Monitoring & Reporting) PPMC (Member SRC)
5. Chief Engineer (Material Inspection) PPMC, Lahore
6. All Members of Technical Working Group
7. All Chief / Directors Material Management / Supply Chain Management
8. All Energy meter manufacturers
9. All LT Circuit Breaker Suppliers / manufacturers
10. All Industrial Panel manufacturers
11. All LT CT manufacturers
12. SO to MD PPMC

POWER PLANNING AND MONITORING COMPANY



SPECIFICATION (PPMC-DS-01:2026)

Asset Performance Management System (APMS) for Pole
Mounted Distribution Transformers

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Document Change Record

NGC document change record

Version	Document No.	Dated	Effective date of Application	Remarks
1.0	DDS-76:2007	2007	2007	1 st Release
1.1	Amendment-1	2010	2010	Amendment
2.0	DDS-76:2023	2023	2023	2 nd Release
2.1	Amendment-1	2024	2024	Amendment

PPMC document change record

Version	Document No.	Dated	Effective Date of Application	Remarks
1.0	PPMC-DS-01	2026	23-04-2026	1 st Release





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This specification has been prepared with due deliberations with technical working groups of DISCOs and Manufacturers.

PREPARED BY:		DRAWINGS BY:
		
Engr. Zaryab Hassan Specialist (D&S)	Engr. Yasir Arshad Asst. Specialist (D&S)	Engr. Amir Hamza Asst. Specialist (D&S)

REVIEWED AND CHECKED BY:

Engr. Sakawat Ali Team-lead (D&S)

APPROVED BY:			
			
Engr. Talha Khalid Chief Policy and Strategic Planning	Mr. Mubashir Jalal Chief Monitoring and Reporting	Mr. Naveed Qaiser Chief Financial Officer, Planning Support & RA	Engr. Tufail Ahmed Shaikh Chief Technical Services (Convener)

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Members of Technical Working Group (TWG) from Power Sector

Signed to the extent of UDIL Compliance as National Interoperability Standard, only.

Muhammad Hanif
DG (EA), PITC

Mr. Majid Jatoi
Director General MIRAD HESCO

Mr. Zubair Akhtar
General Manager (TSW) IESCO

Mr. Muhammad Boota Goraya
Chief Engineer (T&G) GEPCO

Mr. Sardar Sajid Nawaz
Operation Director HAZECO

Mr. Nisar Sarwar
Chief (TS) LESCO

Mr. Jamshed Ali
Addl. CE GSC/MM TESCO

Mr. Asad Iqbal
Addl. CE PS&C PESCO

Mr. Syed M Tayyab
Senior Lead (NE) KE

Mr. M Asghar Khan Ghallu
Chief Strategic Planner MEPCO

Mr. Abid Rasheed
Director General MIRAD FESCO

Mr. Muhammad Zulqarnain
Manager P&F MIRAD QESCO

Mr. Mushtaq Ahmed Abbasi
Customer Service Director SEPCO

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FOREWORD

The Federal Cabinet, Government of Pakistan vide its decision dated 27.10.2021 ratified the decision of Cabinet Committee on Energy (CCoE) meeting held on 08.10.2021, as per which the development of uniform Design & Standards for distribution sector of Pakistan is one of the core functions of PPMC.

Subsequently, in pursuance of Federal Cabinet decision, the Ministry of Energy (Power Division) vide notification dated 06.02.2026 has transferred the functions relating to the design, standards and specifications of 11 kV and below from NGC to PPMC.

In pursuance of the Ministry of Energy (Power Division) Notification dated 06.02.2026, whereby the functions related to development of uniform design, standards and specifications for distribution sector of Pakistan have been entrusted to Power Planning and Monitoring Company (PPMC) as it was performing before 2011 under then PEPCO (now PPMC).

Subsequent to this transition, Lahore Electric Supply Company (LESCO) vide its letter No. 1729-36 dated 11.02.2026, carried out a proof of concept (PoC) of the Asset Performance Management System (APMS) with additional features of oil temperature and oil level monitoring on distribution transformers. The PoC was undertaken through educational purchase orders to evaluate field performance, operational effectiveness and integration aspects of the enhanced system. Furthermore, LESCO through DG (MIRAD) letter No. 2508-14 dated 14.04.2026, proposed amendments and highlighted key technical and operational considerations based on field experience, including system integration challenges, monitoring limitations and the need for improved control and protection coordination.

Accordingly, the agenda for revision of the APMS specification was placed before the 1st Specification Review Committee (SRC) meeting vide No. TS/PPMC/DS/02-001 dated 18.02.2026. During the meeting held on 19.02.2026, and in line with the approved Minutes of Meeting, the initiation of the revision of the Asset Performance Management System (APMS) specification was duly considered and formally approved by the competent forum, taking into account LESCO's requirements and the need to strengthen existing standards. Thereafter, the draft specification was extensively deliberated with Technical Working Groups (TWGs) comprising representatives from all Distribution Companies (DISCOs), PITC, and K-Electric, ensuring incorporation of collective field experience, operational requirements, and practical considerations across utilities. Also, in alignment with the Ministry of Energy (Power Division) letter No. 12(23)/2018-DISCO-I dated 24.06.2025 regarding adoption of e-SIM technology in smart energy meters, provision for both embedded SIM (eSIM) and conventional physical SIM-based communication modules have been incorporated. However, mechanism of adoption e-SIM needs to be developed and implemented.

Following detailed consultations and incorporation of stakeholder inputs, the specification was subsequently approved in the 3rd SRC meeting held on 22.04.2026 held vide No DS-SRC-02 dated 22-04-2026.

This specification, titled "*Asset Performance Management System (APMS) for Pole Mounted Distribution Transformers*," has then been developed in continuation of the earlier specification DDS-76:2023 (amended to date), incorporating necessary improvements in light of field feedback and evolving sectoral needs.





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The present revision introduces enhanced functionalities, including optional oil temperature and oil level monitoring through dedicated sensor assemblies, improved control philosophy through coordinated operation of MCCB and magnetic contactor, and clearly defined requirements for installation, operation, and safety. A significant addition is the introduction of a structured ordering code framework, enabling DISCOs and K-Electric to select configurations in line with their specific operational requirements. This modular approach provides flexibility in procurement while maintaining standardization and interoperability across the power distribution network.

The revised specification has been formulated in response to the evolving needs of Pakistan's power distribution sector, with particular emphasis on improved monitoring, protection, control, and reduction of technical and commercial losses. In this context, APMS is envisioned as a critical tool for transformer-level energy audit, enabling enhanced visibility of system performance and facilitating a gradual transition from feeder-level to transformer-level load management. This targeted approach supports more efficient network operation, minimizes indiscriminate interventions, and helps safeguard compliant consumers.

While earlier specifications established a foundational framework, certain limitations were identified in terms of flexibility, feature integration, clarity of requirements, and alignment with current international practices. The present revision addresses these gaps through the introduction of structured ordering codes, enhanced monitoring capabilities and alignment with relevant IEC and international standards, while also accounting for local environmental and operational conditions.

The specification emphasizes standardization, safety, reliability, and lifecycle performance, while ensuring adaptability to future technological advancements and avoiding vendor-specific dependencies. However, the effective realization of APMS benefits is contingent upon proper and continuous monitoring by utilities. Timely analysis of system data and appropriate operational response are essential for achieving improvements in loss reduction, asset protection, and service delivery. It is imperative that all protection features integrated within the APMS remain enabled and fully functional at all times.

This document has been developed through extensive consultations with DISCOs, K-Electric, and industry stakeholders. Recognizing that field conditions and technologies continue to evolve, the specification is intended to remain a dynamic document. All utilities are strongly encouraged to provide feedback based on field performance, particularly regarding operational effectiveness, reliability, load management outcomes, and impact on losses.

PPMC adopts an inclusive approach towards standard development and welcomes input from all stakeholders, including utility personnel, manufacturers, and field engineers. Feedback and suggestions may be shared with the office of Design and Standards, PPMC, through the designated email address (feedback.pds@ppmc.gov.pk), with reference to relevant clauses and supporting data where available. This collaborative approach will ensure that the specification continues to evolve as a robust, practical, and forward-looking document aligned with international best practices.





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1. SCOPE

- 1.1 This specification covers Asset Performance Management System (APMS) for Pole Mounted Distribution Transformers
- 1.2 APMS shall provide following salient features and services for Distribution Transformers on their LT side after incorporating other components of Advance Metering Infrastructure (AMI) network:
- Real time monitoring and Operation/Controlling
 - Preventive actions against damage of distribution transformers
 - Load disconnection during Fault/ Abnormal Conditions
 - Energy auditing
 - Scheduling of Load Management
 - Human/Equipment Safety
- 1.3 This specification covers APMS to be used on the LT side of following distribution transformers:
- 25 kVA Pole Mounted Distribution Transformer
 - 50 kVA Pole Mounted Distribution Transformer
 - 100 kVA Pole Mounted Distribution Transformer
 - 200 kVA Pole Mounted Distribution Transformer
 - 250 kVA Pole Mounted Distribution Transformer
 - 400 kVA Pole Mounted Distribution Transformer
 - 500 kVA Pole Mounted Distribution Transformer
 - 630 kVA Pole Mounted Distribution Transformer
- 1.4 This specification introduces an optional Oil Temperature and Oil Level Monitoring feature for the Asset Performance Management System (APMS) installed on pole mounted distribution transformers; The feature shall be realized through integration of a dedicated Oil Temperature and Oil Level Sensor Assembly connected to the SMCD directly or through a suitable controller
- 1.5 This specification introduces:
- Ordering code provisions,
 - Sensor installation requirements,
 - Controller technical requirements (if used)
- 1.6 This specification also introduces use of Magnetic Contactor with MCCB for switching operations only.





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2. APPLICABLE SPECIFICATIONS AND STANDARDS

- 2.1 The APMS shall be designed, manufactured, tested and supplied in accordance with (PPMC-PPMC-DS-01:2026 and latest IEC/International/National standards listed in **clause 2.3**.
- 2.2 In case the requirements laid down herein differ from those given in International/IEC Standards or other local specifications, the requirements listed herein shall prevail.
- 2.3 Following specifications and latest IEC/ International standards shall be applied:

DDS-50:2007 (amended to date)	3-Phase Multi-rate (TOD/TOU) Solid-State LT/HT Static Energy Meter
DDS-98:2011 (amended to date)	Specification for Advance Metering Infrastructure
DDS-110:2012 (amended to date)	Meter Data Collection (MDC) Server to be used in AMI
UDIL (latest version)	Universal Data Integration Layer-Multivendor compliant AMI in Pakistan
DDS-80:2007 (amended to date)	LT Current Transformer for metering
IEC 62052-11	Electricity Metering Equipment- General requirements
IEC 62053-21	Electricity Metering Equipment- Static Meters for AC Active Energy (classes 0.5, 1 and 2)
IEC 60947-2	Low voltage switchgear and control-gear – Part 2
IEC 61869-2	Instrument Transformers – Part 2: Additional requirements for current transformers
IEC 60076-22-1	Power transformer and reactor fittings – Protective devices
IEC 60529	Degrees of protection provided by enclosures (IP Code)
IEC 60068-2-2	Environmental testing – Dry heat test
IEC 61439-1	Low-voltage switchgear and control gear assemblies- General Rules
DDS-84:2020	Distribution transformers
IEC-60947-4-1	Low voltage switchgear: contactors and motor starters-electromechanical contactors and motor starters
ISO 2859-1	Sampling procedures for inspection by attributes
IEC 60751	Industrial platinum resistance thermometers and platinum temperature sensors
ISO/IEC 17025	International standard for testing and calibration laboratories





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3. ORDERING CODE

3.1 Following ordering codes are applicable for procurement of APMS.

Ordering Code	Description
APMS-CB-S-***	Standard APMS with motorized MCCB
APMS-CB-OTL-***	APMS with motorized MCCB and with oil Temperature and level monitoring
APMS-MC-S-***	Standard APMS with Magnetic Contactor and non-motorized MCCB
APMS-MC-OTL-***	APMS with Magnetic Contactor, non-motorized MCCB and with oil Temperature and level monitoring

*** 025, 050, 100, 200, 250, 400, 500 & 630 (025 depicts 25 kVA, 050 depicts 50 kVA, 100 depicts 100 kVA, 200 depicts 200 kVA, 250 depicts 250 kVA, 400 depicts 400 kVA, 500 depicts 500 kVA and 630 depicts 630 kVA)

4. DEFINITIONS

4.1 **Molded case circuit-breaker (MCCB):**

A mechanical switching device capable of making, carrying and breaking currents under normal circuit conditions and under pre-defined conditions, making, carrying for a given time, and breaking currents under abnormal conditions such as those of short circuits

4.2 **Rated voltage for MCCB:**

The rated voltage of a circuit breaker is the value of voltage which designates it and to which the operating conditions during making or breaking of current.

4.3 **Rated nominal current for MCCB:**

The rated nominal current of a circuit breaker is the value of current which the circuit breaker can carry under test conditions.

4.4 **Rated frequency for MCCB:**

The rated frequency of a circuit breaker is the service frequency for which the circuit breaker is designed.

4.5 **Ambient temperature:**

The average temperature of the air surrounding the complete APMS Unit.





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4.6 **Rated short time current of MCCB:**

The rated short time current of a circuit breaker is the value of prospective short circuit current which the circuit breaker shall be required to carry in the closed position for a specified time and under the test conditions specified.

4.7 **Breaking capacity of MCCB:**

A value of prospective breaking current that a switching device can break at a stated voltage under prescribed condition of use and behavior.

4.8 **Making capacity of MCCB:**

A value of prospective making current that a switching device can make at a stated voltage under prescribed condition of use and behavior.

4.9 **Short time withstand current:**

Current that a circuit or a switching device in the closed position can carry during a specified short time under prescribed conditions of use and behavior.

4.10 **Rated short-circuit breaking capacity for MCCB:**

The rated short-circuit breaking capacity (I_{cs}) for an MCCB, is the maximum prospective symmetrical fault current that the MCCB can safely interrupt under specified test conditions without sustaining damage.

4.11 **Rated short-circuit making capacity MCCB:**

The rated short-circuit making capacity (I_{cm}) for an MCCB, is the maximum prospective symmetrical fault current that the MCCB can withstand for a brief period without sustaining damage during the circuit closing operation.

4.12 **Short time delay:**

Any intentional delay in operation within the limits of the rated short time withstand current.

4.13 **Magnetic contactor:**

A Magnetic Contactor is an electrically controlled switch that uses an electromagnet to open and close a circuit.

4.14 **Static meter:**

A type of electronic energy meter that measures energy consumption using solid-state electronic components, without any moving parts.





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4.15 APMS-CB-OTL:

Configuration of APMS with MCCB incorporating an Oil Temperature and Oil Level Monitoring System consisting of a sensor assembly and controller (if used).

4.16 APMS-MC-OTL:

Configuration of APMS with Magnetic Contactor and MCCB incorporating an Oil Temperature and Oil Level Monitoring System consisting of a sensor assembly and controller (if used)

5. SERVICE CONDITIONS

5.1 System Conditions:

System Nominal Voltage	415 V
System Highest Voltage	10% of Nominal Voltage
Nominal Frequency	50 Hz

5.2 Climate Conditions:

Ambient Temperature	Maximum	55°C
	Maximum mean over any 24 Hours	40°C
	Mean in any year	30°C
	Minimum	-25°C
Relative Humidity	Up to 100%	
Altitude (above sea level)	Up to 3000 meters	

6. MAJOR COMPONENTS OF APMS

6.1 Asset Performance Management System (APMS) shall be comprised of following components

- Smart Metering and Controlling Device (SMCD)
- Current Transformers (CTs)
- Molded Case Circuit Breaker (MCCB)
- Magnetic Contactor (optional as per ordering code)
- APMS Enclosure

7. SMART METERING AND CONTROLLING DEVICE (SMCD)

7.1 Smart Metering and Controlling Device (SMCD) shall be in accordance with Specifications DDS-50:2007, DDS-98:2011, DDS-110:2012 (all amended to-date).





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- 7.2 It shall measure, record and display MDI, kWh, kVARh, Power Factor and other specified quantities in compliance with the specifications given in Clause 7.1.
- 7.3 Metering Accuracy Class shall be 0.5S for kWh and 1.0 for kVARh.
- 7.4 In addition to above, it shall fulfill following specified requirements:
- It shall have Communication Module with minimum 4G/GSM/GPRS technology incorporating a SIM card/e-SIM.
 - It shall be able to communicate metering and other data stored in its memory and receive commands/write operations from Head-End System / MDM in accordance with the specifications mentioned in Clause 2 and the requirements stated herein.
 - Auxiliary components/ports essentially required for its Communication with both Head-End System / MDM and MCCB or Magnetic Contactor (whichever is applicable) shall also be provided.
 - It shall have optical communication port which shall perform functions of data reading/writing and parameterization of data. It should be disabled by default however, it can be enabled remotely through HES/MDM as per requirement of concerned utility.
- 7.5 It should be equipped with a battery. The battery type shall be lithium thionyl chloride (LiSOCI₂) having minimum capacity of 2000 mAh.
- Battery manufacturing origins shall be:
 - Japan (Toshiba, Maxell, Mitsubishi and Panasonic)
 - USA (Tadiran, Ultralife and Sonnenchein)
 - Germany (Geyer and Varta)
 - France (Saft)
 - South Korea (Xeno)
 - Operational Life of battery shall be minimum five (05) years.
 - Without any Power, the backup battery shall maintain the time, calendar and multi-rate program for a continuous period of at least 5 years.
 - Low Battery indication shall be displayed when minimum 25% battery life is left.
 - Storage/Shelf life of battery shall be more than 15 years.
 - The manufacturing year of Battery should not be more than eighteen (18) Months at the time of offering APMS.
- 7.6 Super capacitor will be provided for Real-Time Clock (RTC) to maintain date and time for at least 07 days in absence of power.
- 7.7 In the absence of power, LCD display shall be 'On demand' through scroll buttons.





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7.8 It shall have provision for following abnormal conditions:

- a. Over Voltage
- b. Under Voltage
- c. Phase Over Current
- d. Overload Condition
- e. Voltage Unbalance
- f. Current Unbalance
- g. High Apparent Power
- h. High Oil Temperature
- i. Low Oil Level
- j. Sensor Fault

7.9 Write provision for two (02) setting levels i.e., Alarm and Tripping shall be available for conditions specified in Clause 7.8, Sr. No. (a to d and h). Write provision for one (01) setting level i.e., Alarm shall be available for Sr. No. (e to g and i to j).

7.10 Threshold values of Alarm and Tripping functions and corresponding time settings shall be user programmable locally through optical port or remotely through head-End system/MDM. Once programmed, these function values shall be stored in its memory.

7.11 It shall perform normal operations and tripping operations of MCCB on the basis of programmed threshold values. Events, i.e., Alarm and Tripping shall be communicated to Head-End System/MDM.

7.12 At least 20 events, Alarm and Tripping, for each abnormal condition given in clause 7.8 and normal switching of MCCB/ Magnetic Contactor with date and time stamp shall be provided before rollover.

7.13 It shall be DLMS/COSEM compliant.

7.14 PCB must have conformal coating.

7.15 SMCD manufacturers shall possess valid prototype approval after fulfilling the requirements of this specification and qualifying prototype testing from Design & Standards department, PPMC.

8. CURRENT TRANSFORMER (CT)

8.1 Current Transformers used in APMS shall have following technical parameters as per IEC 61869-2:





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Transformer Ratings	CT Ratio	Accuracy Class	VA Burden
25 kVA	50/5A	0.5	2.5 VA (min)
50 kVA	100/5A	0.5	2.5 VA (min)
100 kVA	200/5A	0.5	2.5 VA (min)
200 kVA	400/5A	0.5	2.5 VA (min)
250 kVA	400/5A	0.5	2.5 VA (min)
400 kVA	600/5A	0.5	2.5 VA (min)
500 kVA	800/5A	0.5	2.5 VA (min)
630 kVA	1000/5A	0.5	2.5 VA (min)

8.2 CT error limits shall be as under:

Ratio Error ($\pm$ %) at Current (% of Rated)				Phase Displacement ($\pm$ Minutes) at Current (% of Rated)			
5	20	100	120	5	20	100	120
1.5	0.75	0.5	0.5	90	45	30	30

- 8.3 The temperature rise test shall be performed at 120% of rated current as per IEC 61869-2 (latest available)
- 8.4 Dimensional requirements for the base plate are given in the drawings. Other CT dimensions should be so that they can be adequately fixed on bus bars.
- 8.5 Other than the requirements stated above, the technical parameters and testing criteria shall be in accordance with DDS-80:2007 (amended to date).
- 8.6 CT manufacturers shall possess valid prototype approval after fulfilling the requirements of this specification and qualifying for prototype testing from the office of Design & Standards (D&S) PPMC.

9. **MOLDED CASE CIRCUIT BREAKER (MCCB)**

FOR MOTORIZED MCCB WITH RESIDUAL CURRENT (ORDERING CODES APMS-CB)

9.1 MCCB shall provide protection for the following protection functions:

- Adjustable Overload Protection with long inverse time delay trip and trip characteristic with inverse time curves.





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- b. Adjustable Short Circuit Protection with definite trip time delay.
 - c. Adjustable Short Circuit with instantaneous trip
 - d. Adjustable Residual Current Protection.
- 9.2 MCCB shall be 3P+N type in compliance of latest IEC-60947-2 standard and the requirements given in this specification.
- 9.3 It can have thermal-magnetic mechanism or electronic/Microprocessor based mechanism.
- 9.4 It should be equipped with a motor-operated mechanism for switching purpose.
- 9.5 The motor-operated mechanism shall have quick make, quick break action. The charging time will not be counted in making time.
- 9.6 Two position indications ON-OFF shall be available on MCCB or its Motor Operator.
- 9.7 An "Auto/Manual" switch shall be provided on MCCB or its Motor Operator. When set to "manual" position it shall lock out the remote control.
- 9.8 Necessary auxiliary contacts/communication ports/control circuits etc. shall be used between MCCB and SMCD for communication between them.
- 9.9 The communication cables shall be carried through PVC spiral/flexible conduits. These shall have proper tagging and ferruling for easy traceability through cable ducts.
- 9.10 It shall have adjustable long time pick up current (overload/thermal) settings from at-least 0.7 to 1.0 times of MCCB current rating and also adjustable long-time delay settings.
- 9.11 It shall have adjustable short time pick up current (short circuit/ magnetic) settings of the current rating and definite time trip delay/setting. The magnetic pickup range is $5-10 \times I_n$.
- 9.12 It shall have adjustable Instantaneous pick-up current settings and MCCB shall trip instantaneously within 50msec.
- 9.13 The minimum pick up settings value of adjustable residual current shall be $\leq 30\text{mA}$. Its operating characteristics shall be as per IEC 60947-2 (clause B.4.2.4.1).
- 9.14 MCCB technical parameters are given below: -

Rated Voltage:	415/430 V
Rated Frequency:	50 Hz
Rated Nominal Current:	
25 kVA APMS:	50-60 A
50 kVA APMS:	100 A
100 kVA APMS:	200 A
200/250 kVA APMS:	400 A
400/500 kVA APMS	800 A





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630 kVA APMS	1200 A
Rated Symmetrical Breaking Capacity:	25 kA (minimum)
Rated Making Capacity:	2x Rated Symmetrical Breaking Current (min)

Note: If higher rating is to be used considering the unavailability of said ratings, approval from Design and Standards (D&S) is to be sought.

- 9.15 Type test reports from independent ILAC accredited international labs or STL approved labs shall be provided. The type test report will be as per latest IEC standard IEC-60947-2 (latest) with additional characteristics given herein.

NON-MOTORIZED MCCB (ORDERING CODES APMS-MC)

- 9.16 MCCB shall provide protection for the following protection functions:
- Overload Protection with long inverse time delay trip and trip characteristic with inverse time curves.
 - Short Circuit protection with instantaneous trip.
- 9.17 MCCB shall be 3P type in compliance with the latest IEC-60947-2 standard and the requirements given in this specification.
- 9.18 The MCCB shall be manually operated by quick make and quick break mechanism.
- 9.19 The MCCB shall be mechanically trip-free. ON-OFF breaker position shall be provided with breaker handle/ knob.
- 9.20 To minimize the effect of arcing, the breaker shall be fitted with arc quenching chamber.
- 9.21 MCCB technical parameters are given below: -

Rated Voltage:	415/430 V
Category	A
Rated Frequency:	50 Hz
Rated Nominal Current:	
25 kVA APMS:	50-60 A
50 kVA APMS:	100 A
100 kVA APMS:	200 A
200/250 kVA APMS:	400 A
400/500 kVA APMS	800 A
630 kVA APMS	1200 A
Rated Symmetrical Breaking Capacity:	25 kA (minimum)
Rated Making Capacity:	2x Rated Symmetrical Breaking Current (min)





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Note: If higher rating is to be used considering the unavailability of said ratings, approval from Design and Standards (D&S) is to be sought.

- 9.22 The breaker shall be equipped with adjustable magnetic/instantaneous /electronic (microprocess based) trip units/Fixed at $10I_n$ as mentioned in table below. The magnetic/instantaneous (I_i) or electronic settings shall be in steps or continuously be adjustable in range specified below

Rated Current (Amps)	Magnetic Trip Setting Range (Amps)
40	Fixed- 400A
60	Fixed- 600A
80	Fixed- 800A
160	Min 800-1600A
200	Min 1000-2000A
250	Min 1250-2500A
400	Min 2000-4000A
800	Min 4000-8000A
1200	Min 6000-12000A

- 9.23 The adjustable and instantaneous time lag release settings shall be completely independent of each other.
- 9.24 MCCB shall trip instantaneously within 50msec.
- 9.25 Type test reports from independent ILAC accredited international labs or STL approved labs shall be provided. The type test report will be as per latest IEC standard IEC-60947-2 (latest) with additional characteristics given herein.

10. MAGNETIC CONTACTOR

- 10.1 The Magnetic Contactor shall be used only with ordering codes APMS-MC along with non-motorized MCCB.
- 10.2 Magnetic Contactor shall be of industrial grade suitable for 415-430 V, 50 Hz system, 3P configuration and coil Voltage of 220-240V AC.





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- 10.3 The Magnetic Contactor shall be rated, Type-2 co-ordination and the AC-6a rating shall be demonstrated either by direct transformer switching test or by derivation from AC-3 rating in accordance with IEC 60947-4-1
- 10.4 Minimum durability should be mentioned in following quantities in type test reports,
- Mechanical: minimum 1,000,000 operations.
 - Electrical durability at AC 6a duty: according to IEC standard.
- 10.5 The contactor shall comply with making and breaking performance requirements as per IEC 60947-4-1 for AC-6a duty.
- The device shall be capable of safely making and breaking currents under:
 - Normal operating conditions
 - Inductive load switching
 - The making and breaking capacities shall be verified through type tests in accordance with IEC provisions.
- 10.6 Other technical parameters shall match or exceed Transformer rating and be electrically interlocked with control logic to prevent chattering. Interlocking is required between control logic and switching devices to prevent unintended repeated operations (chattering). This applies to SMCD–contactor–MCCB interaction.
- 10.7 Contactor should not be used as a protective device. Short-circuit and Overload shall be provided by MCCB and operational based control and voltage based control shall be provided by contactor in ordering codes APMS-MC. It is recommended that LT line should be well protected where ordering codes APMS-MC are used and avoided where frequent faults occur on LT lines.
- 10.8 Contactor coil shall be protected by surge suppressor / RC snubber and contactor coil shall be controlled through an intermediate control interface (relay/driver circuit). Direct energization is avoided to protect SMCD output contacts.
- 10.9 Type test reports from independent ILAC accredited international labs or STL approved labs shall be provided. The type test report will be as per latest IEC standard IEC-60947-4-1 (latest) with additional characteristics given herein.





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10.10 Drawings shall be approved with consultation with DISCOs and OEMs while considering for induction into the system against respective ordering codes (APMS-MC)

11. APMS ENCLOSURE

11.1 Enclosure body and door shall be made from high grade steel sheet of 1.6 mm and 2.3 mm thickness respectively.

11.2 Copper Busbars shall have 98% IACS conductivity and tin plated with minimum thickness of 20 microns.

11.3 Busbars shall have rectangular cross-section with

- 050mm² (min) area for 25 kVA
- 100mm² (min) area for 50 kVA
- 150mm² (min) area for 100 kVA
- 300mm² (min) area for 200/250 kVA
- 600mm² (min) area for 400/500 kVA (2x riveted busbars per phase may be used)
- 800mm² (min) area for 630kVA (2x riveted busbars per phase may be used)

11.4 Busbars shall be covered with heat shrink LV grade insulation sleeves except the connection points.

11.5 Busbars shall be mounted on Bakelite/ polymer insulators.

11.6 Following clearances shall be maintained in air within the enclosure:

- Phase to phase 50 mm
- Phase to earth 25 mm

(where such clearances cannot be maintained like MCCB/Contactor terminals, insulated separators/sleeves shall be used)

11.7 Gland sizes are,

- For 025 kVA APMS PG-16 (8 Nos)
- For 050 kVA APMS PG-21 (8 Nos)
- For 100 kVA APMS PG-30 (8 Nos)
- For 200/250 kVA APMS PG-42 (8 Nos)
- For 400/500 kVA APMS PG-42 (16 Nos)
- For 630 kVA APMS PG-42 (16 Nos)





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- 11.8 Type tested Bimetallic Lugs (Not provided with APMS) shall be used for incoming and outgoing cable connections corresponding to the size/cross sectional area of the cables used by DISCOs,
- 11.9 Mounting of SMCD shall be made on two mounting brackets as per dimensions given in the attached drawings
- 11.10 Mounting of components i.e., MCCB, contactor (if used) and busbars shall be made on the back plate. No equipment shall be directly mounted on enclosure walls.
- 11.11 A window of 150x100mm shall be provided and placed on the front door for SMCD display reading. Transparent polycarbonate sheet of 5 mm thickness overlapped on the window by 15mm on all sides shall be fixed on the inner side. It shall be made dust/waterproof using Neoprene Rubber packing.
- 11.12 Interior and exterior of enclosure surface shall be painted with powder coating paint. Finished color shall be light grey (RAL 7032) and paint thickness shall be 0.100mm minimum at any point on surface. The paint shall be applied as,
- The surfaces of the MS plate shall be thoroughly cleaned and sand blasted to prepare the metal surface for painting.
 - All the interior and exterior surfaces of the enclosure shall be thoroughly cleaned through the process of degreasing and phosphating to prepare the metal surface for painting. Good quality pretreatment is a mandatory requirement.
 - Oven baked powder coating paint having durable weather resistant properties suitable to be used in coastal area shall be applied.
- 11.13 Steel sheets and all structural joints shall be welded/bolted together so that entire enclosure is rigid and self-supporting.
- 11.14 Two MS bolted connectors shall be provided on the outside of enclosure for earthing purposes.
- 11.15 A flexible tinned copper strap of 6mmSq shall be used for electrical connectivity between door and body for earthing purposes.
- 11.16 Enclosure door shall have strong hinges, gutter arrangement and Neoprene rubber gasket. Louvers shall be provided on both sides of the APMS enclosure for cross ventilation as per attached drawings. Vermin proofing shall also be ensured.
- 11.17 Locking and sealing arrangement of enclosure shall be provided on the outside of door. The earthing terminal of hot dip galvanized MS material with zinc coating of minimum 30 microns.





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11.18 Color coding for phase/neutral wiring, CT output wiring, Busbar sleeves shall be red, yellow, blue and black.

11.19 Control and Power circuit diagrams shall be engraved and printed with black color on stainless steel/powder coated Al plate fixed inside the APMS door. All the components shall be shown through symbols in the diagram.

11.20 Following information shall be painted on the APMS enclosure:

- "APMS for 25 kVA/ 50 kVA/ 100 kVA/ 200kVA/ 250 kVA/ 400 kVA/ 500 kVA/ 630 kVA Transformer" with black color paint on the front door
- "Danger Symbol" with red color paint on both side walls.

11.21 Following information shall be engraved and printed with black color on a stainless-steel/powder coated Al nameplate and fixed on the front of APMS enclosure:

- APMS Designed for 25 kVA/ 50 kVA/ 100 kVA/ 200kVA/ 250 kVA/ 400 kVA/ 500 kVA/ 630 kVA Distribution Transformer.
- Serial No.
- Rated Voltage (V)
- Rated Current (A)
- MCCB Rating (A)
- Magnetic Contactor Rating (A) (if applicable)
- CT Ratio
- Year of Manufacturing
- P.O No. & Date
- Warranty Expiry Date
- Name of Supplier/ Manufacturer
- Name of DISCO
- Manufacturer of OTL (for OTL ordering codes only)
- Low Oil level and Normal Recovery Point (for OTL ordering codes only)
- Ordering Code

11.22 Enclosure Tests

Following tests shall be carried out on the enclosure.

11.22.1 Visual Inspection

APMS enclosure shall be visually inspected for any defects mentioned below:





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Examination	Defects
Material	Enclosure components not made from specified material.
Finish	Nuts, bolts and washers not galvanized. Busbars not tin-plated. There shall be no dents/rust on the enclosure.
Construction & Dimensions	Enclosure design not in accordance with the drawings. Component missing, improper fittings or not fulfilling Dimensional requirements.
Markings	Markings/ name plate is incomplete or missing.

11.22.2 Galvanizing Test of Nuts & Bolts and Earthing Terminal

Nuts, bolts, DA bolts and washers shall be tested in accordance with WAPDA Specification P-82:81 (amended to-date)

11.22.3 Bus bar Test

Copper Bus bars shall have electrical conductivity of 98% IACS and Tin coating of 20microns.

11.22.4 Bakelite/polymer Insulation Tests

Bakelite/polymer insulator shall withstand 8kV (min) for one minute.

11.22.5 Temperature rise test

The temperature rise test shall be carried out on completely assembled APMS enclosure according to IEC 61439-1

11.22.6 IP class test

The verification of IP class (IPx5) shall be tested according to IEC 60529.

11.22.7 Paint Thickness test

Paint thickness shall be tested using paint thickness gauge and it shall not be less than 0.100mm minimum at any point on surface.

11.23 4x double arming bolts DA-14 (As per PD 56b) along with 2X powder coated channels (As per drawing) for mounting arrangement shall be provided along with the enclosure by APMS manufacturer.

12. APMS-OTL

12.1 In case of APMS-***-OTL, followings conditions are to be met by sensor and controller:

Parameter	Requirement
Operating Temperature Range of sensor	-20 °C to + 125 °C
Temperature Accuracy of sensor	Minimum ± 2 °C (or class C or better)
Pressure Withstand of sensor	Minimum 6 PSI continuous (Part inside transformer). 15 PSI (30 minutes)
Sensor IP class	IP65
Controller enclosure IP Class (if used)	IP54





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Oil Compatibility	Parts inside transformer must be compatible with transformer mineral oil
Max power consumption of sensor & controller (if used)	≤ 5 W
Protection requirements (for controller)	Reverse polarity protection Overvoltage protection (120% of Un)
Protection breaker (for controller if used)	≤ 1 A
PCB requirement (controller)	Conformal coating
Environmental compliance	IEC 60068-2-2 (Dry Heat test)

- 12.2 The sensor assembly shall be installed through the transformer oil filling plug and shall fit the oil plug arrangement specified in DDS-84:2020 without modification to the transformer tank.
- 12.3 Sensor installation shall ensure oil sealing using oil resistant gasket compatible with transformer mineral oil
- 12.4 Manufacturer shall define:
- Low Oil Level Alarm Point
 - Normal Oil Level Recovery Point
- 12.5 In case of sensor failure, wiring disconnection or controller malfunction, APMS shall generate a sensor fault event.
- 12.6 Temperature sensor accuracy shall be ± 2 °C or as per class C or better.
- 12.7 Installation of the sensor shall not reduce BIL of transformers. Transformers shall remain compliant with IEC 60076-3.
- 12.8 The external sensor wiring (pilot wires) connecting the Oil Temperature and Oil Level Sensor Assembly to the APMS/SMCD shall be provided in the form of a robust flexible capillary-type conduit/tubing (5 meters). The capillary conduit shall be metallic, flexible and mechanically protected. It should come inside APMS enclosure from below through a suitable gland.
- 12.9 The sensor assembly/body should be grounded with transformer body (1.5-meter flexible copper wire of 6mmsq shall also be provided).





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13. FUNCTIONAL REQUIREMENTS OF APMS

- 13.1 This specification covers minimum level of functional requirements for design, materials, manufacturing, testing and performance of APMS for 25 kVA, 50 kVA, 100 kVA, 200 kVA, 250 kVA, 400 kVA, 500 kVA and 630 kVA rated Distribution transformers.
- 13.2 APMS shall have functional characteristics as mentioned in clause 13.3 to 13.11.
- 13.3 It shall communicate all metering data and events as per latest specifications and must be stored inside meter which will be communicated to HES/MDM upon connection as per requirement (As per clause 17.1).
- 13.4 It shall be able to record, report and perform following switching operations of MCCB or Magnetic Contactor (as per respective ordering code requirements) i.e., disconnection/reconnection:
- Operation Remotely through Head-End / MDM
 - Operation through SMCD (Independent of Head-End System / MDM)
 - Operation through local electrical means (Push buttons)
 - Operation through local mechanical means (Toggle/Operating Handle) only for MCCB.
- 13.5 It shall record, report and perform specified functions against following abnormal conditions through Head-End / MDM for testing purposes, range of testing values are specified with each condition:
- Over Voltage (up to 20%, higher than Transformer rated voltage)
 - Under Voltage (up to 20%, lower than Transformer rated voltage)
 - Phase Over Current (up to 20%, higher than per phase rated current)
 - Overload Condition (up to 20%, higher than Transformer rated load)
 - Voltage Unbalance (up to 20%, of Transformer rated voltage between phases)
 - Current Unbalance (up to 20%, of per phase rated current between phases)
 - High Apparent Power (up to 20%, higher than Transformer rated kVA rating)
 - High Temperature (100°C)
 - Low Oil Level (binary values)
 - Sensor fault (binary values)





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- 13.6 Write provision for two (02) setting levels i.e., Alarm and Tripping against conditions specified in Clause 13.5, Sr. No. (a to d & h) shall be available. For conditions specified in Clause 13.5, Sr. No. (e to g & i to j) write provision for one (01) setting level i.e., Alarm shall be available.
- 13.7 Threshold values of these Alarm and Tripping functions and their corresponding time settings shall be user programmable from Head-End system/MDM. Alarm and Tripping shall occur based on these threshold values. Default Values against different parameters mentioned in clause 7.8 shall be provided by the respective utility/DISCO at the time of placing purchase order.
- 13.8 Performing Load shedding according to preset time schedule shall be provided.
- 13.9 SMCD shall be programmed bi-directional by default (in white color).
- 13.10 Tripping events shall be recorded and reported for short circuit and Residual protection (for ordering codes APMS-CB).
- 13.11 The APMS with OTL feature shall:
- Measure transformer oil temperature
 - Monitor transformer oil level
 - Generate alarms for sensor fault condition
 - Transmit parameters to backend system
 - Integrate with HES and MDM systems
 - All sensors shall have temperature accuracy certificate from ISO/IEC17025 Lab and functional test reports on oil level monitoring (OEM/APMS provider).

14. PROTOTYPE APPROVAL

- 14.1 Supplier/manufacturer shall submit one (01) complete APMS unit, technical data and three (03) sets of drawings for prototype approval in the office of Design and Standards, PPMC.
- 14.2 All the testing arrangements including boarding, lodging and daily allowance shall be borne by manufacturer.
- 14.3 All the type testing shall be carried out at an independent accredited laboratory under witnessing of D&S PPMC engineer(s).
- 14.4 Testing Lab instruments should be calibrated from ILAC/PNAC/STL accreditation bodies.
- 14.5 Manufacturers shall submit satisfactory field performance of APMS from end user for renewal of prototype (if product is provided to DISCOs). If no product is provided to DISCOs, prototype test compliance can be submitted.

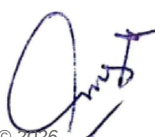




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- 14.6 Following tests shall be performed during prototype testing on complete enclosure: -
- Visual Examination & Verification of dimensions (as per specified drawings)
 - Verification of Components (as per specified drawings)
 - Power Frequency Test of 2.5 kV shall be applied between all four busbars and between ground for one (01) minute.
 - Enclosure Tests as per Clause 11.22.
 - Complete Functionality Tests of APMS as per Clause 13 (10 Nos. operations against each pre-defined operating condition, Normal and abnormal).
- 14.7 The firm shall possess testing setup for functionality tests of APMS including three phase Current Injection set with adjustable features. The routine tests can be performed In-House.
- 14.8 For APMS-OTL, manufacturer shall demonstrate compatibility with DDS-84:2020 (amended to date) oil plug arrangement, successful communication with MDC and compliance with all certification requirements.
- 14.9 Following prototype tests shall be carried out on APMS-OTL sensor and controller assembly only with condition given in clause 14.3.

Sr. No.	Test Name	Standard / Reference	Test Description	Acceptance Criteria
1	Temperature Measurement Accuracy Test	Comparison with calibrated standard	Sensor tested across full operating temperature range	Accuracy within ± 2 °C
2	Oil Level Functional Test	Visual method	Verification of oil level alarm and recovery levels using a small sealed tank	Correct Low Oil Alarm and Normal Recovery Point as per datasheet
3	Pressure Withstand Test	Calibrated pressure Gauge	Sensor exposed to internal pressure conditions using a small sealed tank (simulation of transformer pressure conditions)	Withstand 15 PSI for 30 minutes then 6 PSI for 24hours without leakage
4	IP Class verification Test (Sensor)	IEC 60529	Verification of ingress protection of sensor	Minimum IP65
5	IP Class verification Test (Controller)	IEC 60529	Verification of controller enclosure's IP class	Minimum IP54
7	Environmental Temperature Test	IEC 60068 series	Operation under extreme temperature conditions (temperature range is for part inside transformer.	Reliable operation between -20 °C to $+125$ °C


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			Test to be conducted using a small sealed tank.	
8	Dry Heat Test	IEC 60068-2-2	Controller subjected to elevated temperature	No degradation in performance
9	Power Consumption Test	Power analyser	Measurement of OTL assembly power consumption	≤ 5 Watts

- 14.10 Compatibility certificate is required for sensor assembly with different transformer manufacturers stating that this does not reduce BIL.
- 14.11 Only PPMC approved sensor assemblies shall be used. (protocols attached in Annex-A).
- 14.12 Prototyped APMS-CB-OTL doesn't require re-prototyping for APMS-CB-S. However, APMS-CB-S cannot be used as APMS-CB-OTL unless prototyped so. Likewise, APMS-MC-OTL doesn't require re-prototyping for APMS-MC-S. However, APMS-MC-S cannot be used as APMS-MC-OTL unless prototyped so
- 14.13 For APMS-MC ordering codes, if manufacturer(s) offers their product, the drawings shall be approved as per components and dimensions shall be decided accordingly.
- 14.14 The validity of Prototype approval will be five (5) years unless there is any change in design or as per PPMC Prototype/Type test Policy.
- 14.15 The manufacturer must be ISO-9001 and ISO 14001 certified.

15. MASS PRODUCTION TESTS

Following routine and sample tests shall be performed on APMS

15.1 Routine Tests

The supplier/manufacturer of APMS shall perform following routine tests on each APMS at their premises and shall maintain its proper record to submit on demand: -

- Visual Examination & Verification of dimensions (as per approved drawings)
- Verification of Components (as per approved drawings)
- Power Frequency Test
- Complete Functionality Tests of APMS as per Clause 13.
- For APMS-OTL, following tests are added,





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Sr. No.	Test Name	Test Description	Acceptance Criteria
1	Visual Inspection	Inspection of sensor, controller and enclosure	No physical defects
2	Wiring Inspection	Inspection of internal wiring arrangement	Proper dressing and routing in wiring ducts
3	Functional Test	Verification of sensor output and controller response	Correct readings and signal transmission
4	Alarm Generation Test	Verification of alarm signals	Correct alarm for low oil level and temperature
5	Fail-Safe Test	Simulation of sensor disconnection or failure	Distinct Sensor Fault Alarm generated
6	Communication Test	Verification of data transmission	Successful communication with APMS controller

15.2 Sample Tests

Following sample tests of APMS during mass production shall be carried out by Material Inspection, PPMC:-

- Visual Examination & Verification of dimensions, components (as per approved drawings) and calibration certificates (equipment, sensor assemblies)
- Power Frequency Test (2.5KV)
- Conductivity test of busbars.
- Wiring inspection.
- Fail safe test.
- Communication verification on MDC.
- Paint thickness test (0.100mm minimum at any point on surface)
- Galvanizing test
- Tin plating test. (≥ 20 Microns)
- Bakelite dielectric test. (8kV)
- Alarm generation test

16. SAMPLING, ACCEPTANCE AND REJECTION

16.1 General:

- 16.1.1 All inspections shall be carried out under the supervision of the Purchaser/Inspection Authority (MI, PPMC) unless otherwise specified.

	Asset Performance Management System PPMC-DS-01:2026				
	PPMC-DS-01	1	23-04-2026	23-04-2029	30 of 36
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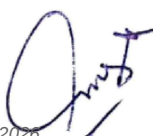
16.1.2 Sample Quantities.

Offered Quantity	No of Samples
Up-to 25	3
Up-to 50	5
Up-to 90	8
Up-to 150	13
Up-to 280	20
Up-to 500	32
Up-to 1200	50
Up-to 3200	80
Up-to 10000	125
Up-to 35000	200

16.2 Inspection & Acceptance Table:

Sr. No.	Test Description	Remarks	Acceptance/rejection
1	Visual Examination & Verification of Dimensions	As per approved drawings	i. If more than one sample fails, then the lot shall be rejected. ii. If only one sample out of the selected samples fails, then re-sampling of double size shall be made. The failure shall be documented and with reasons and acknowledgement from all parties. iii. In case, if any other sample from re-sampling fails, whole LOT shall be rejected and it would be documented and acknowledged by all parties.
2	Power Frequency Test (2.5 kV)	No breakdown or flashover	
3	Complete Functionality Test of APMS along with alarm generation	Full operational verification	
4	Wiring Inspection	Ferruling, termination, routing	
5	Fail Safe Test	Mandatory zero failure	
6	Communication Verification on MDC	Data transmission & integration	
7	Paint Thickness Test	Corrosion protection	
8	Galvanizing Test (1 item from each sample)	Zinc coating compliance	
9	Tin Plating Test ($\geq 20 \mu\text{m}$) (1 item from each APMS)	Conductivity & corrosion	
10	Bakelite Dielectric Test (1 item from each APMS)	No breakdown / puncture	

Note: The rejected sample during first sampling shall be rectified before acceptance of LOT.


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	PPMC-DS-01:2026				
PPMC-DS-01	1	23-04-2026	23-04-2029	31 of 36	
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17. INTEROPERABILITY

17.1 For the purpose of ensuring interoperability, the APMS shall be fully compliant with DLMS/COSEM. Furthermore, for deployments where metering data is managed through the Meter Data Management (MDM) system of Power Information Technology Company, the APMS, associated MDC and communication interfaces shall mandatorily comply with the requirements of the Universal Data Integration Layer (UDIL) latest version and shall be duly certified by PITC ensuring seamless integration, standardized data exchange and avoidance of vendor-specific dependencies.

18. PACKING

Each APMS Unit shall be supplied duly packed to withstand rigors of rail/road transportation. The Glands shall not be damaged. DA bolts, Channels for mounting arrangements shall also be provided. Moreover, it shall be protected against entry of moisture, rainwater and dust by covering with suitable bubble wrap sheet.

19. WARRANTY

- 19.1 The complete APMS, including all associated components such as MCCB, SMCD, Magnetic Contactor, OTL sensor assembly, and enclosure (as applicable per the ordering code), shall be warranted for a period of five (05) years from the date of supply or completion of the specified duty cycles (for MCCB and Magnetic Contactor), whichever comes earlier. In the absence of recorded duty cycle data, the warranty period shall be considered five (05) years from the date of supply.
- 19.2 During the warranty period, the manufacturer/supplier shall be responsible for rectification or replacement of any defective components arising due to design, material or workmanship issues at no additional cost to the purchaser. The fault evaluation report shall jointly be made with representative of DISCO, MI and D&S to ascertain the root cause.
- 19.3 The warranty shall cover all electrical, mechanical and communication components including battery performance as per specified operational life.





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Annex – A

PPMC APPROVAL PROTOCOL FOR SENSOR ASSEMBLY

A- Type Approval (Mandatory Before OTL Prototype for OTL OEM)

Documents Required:

1. Design drawings
2. Mounting arrangement (DDS-84 compatibility)
3. Material specifications
4. Calibration procedure

Type Tests (Mandatory)

Test	Standard	Purpose
Accuracy test ($\pm 2^{\circ}\text{C}$) (Sensor & controller)	ISO/IEC 17025	Standard governing calibration of equipment against a traceable reference standard.
Pressure test (6 PSI / 15 PSI)	DDS-84:2020 (to date)	Tank conditions
Temperature endurance (-20 to 125°C)	IEC 60068-2-1 / 2-2	Environmental suitability (correct readings)
IP test (IP65)	IEC 60529	Dust + water protection
Vibration test	IEC 60068	Field robustness

Impulse test (with sensor installed) on at-least 2x Transformers (25kVA) of different manufacturers or as per D&S PPMC requirements	IEC 60076-3
Functional test (low level / high temp alarms)	Operational
Fitment verification	OEM certification

PPMC APPROVAL PROTOCOL FOR CONTROLLER (if used)

Test	Standard	Purpose
Power consumption	IEC 60076-22-1 <5Watts	Efficiency
Dry heat test	IEC 60068-2-2	Thermal endurance
IP test (IP54)	IEC 60529	Enclosure protection
EMC test	IEC 61000 series	Interference immunity

Note: All tests shall be performed at an independent Lab





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	Document No.	Version	Date of Revision	Next Revision	Page No.

Annex-B

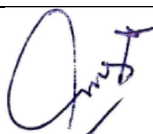
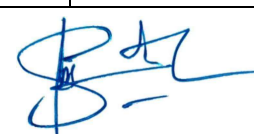
SCHEDULE OF TECHNICAL DATA

1. APMS:

Sr. No.	Description	Offered Value	Compliance	Remarks
1	Manufacturer Name			
2	Type / Model / Designation			
3	Applicable Standards (DDS / IEC)			
4	Rated Voltage (V)			
5	Rated Frequency (Hz)			
6	APMS Rating (25/50/100/200/400/630 kVA)			
7	Degree of Protection (Enclosure IP)			
8	Ambient Temperature Range			
9	Maximum Altitude			
10	Functional Compliance (as per Clause 13)			
11	Alarm & Tripping Logic Details			
12	Field Performance Evidence			
13	Compliance with PPMC-DS-01:2026			
14	Weight			

2. MCCB MOTORIZED WITH EARTH LEAKAGE PROTECTION.

Sr. No.	Description	Offered Value	Compliance	Remarks
1	Manufacturer Name			
2	Model / Frame Size			
3	Standard (IEC 60947-2) compliance			
4	Rated Voltage (V)			
5	Rated Current (In)			
6	Number of Poles (3P / 3P+N)			
7	Breaking Capacity (Icu, kA)			
8	Service Breaking Capacity (Ics, % of Icu)			
9	Making Capacity (Icm)			
10	Thermal Setting Range (Ir)			
11	Magnetic Setting Range (Im)			
12	Short Time Delay (if applicable)			
13	Residual Protection (Yes/No, value)			

	Asset Performance Management System PPMC-DS-01:2026				
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14	Type of Trip Unit (Thermal-Magnetic / Electronic)			
15	Motorized Operation (Yes/No)			
16	Auto/Manual Mode Availability			
17	Auxiliary Contacts / Communication Interface			
18	Mechanical Endurance			
19	Electrical Endurance			
20	Type Test Reports (ILAC Lab)			
21	Compliance with PPMC-DS-01:2026			
22	Weight			

3. MCCB NON-MOTORIZED.

Sr. No.	Description	Offered Value	Compliance	Remarks
1	Manufacturer Name			
2	Model / Frame Size			
3	Standard (IEC 60947-2) compliance			
4	Rated Voltage (V)			
5	Rated Current (In)			
6	Number of Poles (3P)			
7	Breaking Capacity (Icu, kA)			
8	Service Breaking Capacity (Ics, % of Icu)			
9	Making Capacity (Icm)			
10	Thermal Setting Range (Ir)			
11	Magnetic Setting Range (Im)			
14	Type of Trip Unit (Thermal-Magnetic / Electronic)			
18	Mechanical Endurance			
19	Electrical Endurance			
20	Type Test Reports (ILAC Lab)			
21	Compliance with PPMC-DS-01:2026			
22	Weight			





	Asset Performance Management System PPMC-DS-01:2026				
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4. MAGNETIC CONTACTOR

Sr. No.	Description	Offered Value	Compliance	Remarks
1	Manufacturer Name			
2	Model / Type			
3	Standard (IEC 60947-4-1)			
4	Rated Operational Voltage (V)			
5	Rated Frequency (Hz)			
6	Rated Current (AC 6a duty)			
7	Utilization Category (AC 6a)			
8	Coil Voltage (V)			
9	Mechanical Endurance (operations)			
10	Electrical Endurance (AC 6a duty)			
11	Making Capacity			
12	Breaking Capacity			
13	Surge Protection (RC / MOV)			
14	Electrical Interlocking with MCCB			
15	Coordination Type (Type 2)			
16	Type Test Reports (ILAC Lab)			
17	Compliance with PPMC-DS-01:2026			
18	Weight			

5. SMCD

Sr. No.	Description	Offered Value	Compliance	Remarks
1	Manufacturer Name			
2	Model / Type			
3	Standards (DDS-50, 98, 110 / IEC 62052/53) compliant			
4	Accuracy Class (kWh / kVARh)			
5	Communication Technology			
6	DLMS/COSEM Compliance (Yes/No)			
7	Optical Port Availability			
8	Auxiliary Ports (MCCB Interface)			
9	Battery Type & Capacity			
10	Battery Backup Duration			
11	RTC Backup (Supercapacitor)			
12	Event Logging Capacity			
13	Alarm & Trip Configurability			
14	Remote Operation Capability			
15	Firmware Upgrade Capability			





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16	PTA Compliance (for communication)			
17	Type Approval (PPMC)			
18	DLMS Certification Attached			
19	Weight			

6. OTL (OIL TEMPERATURE & LEVEL ASSEMBLY)

Sr. No.	Description	Offered Value	Compliance	Remarks
1	Manufacturer Name			
2	Model / Type			
3	Applicable Standards (IEC 60751, IEC 60068, IEC 60529)			
4	Temperature Measurement Range (°C)			
5	Temperature Accuracy (± °C)			
6	Drift over Time			
7	Oil Level Detection Method			
8	Pressure Withstand (PSI)			
9	Sensor IP Rating			
10	Controller IP Rating			
11	Operating Temperature Range			
12	Power Consumption			
13	Mounting Arrangement (DDS-84 compatible)			
14	Fail-Safe Feature (Yes/No)			
15	Calibration Certificate (ISO/IEC 17025 lab)			
16	Type Test Reports			
17	Transformer Compatibility Certificate			
18	PPMC Approval Status			
19	Weight			





LIST OF DRAWINGS

Sr No.	Drawing No.	Drawing Title
01	APMS/PPMC/D&S/01	Enclosure Unit for 25/50/100 kVA
02	APMS/PPMC/D&S/02	Enclosure Unit for 200/250 kVA
03	APMS/PPMC/D&S/03	Enclosure Unit for 400/500,630 kVA
04	APMS/PPMC/D&S/04	Internal Components Arrangement
05	APMS/PPMC/D&S/05	Base Plate for 25/50/100 kVA
06	APMS/PPMC/D&S/06	Base Plate for 200/250 kVA
07	APMS/PPMC/D&S/07	Base Plate for 400/500,630 kVA
08	APMS/PPMC/D&S/08	Air Vent for 25/50/100 kVA
09	APMS/PPMC/D&S/09	Air Vent for 200/250,400/500,630 kVA
10	APMS/PPMC/D&S/10	Meter Support Channel
11	APMS/PPMC/D&S/11	Rating Plate
12	APMS/PPMC/D&S/12	Earthing Terminal
13	APMS/PPMC/D&S/13	Current Transformer
14	APMS/PPMC/D&S/14	Insulator
15	APMS/PPMC/D&S/15	Circuit Diagram with magnetic Contactor
16	APMS/PPMC/D&S/16	Circuit Diagram with magnetic Contactor
17	APMS/PPMC/D&S/17	Magnetic Contactor Arrangement
18	APMS/PPMC/D&S/18	Tolerance Sheet

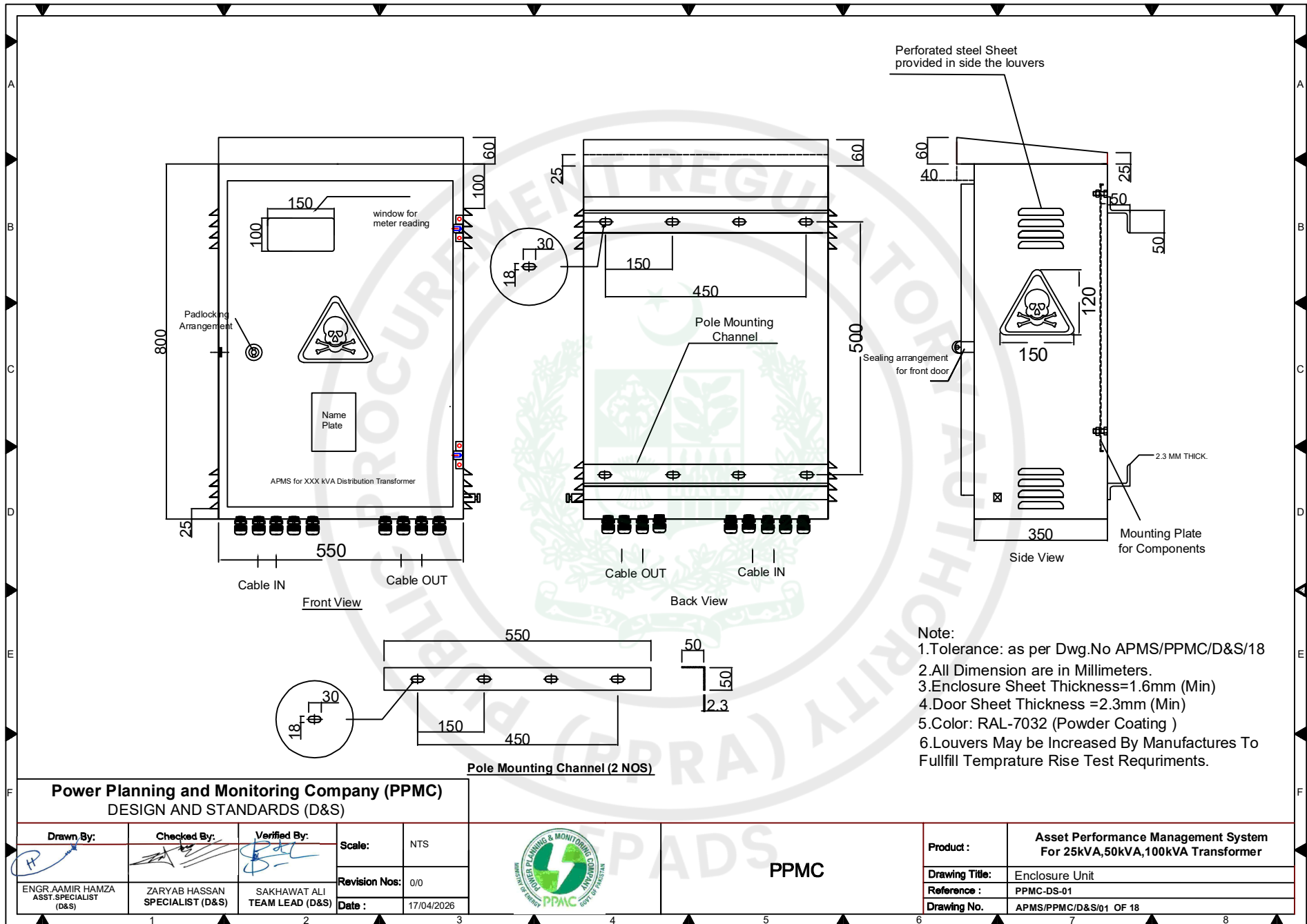
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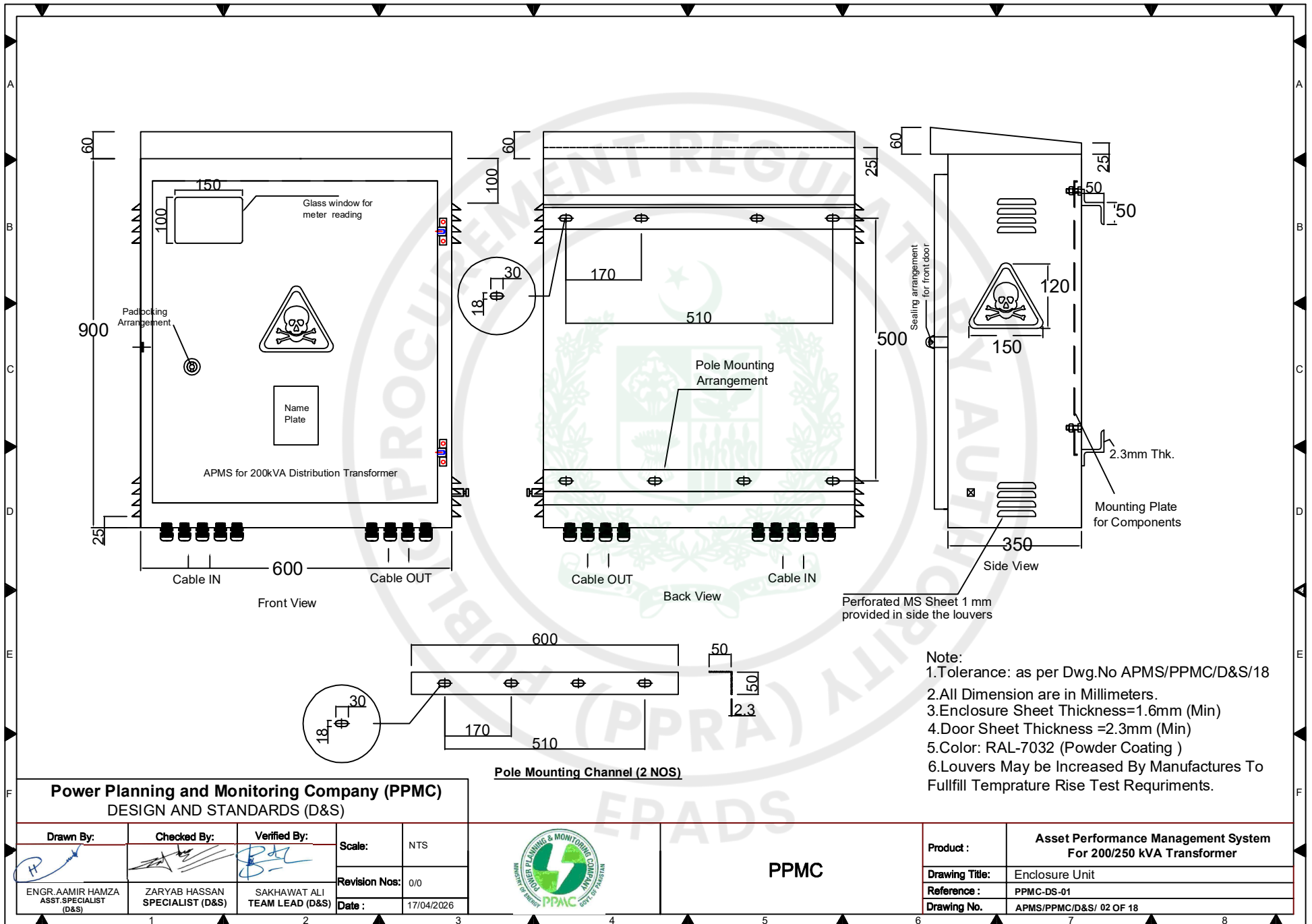
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			Date :	17/04/2026

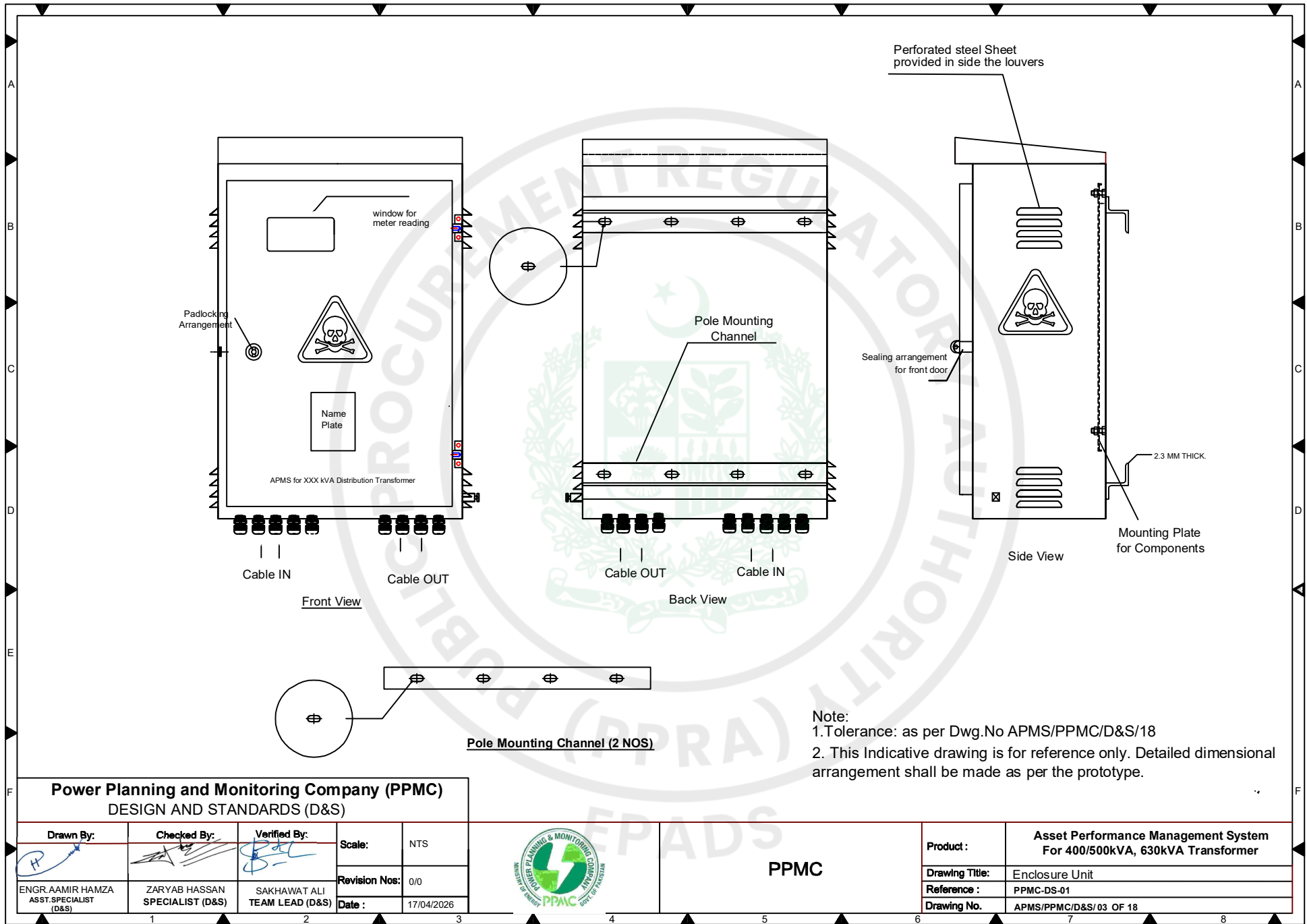


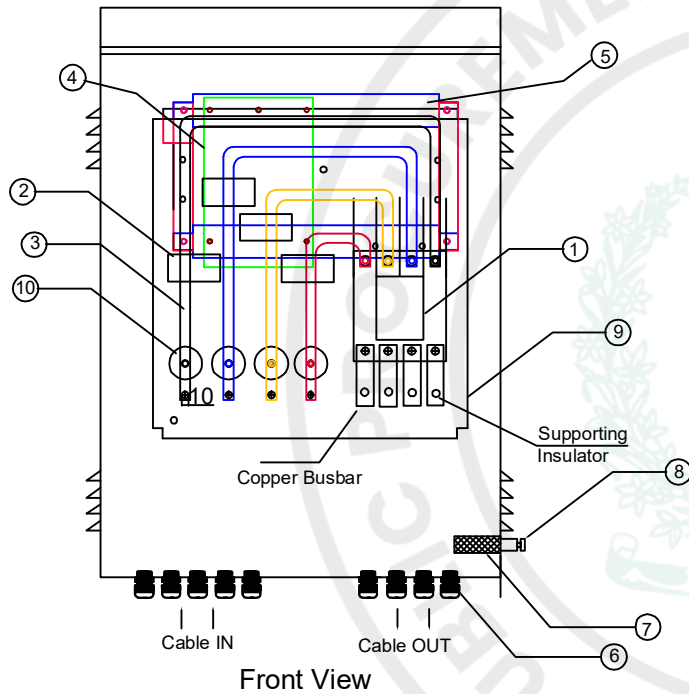
PPMC

Product :	Asset Performance Management System For 25kVA,50kVA,100kVA,200/250kVA,400/500kVA and 630kVA Transformer
Drawing Title:	LIST OF DRAWINGS
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/ 00 OF 18









LEGEND

- 1- MCCB
- 2- LT CTs
- 3- Copper Bus Bars
- 4- Smart Metering and Control Device
- 5- Channel for Meter Support
- 6- Cable Glands
- 7- Copper braided wire for door earthing
- 8- Earthing Terminal
- 9- Mounting Plate for Components
- 10- Busbar Support Insulators

Note:
 1. Tolerance: as per Dwg.No APMS/PPMC/D&S/18
 2. Detailed dimension and Holes Position shall be as per approved Prototype

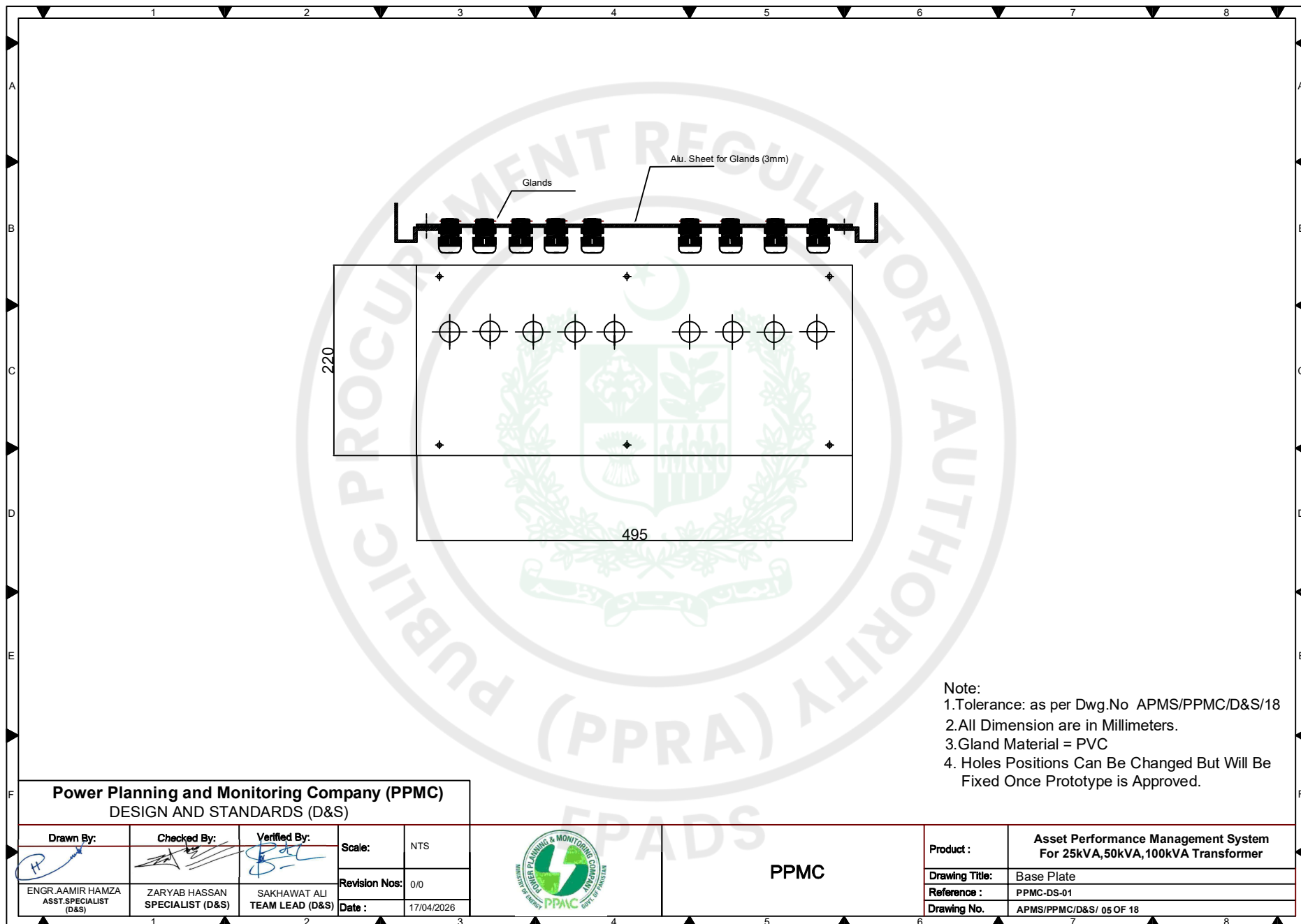
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			Date :	17/04/2026



PPMC

Product :	Asset Performance Management System For 25kVA, 50kVA, 100kVA, 200/250kVA, 400/500kVA and 630kVA Transformer
Drawing Title:	Internal Components Arrangement
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/ 04 OF 18



- Note:
- 1.Tolerance: as per Dwg.No APMS/PPMC/D&S/18
 - 2.All Dimension are in Millimeters.
 - 3.Gland Material = PVC
 4. Holes Positions Can Be Changed But Will Be Fixed Once Prototype is Approved.

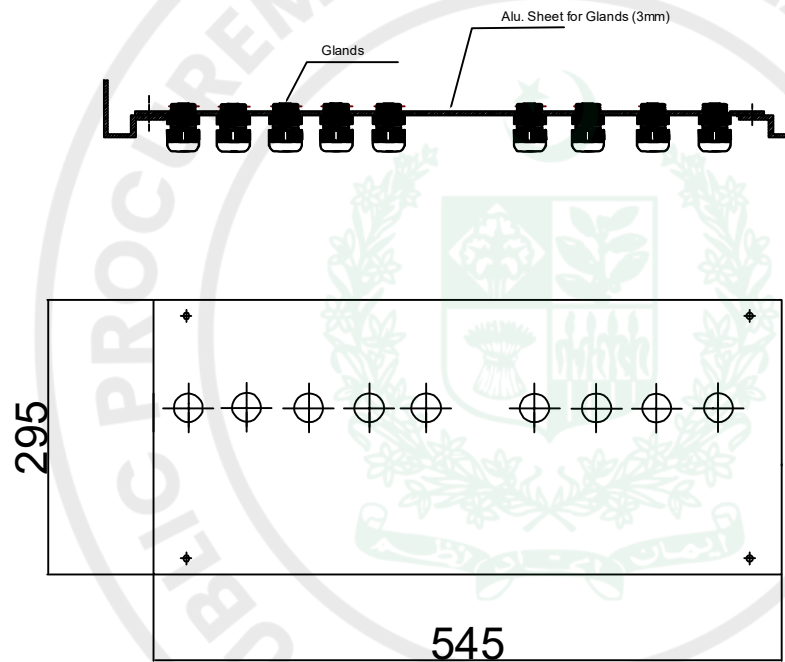
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DESIGN AND STANDARDS (D&S)

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			Date :	17/04/2026



PPMC

Product :	Asset Performance Management System For 25kVA,50kVA,100kVA Transformer
Drawing Title:	Base Plate
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/ 05 OF 18



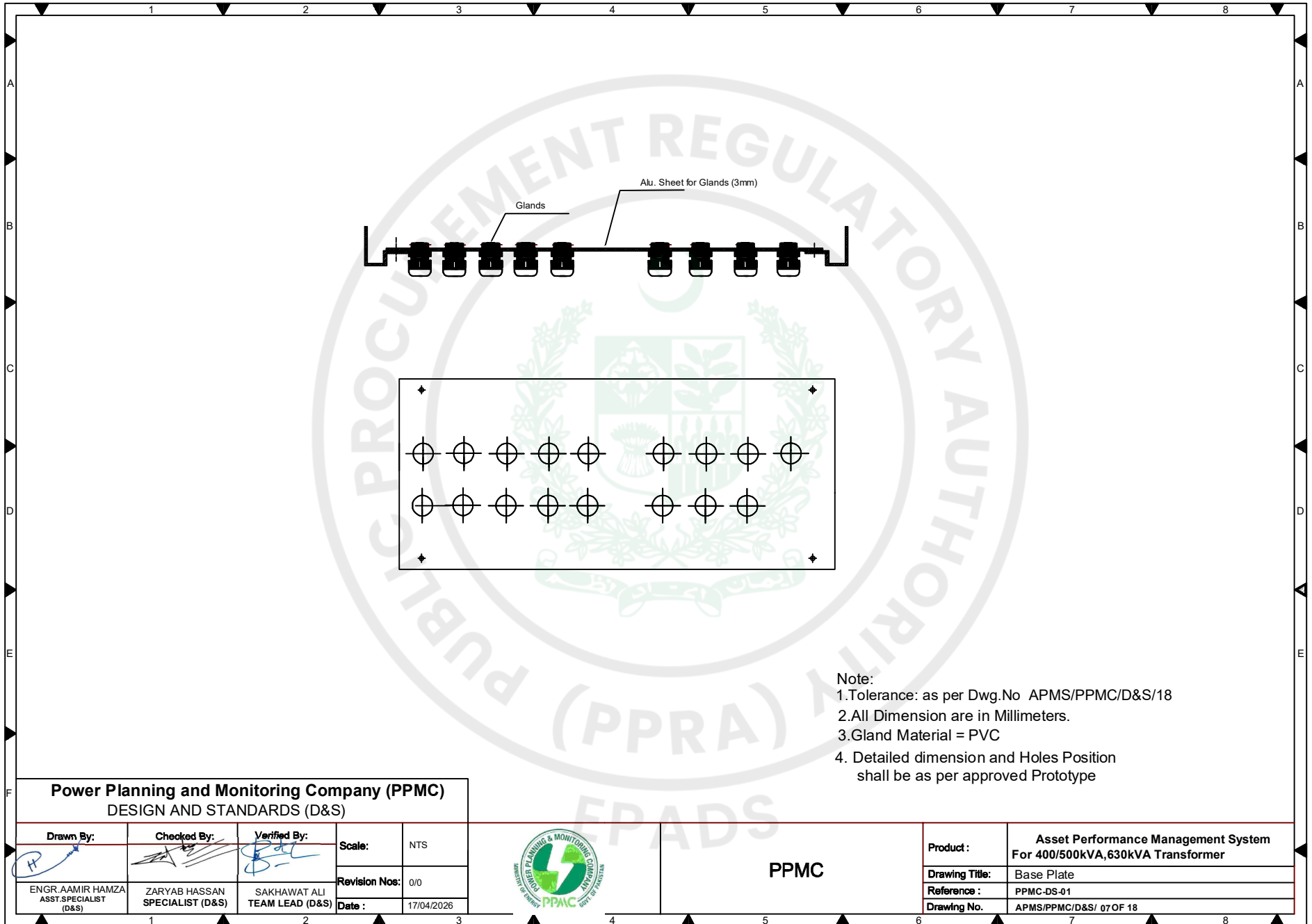
- Note:
- 1.Tolerance: as per Dwg.No APMS/PPMC/D&S/18
 - 2.All Dimension are in Millimeters.
 - 3.Gland Material = PVC
 4. Holes Position Can Be Changed But Will Be Fixed Once Prototype is Approved.

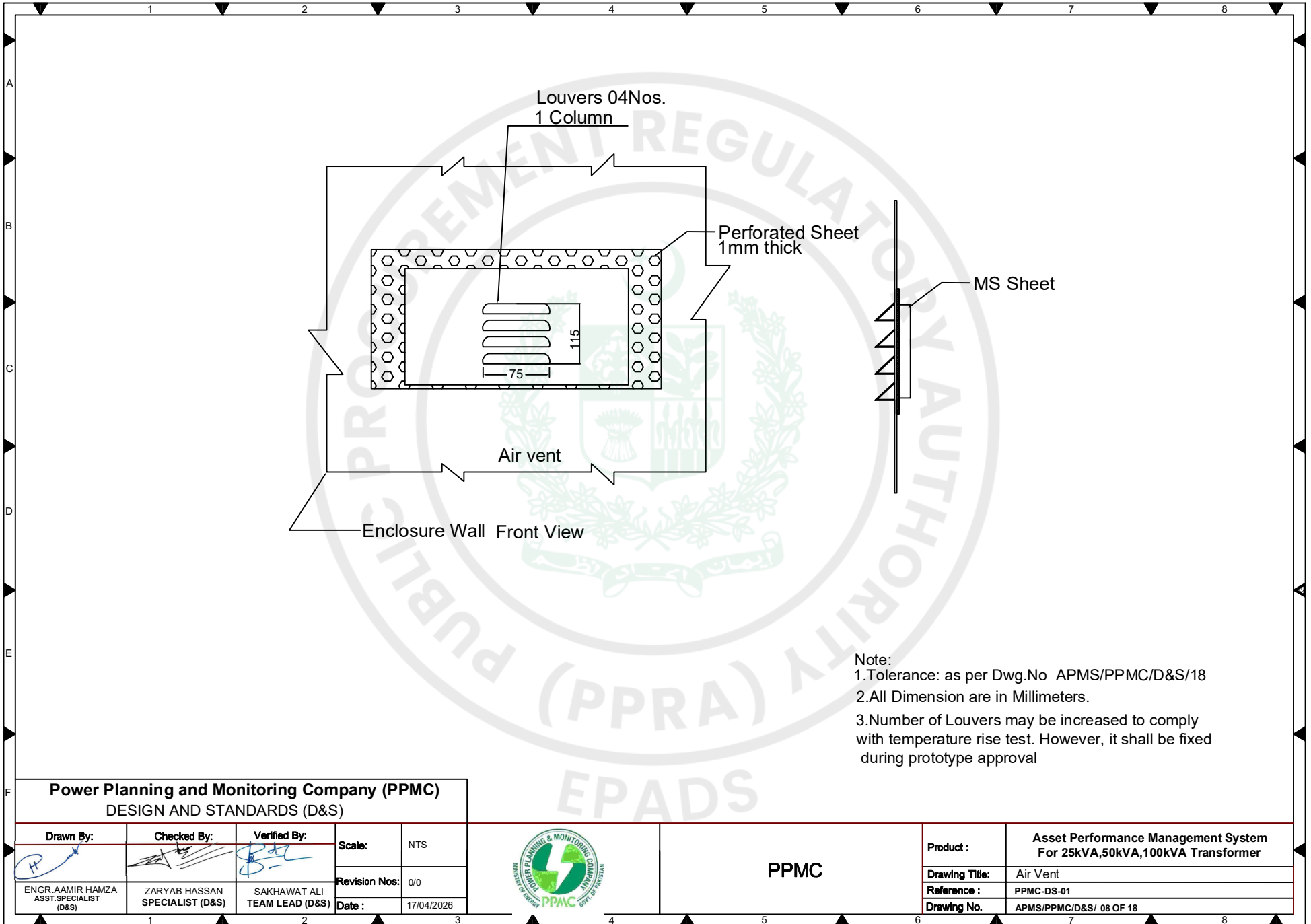
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			Revision Nos: 0/0
			Date : 17/04/2026



PPMC

Product :	Asset Performance Management System For 200/250kVA Transformer
Drawing Title:	Base Plate
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/06 OF 18





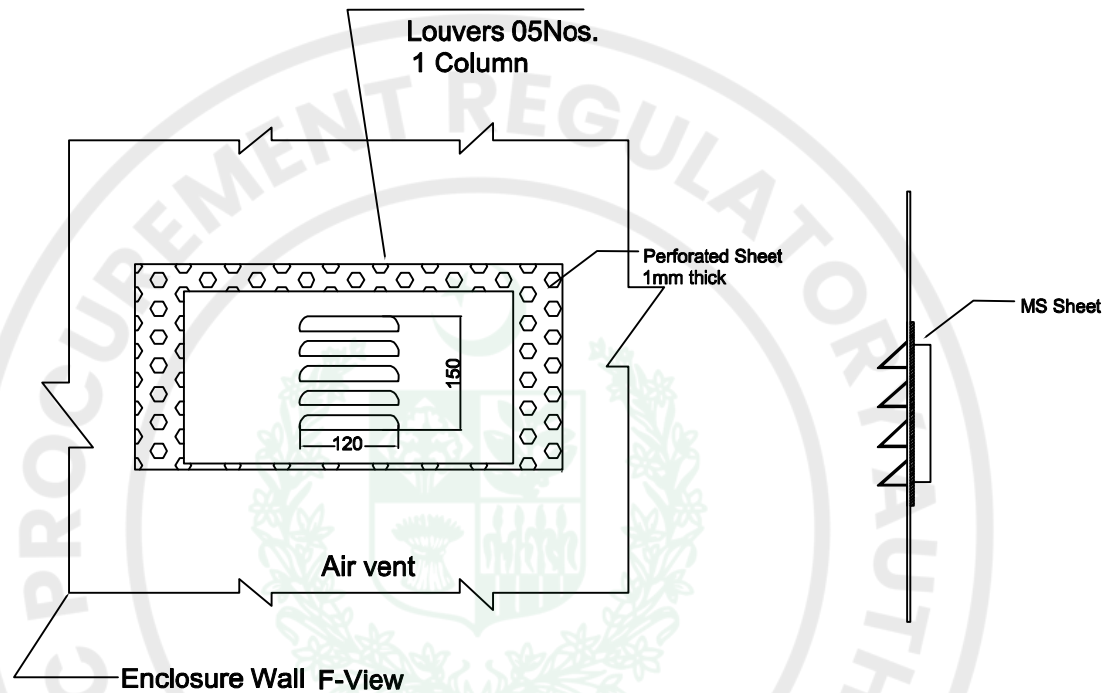
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DESIGN AND STANDARDS (D&S)

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ENGR. AAMIR HAMZA ASST. SPECIALIST (D&S)	ZARYAB HASSAN SPECIALIST (D&S)	SAKHAWAT ALI TEAM LEAD (D&S)	Revision Nos:	0/0
			Date :	17/04/2026



PPMC

Product :	Asset Performance Management System For 25kVA,50kVA,100kVA Transformer
Drawing Title:	Air Vent
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/ 08 OF 18



- Note:
- 1.Tolerance: as per Dwg.No APMS/PPMC/D&S/18
 - 2.All Dimension are in Millimeters.
 - 3.Number of Louvers may be increased to comply with temperature rise test. However, it shall be fixed during prototype approval

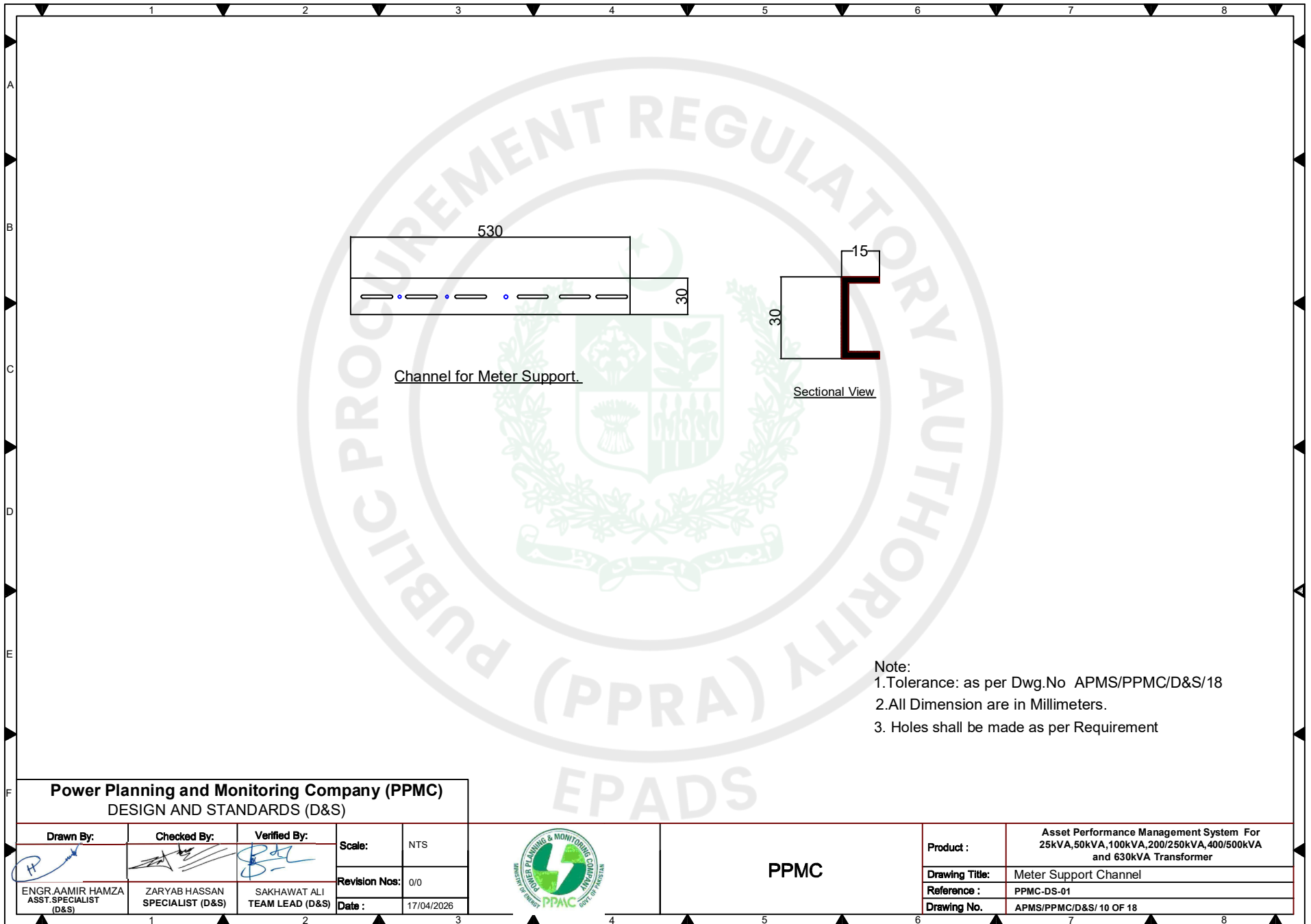
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			Date :	17/04/2026



PPMC

Product :	Asset Performance Management System For 200/250kVA,400/500kVA,630kVA Transformer
Drawing Title:	Air Vent
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/ 09 OF 18



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Asset Performance Management System For XXX kVA Transformer Ordering Code-	
Sr No. Rated Voltage 415/240 V Rated Current MCCB Rating CT. Ratio	P.O No P.O Date Warranty Expiry Date Manufactured For Year of Manufacturing
MANUFACTURER NAME	

Note:

Following Information Will Be In-Corporated In The Name Plate if There is Any Additional Requirement By The Customer (height maybe increased to 135 mm if needed :

1. Magnetic contactor Rating (A)
2. Manufacturer of OTL (for OTL ordering codes only)
3. Low Oil level and Normal Recovery Point (for OTL ordering codes only)

Note:

- 1.Tolerance: as per Dwg.No APMS/PPMC/D&S/18
- 2.All Dimension are in Millimeters.
- 3.Material: Non Magnetic SS-316 Sheet/ Aluminium Powder Coated Plate
- 4.Thickness 0.5mm

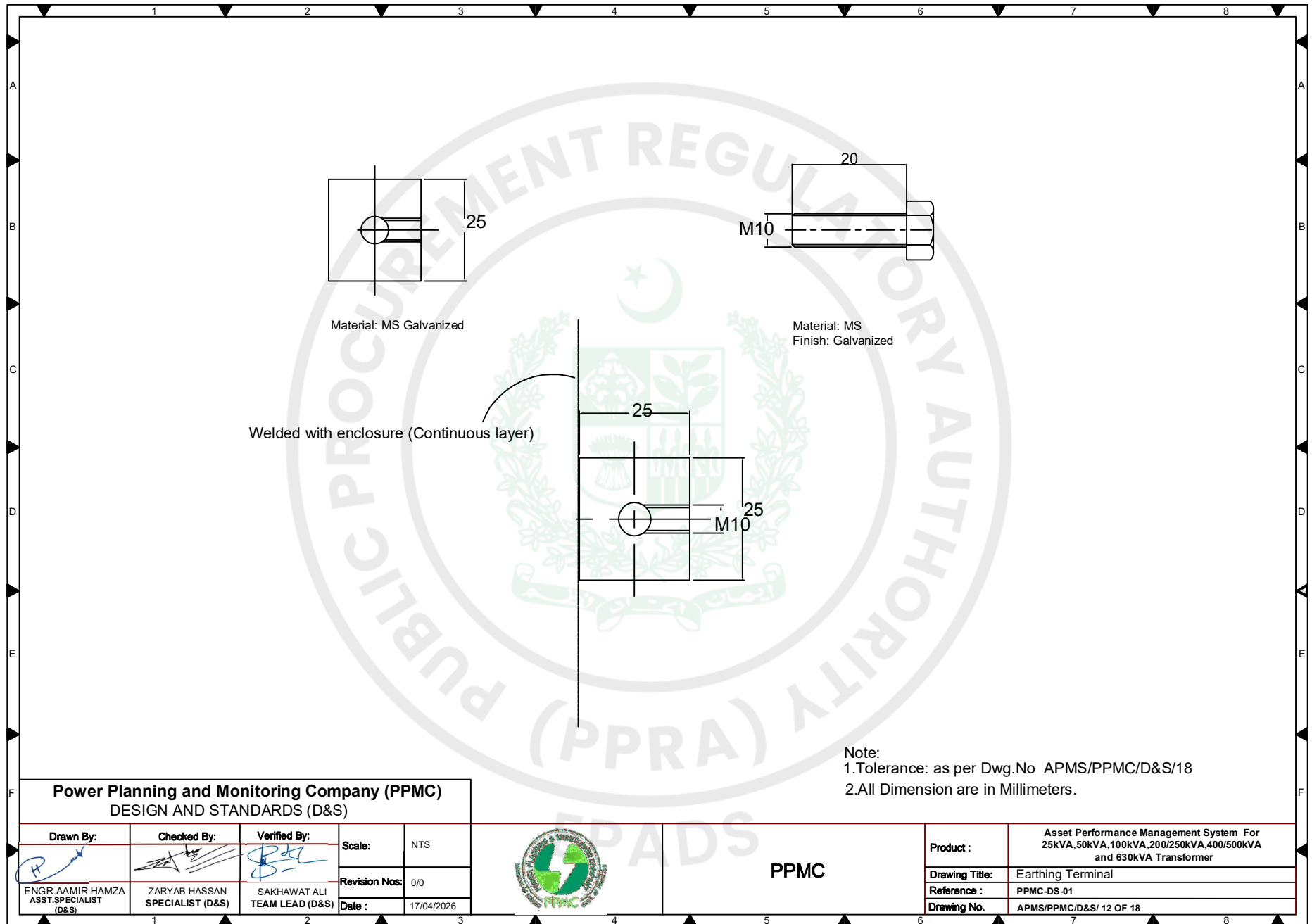
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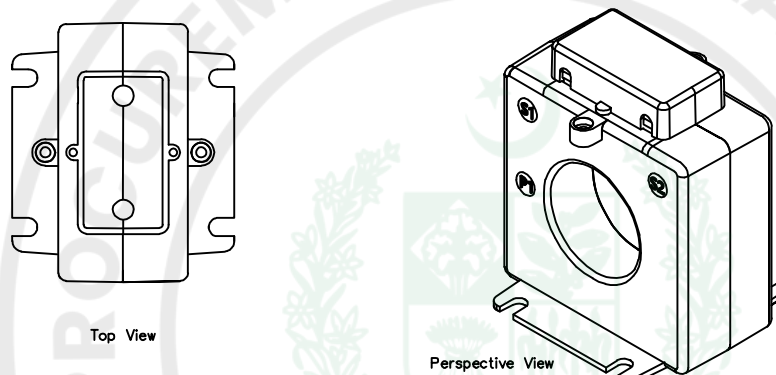
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			Date :	17/04/2026



PPMC

Product :	Asset Performance Management System For 25kVA,50kVA,100kVA,200/250kVA,400/500kVA and 630kVA Transformer
Drawing Title:	Rating Plate
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/11 OF 18





Terminal Markings



NOTE:

1. TERMINAL MARKINGS
 - a. Primary P1,P2
 - b. Secondary S1,S2
2. Dimensions shall be fixed according to the approved Prototype

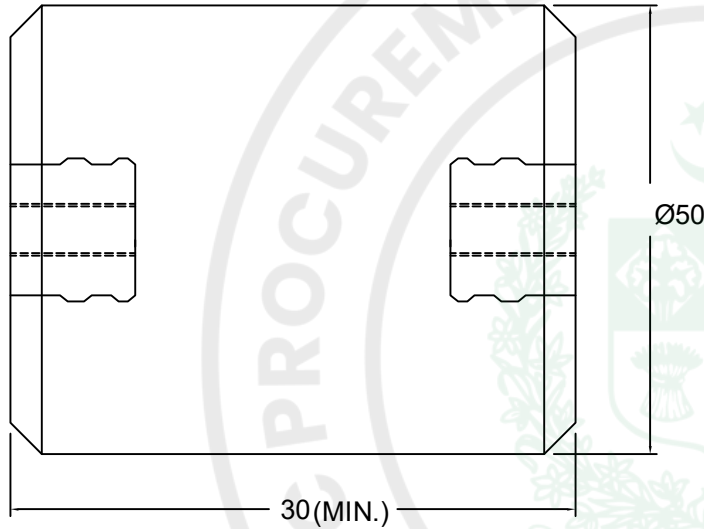
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DESIGN AND STANDARDS (D&S)

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			Date :	17/04/2026



PPMC

Product :	Asset Performance Management System For 25kVA,50kVA,100kVA,200/250kVA,400/500kVA and 630kVA Transformer
Drawing Title:	Current Transormer
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/ 13 OF 18



Material: Bakelite/Polymer

Note:

- 1.Tolerance: as per Dwg.No APMS/PPMC/D&S/18
- 2.All Dimension are in Millimeters.
- 3.Spacers maybe used by manufacture for Adjustment Purpose

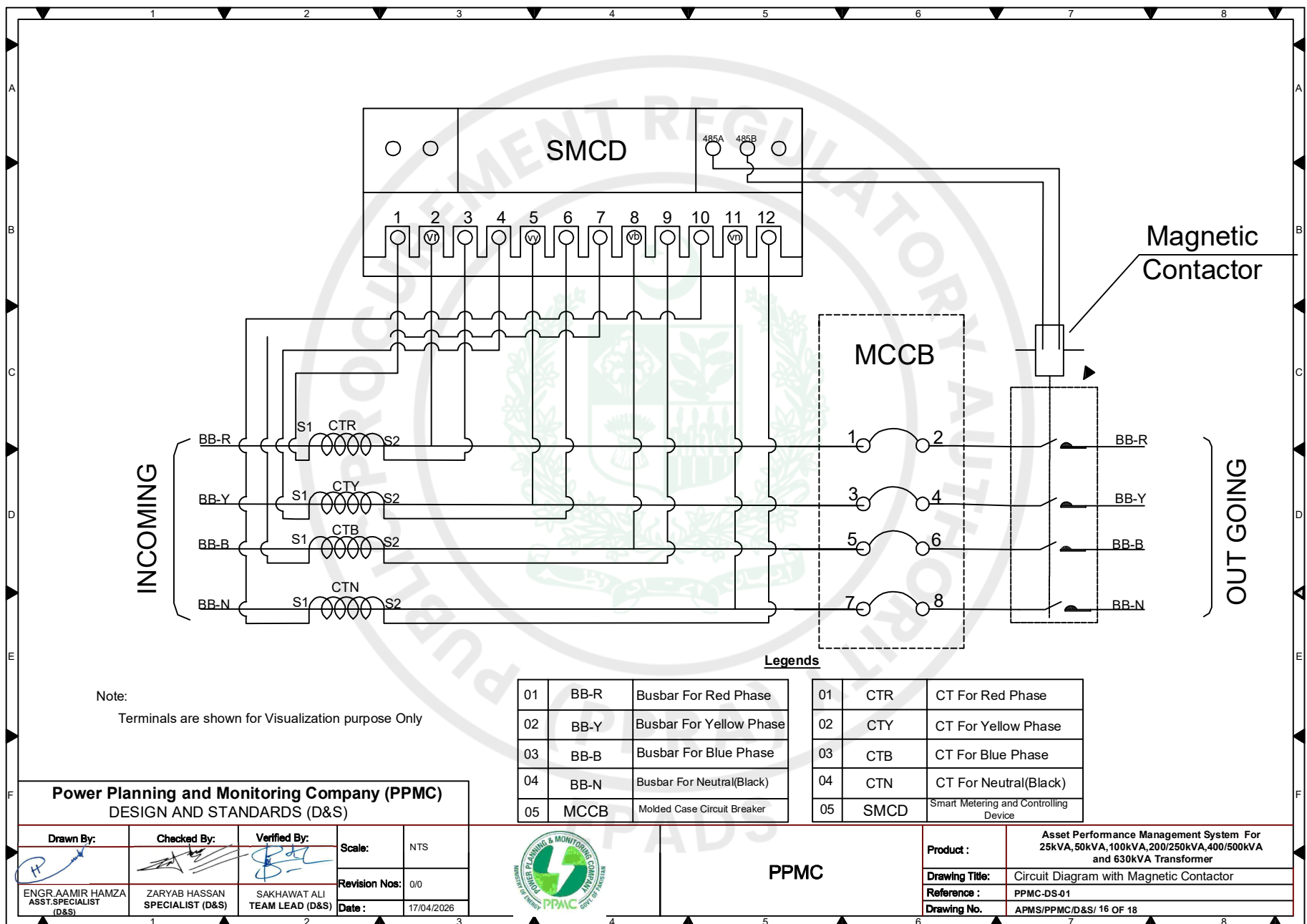
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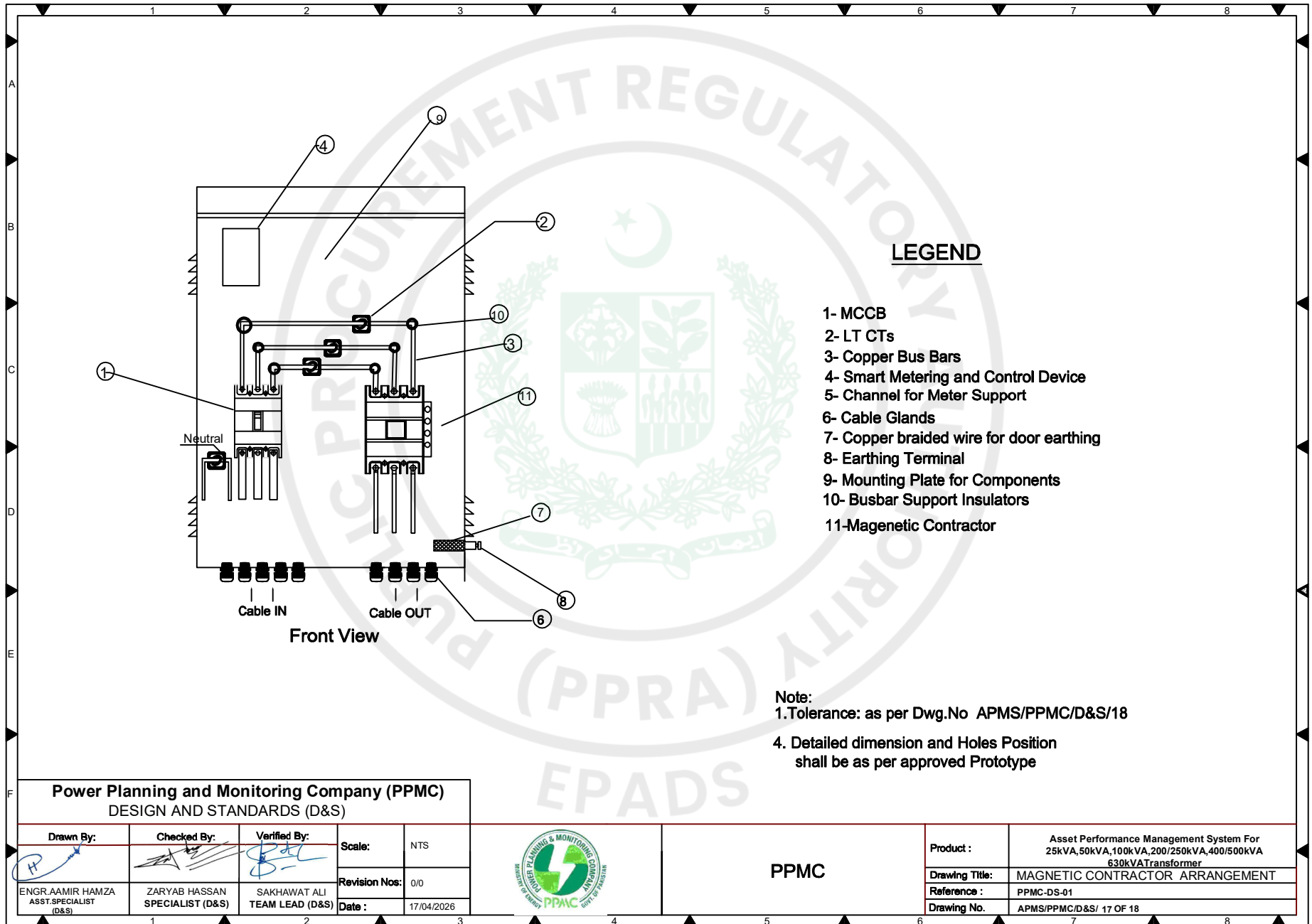
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PPMC

Product :	Asset Performance Management System For 25kVA,50kVA,100kVA,200/250kVA,400/500kVA and 630kVA Transformer
Drawing Title:	Insulator
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/14 OF 18





Tolerance Sheet

Tolerance in Dimensions

DIMENSION RANGE

1.0mm To 10mm
11mm To 55mm
56mm To 75mm
76mm & Above

TOLERANCE

±10.0%
±5.0%
±3.0%
±2.0%

Power Planning and Monitoring Company (PPMC)
DESIGN AND STANDARDS (D&S)

Drawn By: 	Checked By: 	Verified By: 	Scale:	NTS
ENGR. AAMIR HAMZA ASST. SPECIALIST (D&S)	ZARYAB HASSAN SPECIALIST (D&S)	SAKHAWAT ALI TEAM LEAD (D&S)	Revision Nos:	0/0
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PPMC

Product :	Asset Performance Management System For 25kVA, 50kVA, 100kVA, 200/250kVA, 400/500kVA and 630kVA Transformer
Drawing Title:	Tolerance Sheet
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/18 OF 18