

Standard Bidding Document

Proc: of Supply, Installation, Testing & Commissioning of Asset
Performance Management System (APMS) on revised PPMC spec
No.PPMC-DS-01:2026 & its Configuration & Interfacing with AMI system
as per SoR (Rs.1,347 M) incl: 18% GST & 16% PST in IESCO
(Works)

National

Single Stage-Two Envelope

CORRIGENDUM # 1	CORR-P105796-001
Initiation Date	October 06, 2026



October 06, 2026

*IESCO-PMU (Islamabad Electric Supply Company (IESCO)), Director
PMU Office Adjacent to 132 KV Rawal Grid Station, Club Road, Kashmir Chowk, Islamabad Capital Territory
Phone: +92-319-599-2205, Email: iescopmu@iesco.com.pk*

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REQUEST FOR BIDS

PROCUREMENT OF CIVIL WORKS

1. The **IESCO-PMU (Islamabad Electric Supply Company (IESCO))** has reserved Funds for the procurement planned for FY **2026-27**. The **IESCO-PMU (Islamabad Electric Supply Company (IESCO))** intends to apply part of the proceeds of this Fund to cover eligible payments under the contract for the "**Proc: of Supply, Installation, Testing & Commissioning of Asset Performance Management System (APMS) on revised PPMC spec No.PPMC-DS-01:2026 & its Configuration & Interfacing with AMI system as per SoR (Rs.1,347 M) incl: 18% GST & 16% PST in IESCO**" with the reference of "**P105796**".

2. The **IESCO-PMU (Islamabad Electric Supply Company (IESCO))** invites electronic Bids from eligible Bidders for procurement of Works (**Proc: of Supply, Installation, Testing & Commissioning of Asset Performance Management System (APMS) on revised PPMC spec No.PPMC-DS-01:2026 & its Configuration & Interfacing with AMI system as per SoR (Rs.1,347 M) incl: 18% GST & 16% PST in IESCO**) described in the bidding documents on **EPADS v2.0**.

3. **Single Stage-Two Envelope** will be used by adopting **Least Cost Based Selection (LCBS)** Technique for the subject procurement, in line with the Public Procurement Rules, 2004 and any Regulations, Regulatory Guides, Procurement Guidelines or Instructions issued by the Authority from time to time.

4. All Bids must be accompanied by a Bid Security amounting described in Bid Security Section in Bidding Document in the form of **Pay Order, Banker's Cheque, Call at Deposit, Bank Guarantee, Demand Draft**. Or all bids must be accompanied by bid securing declaration in the format specified in the Bidding documents

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/105796> for all the interested bidders registered on **EPADS v2.0**. Bidders are required to get themselves registered on **EPADS v2.0** to participate in Bidding process.

6. The e-bids, prepared in accordance with the instructions in the e-Bidding documents, must be submitted through **EPADS v2.0** on or before **Monday, October 19, 2026 11:00 AM**. E-bids will be opened by using **EPADS v2.0** on the same day at **Monday, October 19, 2026 11:30 AM**. Manual submission of Bids shall not be entertained. Those vendor who have not yet registered on the new version of **EPADS v2.0**, may register themselves on **<https://pa.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 on Authority's website at (**www.ppra.org.pk**).

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Islamabad Capital Territory
+92-319-599-2205
iescopmu@iesco.com.pk



Instructions to Bidders

A. INTRODUCTION

1. Scope of Bid

1.1. The Procuring agency/Employer (PA), as indicated in the **Bid Data Sheet** (BDS) invites Bids for the execution of Works as specified in the BDS and **Section V- Works Requirements**. The name, identification, and number of lots (contracts) of this National/ International Competitive Bidding process are specified in the BDS.

2. Source of Funds

2.1. Source of funds as referred in Clause 2 of Bid Data Sheet.

3. Eligible Bidders

3.1. A bidder may be natural person, company or firm or public or semi-public agency of Pakistan or any foreign country, or any combination of them with a formal existing agreement (on Judicial Papers) in the form of a joint venture or consortium. In the case of a joint venture or consortium, all members shall be jointly and severally liable for the execution of the Contract in accordance with the terms and conditions of the Contract. The joint venture or consortium shall nominate a Lead Member as nominated in the BDS, who shall have the authority to conduct all business for and on behalf of any and all the members of the joint venture or consortium during the Bidding process, and in case of award of contract, during the execution of contract. Verifiable copy of the agreement that forms a joint venture, consortium or association shall be required to be submitted as part of the Bid.

Any bid submitted by the joint venture, consortium or association shall indicate the part of proposed contract to be performed by each party and each party shall be evaluated (or post qualified if required) with respect to its contribution only, and the responsibilities of each party shall not be substantially altered without prior written approval of the Procuring Agency and in line with any instructions issued by the Authority.

(The limit on the number of members of JV or Consortium may be prescribed

in BDS, in accordance with the guidelines issued by the PPRA).

3.2. The invitation for bids is open to all prospective bidders subject to any provisions of incorporation or licensing by the respective national/international incorporating agency or statutory body established for that particular trade or business. Procuring agencies shall specify the registration/licensing requirements for the foreign bidder keeping in view the requirement of that business.

3.3. A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidders may be considered to have a conflict of interest with one or more parties in this Bidding process, if they:

3.3.1. are associated or have been associated in the past, directly or indirectly with a firm or any of its affiliates which have been engaged by the Procuring agency/Employer to provide consulting services for the preparation of design or technical specifications of the works that are the subject of the bid; or

3.3.2. have controlling shareholders in common; or

3.3.3. receive or have received any direct or indirect subsidy from any of them; or

3.3.4. have the same legal representative for purposes of this Bid; or

3.3.5. have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another bidder, or influence the decisions of the Procuring agency/Employer regarding this Bidding process; or

3.3.6. Submit more than one bid in this bidding process.

3.4. A Bidder may be ineligible if –

3.4.1. he is declared bankrupt or, in the case of company or firm, insolvent;

3.4.2. payments in favor of the bidder is suspended in accordance with the judgment of a court of law other than a judgment declaring bankruptcy and resulting (in accordance with the national laws) in the total or partial loss of the right to administer and dispose of its property;

3.4.3. the bidder is convicted, by a final judgment of a Court of Law or relevant Professional Statutory Body, of any offence involving professional conduct;

3.4.4. The bidder is debarred/ blacklisted by a national level Procuring agency/Employer and hence debarred due to involvement in corrupt and fraudulent practices, or performance failure or due to breach of bid securing declaration.

3.5. As and when required, bidders shall provide to the Procuring agency/Employer evidence of their eligibility, proof of compliance with the necessary legal requirements to carry out the contract effectively.

3.6. Bidders shall submit proposal relating to the nature, conditions and modalities of sub-contracting wherever the sub-contracting of any elements of the contract is envisaged.

4. Eligible Material and Equipment

4.1. All the material and equipment to be mobilized under the contract shall have their origin in eligible source countries, and all expenditures made under the contract will be limited to such materials and equipment. For this purpose, ineligible countries are stated in the section-IV titled as “Eligible Countries”.

B. BIDDING DOCUMENTS

5. Contents of Bidding Documents

5.1. The scope of Works, bidding procedures, and terms and conditions of the contract are prescribed in the bidding documents. In addition to the Invitation for Bids, the bidding documents which should be read in

conjunction with any addenda issued in accordance with ITB 7.1 include:

- i. Section I -Invitation for Bids
- ii. Section II Instructions to Bidders (ITBs)
- iii. Section III Bid Data Sheet (BDS)
- iv. Section IV Eligible Countries
- v. Section V Evaluation and Qualification Criteria
- vi. Section VI Works Requirements Technical Specifications & Schedule of Requirements
- vii. Section VII Standard Bidding Forms
- viii. Section VIII General Conditions of Contract (GCC)
- ix. Section IX Particular Conditions of Contract (PCC)
- x. Section X Contract Forms

5.2. The bidder is expected to examine all instructions, forms, specifications, terms and conditions prescribed in the bidding documents. Failure to furnish all the information required in the bidding documents will be at the bidder's risk and may result in the rejection of his bid.

6. Clarification of Bidding Document, Pre-bid Meeting

6.1. A prospective bidder requiring any clarification of the bidding document may notify the Procuring agency/Employer through **EPADS v2.0**.

6.2. The Procuring agency/Employer shall respond to the request for clarification in accordance with the Public Procurement Rules 2004, Rule No.31 i.e. **Clarification of bids**.

6.3. Should the Procuring Agency deem it necessary to amend the BIDDING document as a result of a clarification, it shall do so following the procedure under **ITB 7**.

6.4. If indicated in the **BDS**, the bidder's designated representative is invited at the bidder's cost to attend a pre-bid meeting at the place, date and time mentioned in the BDS. During this pre-bid meeting, prospective bidders may request clarification of the schedule of requirement, the evaluation criteria or any other aspects of the bidding documents.

6.5. Minutes of the pre-bid meeting, if applicable, including the text of the questions asked by bidders, including those during the meeting (without identifying the source) and the responses given, together with any responses prepared after the meeting will be uploaded on **EPADS v2.0**. Any modification to the bidding documents that may become necessary as a result of the pre-bid meeting shall be made by the Procuring agency/Employer exclusively through the use of an Addendum pursuant to **ITB 7**. Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.

6.6. The bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the bidder's own expense.

6.7. The bidder and any of its authorized personnel will be granted permission by the Procuring agency/Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the bidder and its personnel will release and indemnify the Procuring agency/Employer from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.

7. Amendment of Bidding Documents

7.1. The procuring agency may issue notification of any change, addition, modification or deletion in accordance with the PP Rules 2004, rule no. 23 i.e. **Bidding Documents**.

7.2. To give prospective bidders reasonable time in which to take an addendum/corrigendum into account in preparing their bids, the Procuring

agency/Employer may, at its discretion, extend the deadline for the submission of bids:

*Provided that the Procuring agency/Employer shall extend the deadline for submission of bid in pursuance of PP Rules 2004, rule no. 27 i.e. **Extension of time for submission of bids**, if such an addendum is issued within last three (03) days of the bid submission deadline.*

C. PREPARATION OF BIDS

8. Language of Bid

8.1. The bid prepared by the bidder, as well as all correspondence and documents relating to the bid exchanged by the bidder and the Procuring agency/Employer shall be written in the English language unless specified in the **BDS**. Supporting documents and printed literature furnished by the bidder may be in another language provided they are accompanied by an accurate translation of the relevant pages in the English language unless specified in the **BDS**, in which case, for purposes of interpretation of the bidder, the translation shall govern.

9. Documents Constituting the Bids

9.1. The Bids prepared by the Bidder shall constitute of all the documents required in the **BDS**.

10. Documents Establishing Eligibility of Material, Equipment and Works, their Conformity to Bidding Documents

10.1. The bid prepared by the bidder shall constitute the following components: -

10.1.1. Documentary evidence established in accordance with **ITB 10** that the material and equipment to be utilized by the Bidder for the executions of works are eligible material and equipment and conform to the Bidding Documents;

10.1.2. Documentary evidence established in accordance with **ITB 11** that the bidder has been authorized to carry out the Construction works;

10.1.3. Documentary evidence established in accordance with **ITB 11** that the bidder is eligible and/or qualified for the subject bidding process;

10.1.4. Form of Bid and Bid Prices completed in accordance with **ITB 12** and **13**;

10.1.5. Completed schedules as required, including priced Bill of Quantities in accordance with **ITB 13**.

10.1.6. Technical Proposal completed in all aspects in accordance with **ITB-15**.

10.1.7. Bid security or Bid Securing Declaration furnished in accordance with **ITB 17**;

10.1.8. Any other document required in the **BDS**.

10.2. In addition to the requirements, bids submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful bid shall be signed by all members and submitted with the bid, together with a copy of the proposed Agreement.

10.3. The bidder shall furnish, as part of its bid, all those documents establishing the eligibility in conformity to the terms and conditions specified in the bidding documents for all material, equipment and works which the bidder proposes to execute.

10.4. The documentary evidence of conformity of the material, equipment and works to the Bidding Documents may be in the form of literature, drawings, and data, and shall consist of:

10.4.1. a detailed description of the work methodology, approach, schedule and resources to be mobilized at site;

10.4.2. an item-by-item commentary on the Procuring agency/Employer's Technical Specifications demonstrating substantial responsiveness of the material, equipment and works to those specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications;

10.4.3. any other procurement specific documentation requirement as stated in the **BDS**.

10.5. The required documents and other accompanying documents must be in English. In case any other language than English is used the pertinent translation into English shall be attached to the original version.

11. Documents Establishing Eligibility and Qualification of the Bidder

11.1. The bidder shall furnish, as part of its bid, all those documents establishing the bidder's eligibility to participate in the bidding process and/or its qualification to perform the contract if its bid is accepted.

11.2. The documentary evidence of the bidder's eligibility to bid shall establish to the satisfaction of the Procuring agency/Employer that the bidder, at the time of submission of its bid, is from an eligible country as defined in Section-IV titled as "Eligible Countries".

11.3. The documentary evidence of the bidder's qualification to perform the contract if its bid is accepted shall establish to the satisfaction of Procuring agency/Employer that:

11.3.1. The bidder has the financial and technical capability necessary to perform the Contract, meets the qualification criteria specified in Section-V, Evaluation and Qualification Criteria and **BDS**.

11.3.2. In the case of a bidder not doing business within Pakistan, the bidder is or will be (if awarded the contract) represented by a local bidder (Joint Venture) in accordance with the PEC works bylaws, and in case of award of works such foreign firm is required to participate in the execution of works to carry out its obligations as prescribed in the Conditions of Contract and /or Technical Specifications.

11.3.3. That the bidder meets the qualification criteria listed in Section-V, Evaluation and Qualification Criteria and **BDS**.

12. **Forms of Bid**

12.1. The Bidder shall fill the Form of Bids furnished in the bidding documents. The Bids Form must be completed without any alterations to its format and no substitute shall be accepted.

13. **Bid Prices**

13.1. The bid prices quoted by the bidder in the Standard bid Forms, Bill of Quantities and in the Price Schedules shall conform to the requirements specified below or exclusively mentioned hereafter in the bidding documents.

13.2. The bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. If a Price Schedule shows items listed but not priced, their prices shall be construed to be included in the prices of other items in the Bill of Quantities and will not be paid for separately by the Procuring agency/Employer.

13.3. Items not listed in the Price Schedule shall be assumed not to be included in the bid, and provided that the bid is still substantially responsive in their absence or due to their nominal nature, the corresponding average price of the respective item(s) of the remaining substantially responsive bidder(s) shall be construed to be the price of those missing item(s):

Provided that:

13.3.1. where there is only one (substantially) responsive bidder, or

13.3.2. where there is provision for alternate proposals and the respective items are not listed in the other bids,

The Procuring agency/Employer may fix the price of missing items in accordance with market survey, and the same shall be considered as final price.

13.4. The Bid price to be quoted in the Form of Bid in accordance with ITB 12 shall be the total price of the bid.

13.5. Unless otherwise specified in the **BDS** and the Contract, the rates and prices quoted by the bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract.

13.6. If so specified in ITB 1.1, bids may be invited for individual lots (contracts) or for any combination of lots (packages).

13.7. Prices quoted by the Bidder shall be fixed during the bidder's performance of the contract and not subject to variation on any account. A bid submitted with an adjustable price will be treated as non-responsive and shall be rejected, pursuant to **ITB 27**, unless otherwise price adjustment is permissible under Conditions of the Contract.

13.8. All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date twenty-eight (28) days prior to the deadline for submission of bids, shall be included in the rates and prices and the total bid price submitted by the bidder.

14. Currencies of Bid and Payment

14.1. Prices shall be quoted in Pakistani Rupees unless otherwise specified in the **BDS**. Comparison of bids and tie of bid shall be treated in accordance with the PP rules 2004, rule no. 30.

15. Documents Comprising the Technical Proposal

15.1. The bidder shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section VII - Standard Bid Forms, in sufficient detail to demonstrate the adequacy of the bidder's proposal to meet the work requirements and the completion time.

16. Bid Validity Period

16.1. Bids shall remain valid for the period specified in the BDS after the bid submission deadline prescribed by the Procuring agency/Employer. A bid valid for a shorter period shall be rejected by the Procuring agency/Employer as non-responsive. The period of bid validity will be determined from the complementary bid securing instrument i.e. the expiry period of bid security or bid securing declaration as the case may be.

16.2. Under exceptional circumstances, prior to the expiration of the initial Bids/Bid validity period, the Procuring Agency may request the Bidders' consent to an extension of the period of validity of their Bids/Bid. Such request for extension of the period of bid validity shall be carried out in accordance with the PP rules 2004, rule no. 26 i.e. Bid Validity.

17. Bid Security or Bid Securing Declaration

17.1. Pursuant to ITB 11.1 unless otherwise specified in the BDS, the bidder shall furnish as part of its bid, a Bid Security in accordance with the PP Rules 2004, rule no. 25 in the amount and currency specified in the BDS or Bid Securing Declaration as specified in the BDS in the format provided in Section VII (Standard Bidding Forms).

In case Procuring agency/Employer is inviting bids in lots / packages, the bidder shall be required to submit his bid security against the respective lot/package for which he is submitting his bid.

Until the development of functionality of auto verification of financial instrument in **EPADS v2.0**, the scanned copy of bid security or bid securing declaration, as the case may be, shall be uploaded on **EPADS v2.0** whereas the original instrument to be submitted to the procuring agency before closing of bid submission deadline,

17.2. The Bid Security shall be denominated in the local currency or in another freely convertible currency, and it shall be in the form specified in the BDS which shall be in any of the following:

17.2.1. A bank guarantee, an irrevocable letter of credit issued by a Scheduled bank in the form provided in the Bidding Documents or another form acceptable to the Procuring agency/Employer and valid for twenty-

eight (28) days beyond the end of the validity of the Bid. This shall also apply if the period for Bid Validity is extended. In either case, the form must include the complete name of the bidder;

17.2.2. A cashier's or certified cheque; or

17.2.3. Another security as indicated in the **BDS**.

17.3. The Bid Security or Bid Securing Declaration shall be in accordance with the Form of the Bid Security or Bid Securing Declaration included in Section VII (Standard Bidding Forms) or another form approved by the Procuring agency/Employer prior to the bid submission.

17.4. The Bid Security shall be payable promptly upon written demand by the Procuring agency/Employer in case any of the conditions listed in **ITB 17.9** are invoked.

17.5. Any bid not accompanied by a Bid Security or Bid Securing Declaration in accordance with **ITB 17.1 or 17.3** shall be rejected by the Procuring agency/Employer and shall be declared as non-responsive bid, pursuant to **ITB 27**.

17.6. Unsuccessful bidders' Bid Security will be discharged or returned as promptly as possible, however in no case later than thirty (30) days after the expiration of the period of Bid Validity prescribed by the Procuring agency/Employer pursuant to **ITB 16**. The Procuring agency/Employer shall make no claim to the amount of the Bid Security, and shall promptly return the Bid Security document, after whichever of the following that occurs earliest:

17.6.1. The expiry of the Bid Security;

17.6.2. The entry into force of a procurement contract and the provision of a performance security (or guarantee), for the performance of the contract if such a security (or guarantee), is required by the Bidding documents;

17.6.3. The rejection by the Procuring agency/Employer of all Bids;

17.6.4. The withdrawal of the bid prior to the deadline for the submission of bids, unless the bidding documents stipulate that no such withdrawal is permitted.

17.7. The successful bidder's Bid Security will be discharged upon the bidder signing the contract pursuant to **ITB 40**, or furnishing the performance security (or guarantee), pursuant to **ITB 41**.

17.8. The Bid Security may be forfeited or the Bid Securing Declaration executed:

if a Bidder:

17.8.1. Withdraws its Bid during the period of Bid Validity as specified by the Procuring agency/Employer, and referred by the bidder on the Form of Bid except as provided for in ITB 16.2; or

17.8.2. In the case of a successful bidder, if the bidder fails:

17.8.2.1. to sign the contract in accordance with ITB 40; or

17.8.2.2. to furnish performance security (or guarantee) in accordance with ITB 41.

17.9. In case of Bid Security issued by the foreign bank is allowed by the Procuring agency/Employer, the same should be counter guaranteed by a corresponding bank in Pakistan. Furthermore, in case of joint venture, it should be in the name of Joint venture to ensure joint responsibility. In case the JV is not legally constituted at the time of bid submission, the bid security or bid securing declaration shall be in the names of all future members as named in the letter of bid.

18. Withdrawal of Bids

18.1. Before bid submission deadline, any bidder may withdraw, substitute, or modify its bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and the corresponding must accompany the respective written notice.

19. Format and Signing of Bid

19.1. The Bidder shall prepare and submit Bids through EPADS with due diligence after carefully reading all the terms and condition before bid submission deadline.

D. SUBMISSION OF BIDS

20. Submission of Bids

20.1. All bids shall be submitted through **EPADS v2.0**.

21. Deadline for Submission of Bids

21.1. All bids shall be received through **EPADS v2.0** not later than bid submission deadline as specified in the **BDS**.

21.2. The Procuring agency/Employer may, under exceptional circumstances and at its discretion, extend the deadline for the submission of bids, pursuant to PP Rules 2025, rule no.39 Extension of Time for submission of bid, by amending the Bidding Documents in accordance with ITB 7, in which case all rights and obligations of the Procuring agency/Employer and bidders previously subject to the deadline will thereafter be subject to the new deadline.

22. Substitution and Modification of bids

22.1. A bidder may substitute or modify his bid after it has been submitted, provided that written notice of the substitution or modification of the bid, is received by the Procuring agency/Employer prior to the deadline for submission of bids.

22.2. Revised bid may be submitted after the substitution or modification made in the original bid in accordance with the provisions referred in ITB 18.

E. OPENING AND EVALUATION OF BIDS

23. Opening of Bids

23.1. The Procuring Agency will open bids in accordance with the PP rules 2004, rule no 28 and as specified in the **BDS**.

24. Confidentiality

24.1. Information relating to the examination, clarification, evaluation and comparison of bids and recommendation of contract award shall not be disclosed to bidders or any other persons not officially concerned with such process until the time of the announcement of the respective evaluation report.

25. Clarification of Bids

25.1. Clarification of Bidding Documents shall be carried out in accordance with the PP Rules 2025, rule no 38 i.e. Clarifications.

25.2. The alteration or modification in the bid which in any case affect the following parameters will be considered as a change in the substance of a bid:

- 25.2.1. evaluation & qualification criteria;
- 25.2.2. required scope of work;
- 25.2.3. contract price;
- 25.2.4. all securities requirements;
- 25.2.5. tax requirements;
- 25.2.6. terms and conditions of bidding documents.
- 25.2.7. change in the ranking of the bidder

26. Preliminary Examination of Bids

26.1. Prior to the detailed evaluation of bids, the Procuring agency/Employer will determine whether each bid:

26.1.1. meets the eligibility criteria defined in ITB 3 and ITB 4;

26.1.2. has been prepared as per the format and contents defined by the Procuring agency/Employer in the bidding documents;

26.1.3. has been properly signed;

26.1.4. is accompanied by the required securities; and

26.1.5. is substantially responsive to the requirements of the bidding documents.

The Procuring agency/Employer's determination of a bid's substantial responsiveness will be based on the contents of the bid itself.

26.2. A substantially responsive Bid is one which conforms to all the terms, conditions, and specifications of the Bidding Documents, without material deviation or reservation. A material deviation or reservation is one that: -

26.2.1. affects in any substantial way the scope, quality, or performance of the Works;

26.2.2. limits in any substantial way, inconsistent with the bidding documents, the Procuring agency/Employer's rights or the bidders' obligations under the Contract; or

26.2.3. if rectified, would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

26.3. The Procuring agency/Employer will confirm that the documents and information specified under ITB 9, 10 and 11 have been provided in the bid. If any of these documents or information is missing, or is not provided in accordance with the Instructions to Bidders, the bid shall be rejected.

26.4. The Procuring agency/Employer may waive-off any minor informality, nonconformity, or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.

Explanation: A minor informality, non-conformity or irregularity is one that is merely a matter of form and not of substance. It also pertains to some

immaterial defect in a Bid or variation of a bid from the exact requirements of the invitation that can be corrected or waived without being prejudicial to other bidders. The defect or variation is immaterial when the effect on quantity, quality, or delivery is negligible when contrasted with the total cost or scope of the works. The Procuring agency/Employer either shall give the bidder an opportunity to cure any deficiency resulting from a minor informality or irregularity in a bid or waive the deficiency, whichever is advantageous to the Procuring agency/Employer. Examples of minor informalities or irregularities include failure of a bidder to –

26.4.1. Submit the number of copies of signed bids required by the invitation;

26.4.2. Furnish required information concerning the number of its employees;

26.4.3. the firm submitting a bid has formally adopted or authorized, before the date set for opening of bids, the execution of documents by typewritten, printed, or stamped signature and submits evidence of such authorization and the bid carries such a signature.

26.5. Provided that a Technical Bid is substantially responsive, the Procuring agency/Employer may request the bidder to submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Technical Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any such aspect of the technical Proposal linked with the ranking of the bidders. Failure of the bidder to comply with the request may result in the rejection of its bid.

26.6. Provided that a Technical Bid is substantially responsive, the Procuring agency/Employer shall rectify quantifiable nonmaterial nonconformities or omissions related to the Financial Proposal. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of the missing or nonconforming item or component.

26.7. If a bid is not substantially responsive, it will be rejected by the Procuring agency/Employer and may not subsequently be evaluated for

complete technical responsiveness.

27. Examination of Terms and Conditions; Technical Evaluation

27.1. The Procuring agency/Employer shall examine the bid to confirm that all terms and conditions specified in the GCC and the PCC have been accepted by the bidder without any material deviation or reservation.

For this purpose:

“Deviation” means departure from the requirements specified in the Bidding Document.

“Reservation” means setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document.

27.2. The Procuring agency/Employer shall evaluate the technical aspects of the bid submitted in accordance with ITB 30, to confirm that all requirements specified in Section VI – Works Requirement, Technical Specifications of the Bidding Documents have been met without material deviation or reservation.

27.3. If after the examination of the terms and conditions and the technical evaluation, the Procuring agency/Employer determines that the bid is not substantially responsive in accordance with ITB 27, it shall reject the bid.

28. Correction of Arithmetic Errors

28.1. Bids determined to be substantially responsive will be checked for any arithmetic errors. Errors will be corrected as follows: -

28.1.1. if there is a discrepancy between unit prices and the sub-total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the sub-total price shall be corrected, unless in the opinion of the Procuring agency/Employer there is an obvious misplacement of the decimal point in the unit price, in which the total price as quoted shall govern and the unit price shall be corrected;

28.1.2. if there is an error in a total corresponding to the addition or subtraction of sub-totals, the sub-totals shall prevail, and the total shall be corrected; and

28.1.3. where there is a discrepancy between the amounts in figures and in words, the amount in words will govern.

28.1.4. Where there is discrepancy between grand total of price schedule and amount mentioned on the Form of Bid, the amount referred in Price Schedule shall be treated as correct subject to elimination of other errors.

28.2. The amount stated in the Bid will, be rectified by the Procuring agency/Employer in accordance with the above procedure for the correction of errors and, with, the concurrence of the bidder, shall be considered as binding upon the bidder. If the bidder does not accept the corrected amount, its bid shall be rejected after forfeiture of Bid Security or execution of the Bid Securing Declaration, as the case may be, in accordance with ITB 41.3.

29. Conversion to Single Currency

29.1. The unit rates and the prices shall be quoted by the bidder entirely in Pak rupees. A bidder expecting to incur expenditures in other currencies for inputs to the Works from outside the Procuring agency/Employer's country (referred to as the "Foreign Currency Requirements") shall indicate the same in the letter of bid-financial proposal. The proportion of the Bid Price (excluding Provisional Sums) needed by him for the payment of such Foreign Currency Requirements either (i) entirely in the currency of the Bidder's home country or, (ii) at the bidder's option, entirely in Pak rupees provided always that a bidder expecting to incur expenditures in a currency or currencies other than those stated in (i) and (ii) above for a portion of the foreign currency requirements, and wishing to be paid accordingly, shall indicate the respective portions in his bid. Comparison of bids quoted in different currencies and conversion of bids into a single currency shall be carried out in accordance with the PP Rule 2004, rule no. 30 (2).

30. Evaluation of Bids

30.1. The Procuring agency/Employer shall evaluate and compare only the bids determined to be substantially responsive, pursuant to ITB 27.

30.2. In evaluating the Technical Proposal of each Bid, the Procuring agency/Employer shall use the criteria and methodologies listed in the BDS and in terms of works requirement. No other evaluation criteria or methodologies shall be permitted.

30.3. The Procuring agency/Employer's evaluation of a bid will take into account:

30.3.1. the bid price, excluding provisional sums and the provision, if any, for contingencies in the summary bill of quantities, but including day work items, where priced competitively;

30.3.2. converting the amount resulting from applying above, if relevant, to a single currency in accordance with ITB 29;

30.4. The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in bid evaluation.

30.5. If these bidding documents allow bidders to quote separate prices for different lots, and the award to a single bidder of multiple lots, the methodology of evaluation to determine the lowest evaluated lot combinations in the Form of Bid, is specified in the BDS.

30.6. If the bid, which results in the Evaluated Bid Price (Successful Bid), is seriously unbalanced or front loaded in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, taking into consideration the schedule of estimated Contract payments, the Employer may require that the amount of the performance security be increased at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

Explanation:

“Unbalanced” or “front-loaded” bids consist of deliberately submitting bids with artificially high prices or unit rates for the early stages of a construction project, offset by artificially low prices or unit rates for the later stages of the project, to improve the contractor’s cash flow.

31. Domestic Preference

31.1. If the BDS so specifies, the Procuring agency/Employer will grant a margin of preference to the domestic contractor in line with the rules, regulations, regulatory guides or instructions issued by the Authority from time to time.

32. Determination of Successful Bid

32.1. The Procuring agency/Employer shall compare the evaluated bids in accordance with the predefined bidding procedure, of all substantially responsive bids to determine the Successful bidder.

33. Qualification of Bidder

33.1. The Procuring agency/Employer shall determine to its satisfaction whether the bidder is substantially responsive and whose bid is declared as Successful bid either continues to meet (if prequalification applies) or meets (if post-qualification applies) the qualifying criteria specified in Evaluation and Qualification Criteria.

Note: In case of international bidding, the parameters for incorporation or licensing within Pakistan may be fulfilled as part of post qualification.

33.2. The determination shall be based upon an examination of the documentary evidence of the bidder’s qualifications submitted by the bidder, pursuant to ITB 11.

33.3. Prior to contract award, the Procuring agency/Employer will verify that the successful bidder (including each member of a JV) is not blacklisted/debarred. The Procuring agency/Employer will conduct the same verification for each sub-contractor proposed by the successful bidder.

34. Sub-Contractors

34.1. The bidder shall provide details regarding any specialized sub-contractor to the Procuring agency/Employer. In case change of sub-contractors, the bidder shall promptly notify the Procuring agency/Employer and obtain approval for replacement of sub-contractors.

34.2. Bidders may propose sub-contracting up to the percentage of total value of contracts or the volume of works as specified in the BDS.

35. Abnormally Low Financial Bid

35.1. A procuring Agency may reject abnormally low bids in accordance with the PP Rules 2025 rule no. 43. The decision of the Procuring agency/Employer to reject a bid and reasons for the decision shall be recorded in the procurement proceedings and promptly communicated to the bidder concerned. Moreover, the Procuring agency/Employer shall not incur any liability solely by rejecting abnormally bid

Guidance for Procuring agency/Employer:

An abnormally low bid means, in the light of the Procuring agency/Employer's estimate and of all the bids submitted, the bid appears to be abnormally low by not providing a margin for normal levels of profit. In order to identify the Abnormally Low Bid (ALB) following approaches can be considered to minimize the scope of subjectivity:

35.1.1. Comparing the bid price with the cost estimate;

35.1.2. Comparing the bid price with the bids offered by other bidders submitting substantially responsive bids; and

35.1.3. Comparing the bid price with prices paid in similar contracts in the recent past either government- or development partner-funded.

35.2. The Procuring agency/Employer will determine to its satisfaction whether the bidder that is selected as having submitted the successful bid is qualified to perform the contract satisfactorily, in accordance with the criteria listed in ITB 11

35.3. The determination will take into account the bidder's financial and technical capabilities. It will be based upon an examination of the

documentary evidence of the bidder's qualifications submitted by the bidder, pursuant to ITB 11, as well as such other information as the Procuring agency/Employer deems necessary and appropriate. Factors not included in these bidding documents shall not be used in the evaluation of the bidders' qualifications.

35.4. Procuring agency/Employer may seek "Certificate for Independent Price Determination" from the bidder and the results of reference checks may be used in determining award of contract.

Explanation: *The Certificate shall be furnished by the bidder. The bidder shall certify that the price is determined keeping in view of all the essential aspects such as raw material, its processing, value addition, optimization of resources due to economy of scale, transportation, insurance and margin of profit etc.*

35.5. An affirmative determination will be a prerequisite for award of the contract to the bidder. A negative determination will result in rejection of the bidder's bid, in which event the Procuring agency/Employer will proceed to the next ranked bidder to make a similar determination of that bidder's capabilities to perform satisfactorily.

F. AWARD OF CONTRACT

36. Criteria of Award

36.1. Subject to ITB 36 and 37, the Procuring agency/Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has been declared as Successful Bidder, provided that such bidder has been determined to be:

36.1.1. eligible in accordance with the provisions of ITB 3;

36.1.2. is determined to be qualified to perform the Contract satisfactorily; and

36.1.3. Successful negotiations have been concluded, if any.

37. Negotiations

37.1. The Committee of the Procuring agency/Employer may negotiate with the Most Advantageous Bidder relating to the following areas:

37.1.1. a minor alteration to the technical (drawings, design technical specifications) details of the statement of works;

37.1.2. Methodology, work plan, staffing in view to streamline the work;

37.1.3. a minor amendment to the Particular conditions of Contract;

37.1.4. finalizing payment arrangements;

37.1.5. clarifying details that were not apparent or could not be finalized at the time of Bidding;

37.2. Where negotiation fails to result into an agreement, the Procuring agency/Employer may invite the next ranked bidder for negotiations. Where negotiations are commenced with the next ranked bidder, the Procuring agency/Employer shall not reopen earlier negotiations.

38. Procuring agency/Employer's Right to reject All Bids

38.1. The procuring agency has the right to reject all bids in accordance with the PP Rules 2025 rule no. 45. However, the Authority (i.e. PPRA) may call from the Procuring agency/Employer the justification of those grounds.

39. Notification of Award

39.1. The procuring agency shall announce and publish the evaluation result in accordance with the PP Rules 2004, rule no. 40.

39.2. Where no complaints have been lodged, the bidder whose bid has been accepted will be notified of the award by the Procuring agency/Employer prior to expiration of the bid validity period through EPADS. However, the Procuring agency/Employer shall not award any procurement contract at least for five (05) days after the announcement of final evaluation report. The notification letter (herein after and in the condition of the contract and contract form called "Letter of Acceptance"

will specify the sum that the Procuring agency/Employer will pay the successful bidder in consideration for the execution and completion of the works as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price).

39.3. The notification of award will constitute the formation of the Contract, subject to the bidder furnishing the Performance Security (or guarantee) in accordance with ITB 41 and signing of the contract in accordance with ITB 40.

39.4. Upon the successful bidder's furnishing of the performance security (or guarantee) pursuant to ITB 41, the Procuring agency/Employer will promptly notify each unsuccessful bidder, the name of the successful bidder and the Contract amount and will discharge the Bid Security or Bid Securing Declaration of the bidder(s) pursuant to ITB 17.

40. Signing of Contract

40.1. Promptly after notification of award, Procuring agency/Employer shall send the successful bidder the draft agreement, incorporating all terms and conditions as agreed by the parties to the contract.

40.2. Immediately after the Redressal of grievance by the GRC, and after fulfillment of all conditions precedent of the Contract Form, the successful bidder and the Procuring agency/Employer shall sign the contract.

40.3. Where no formal signing of a contract is required, work order issued to the bidder shall be construed to be the contract.

41. Performance Security (or Guarantee)

41.1. After the receipt of the Letter of Acceptance, the successful bidder, within the specified time, shall deliver to the Procuring agency/Employer a Performance Guarantee in the amount and in the form stipulated in the BDS and PCC, denominated in the type and proportions of currencies in the Letter of Acceptance and in accordance with the Conditions of Contract.

41.2. If the Performance Guarantee is provided by the successful bidder and it shall be in the form specified in the BDS which shall be in any of the

following:

41.2.1. certified cheque, cashier's or manager's cheque, or bank draft;

41.2.2. irrevocable letter of credit issued by a scheduled bank of Pakistan or in the case of an irrevocable letter of credit issued by a foreign bank, the letter shall be confirmed or authenticated by a scheduled bank of Pakistan;

41.2.3. bank guarantee confirmed by a reputable local bank or, in the case of a successful foreign bidder, bonded by a foreign bank; or

41.2.4. surety bond callable upon demand issued by any reputable surety or insurance company.

Any Performance Guarantee submitted shall be enforceable in Pakistan.

41.3. Failure of the Most Advantageous Bidder to comply with the requirement of ITB 40 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security or declare blacklisted (in case bid securing declaration is submitted) in which event the Procuring agency/Employer may make the award to the next most advantageous bidder or reinitiate the procurement process afresh (as a case may be).

42. Advance Payment

42.1. Advance payment will be provided to the bidder in percentage and in the manner as agreed by the both parties in terms of Conditions of the Contract.

42.2. The Procuring agency/Employer will provide an advance payment as stipulated in the Conditions of Contract, subject to a maximum amount, as stated and/or Conditions of the Contract. The advance payment request shall be accompanied by an advance payment security (guarantee) in the form provided in Section X. For the purpose of receiving the advance payment, the bidder shall make and estimate of, and include in its bid, the expenses that will relate to the purchase of equipment, machinery, materials, and on the engagement of labor during the first month beginning with the date of the Procuring agency/Employer's "Notice to Commence" as specified in the PCC.

43. General Performance of the Bidders

43.1. The Procuring agency/Employer reserves the right to obtain information regarding performance of the bidders on their previously awarded contracts / works. The Procuring agency/Employer may seek information / report from the previous employer for consideration. However, the Procuring agency/Employer shall incorporate such parameters in the evaluation criteria and accordingly decide the fate of the bid submitted.

44. Corrupt & Fraudulent Practices

44.1. Procuring agencies (including beneficiaries of Government funded projects and procurement) as well as Bidders/Suppliers/Contractors under Government financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts, and will avoid to engage in any corrupt and fraudulent practices.

G. GRIEVANCE REDRESSAL & COMPLAINT REVIEW MECHANISM

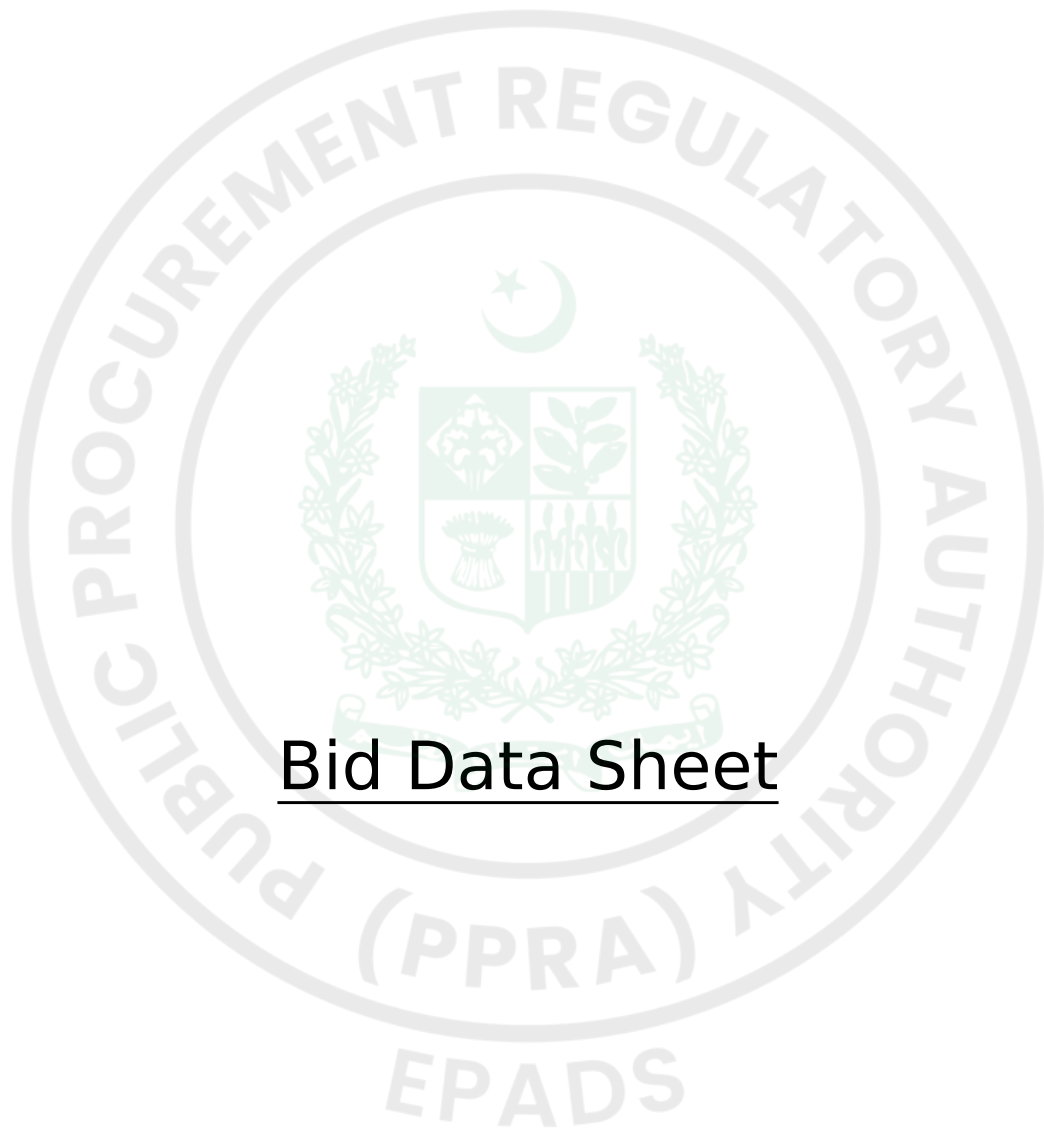
45. Grievance Redressal

45.1. Grievance Redressal shall be carried out in accordance with the PP Rules 2025, rule no. 65 i.e. Redressal of grievances by the procuring agency and "Redressal of Grievances Regulations 2021".

H. MECHANISM OF BLACKLISTING

46. Mechanism of Blacklisting

46.1. The Procuring agency/Employer shall proceed Blacklisting of Bidders/Contractors in accordance with PP Rules 2025, rule no.25 i.e. Blacklisting and "Blacklisting and Debarment of Bidders or Contractors Regulations 2024.



Bid Data Sheet

Bid Data Sheet (BDS)

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

A. Introduction

ITB Number

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

ITB Number1.1

Name of Procuring agency/Employer: **IESCO-PMU (Islamabad Electric Supply Company (IESCO))**

The subject of procurement is: **Proc: of Supply, Installation, Testing & Commissioning of Asset Performance Management System (APMS) on revised PPMC spec No.PPMC-DS-01:2026 & its Configuration & Interfacing with AMI system as per SoR (Rs.1,347 M) incl: 18% GST & 16% PST in IESCO**

Period for completion of the works **210 Days**

Commencement date execution of the works: **07 Days**

Type of Procurement:**Local**

ITB Number2.1

Financial year for the operations of the Procuring agency/Employer: **2026-27**

Name of Project [insert: name and summary description of the Project if any]

Name of financing institution: [insert: name if any]

Name and identification number of the Contract: **P105796**

ITB Number3.1

JV/Consortium or Association Allowed: **Yes**

Maximum number of members in the joint venture shall be: **02.**

B. Bidding Documents

ITB Number 6.4

The Bidders may seek clarifications through **EPADS v2.0: Last Clarification Date: Friday, October 16, 2026**

Pre-Bid Meeting: Tuesday, October 6, 2026 11:00 AM

C. Preparation of Bids

ITB Number 8.1

The Language of all correspondences and documents related to the Bid is: **English**

ITB Number 5.1 & 9.1

The following documents must be included to constitute the Bid

1. 1. Manufacturer's Authorization PEC registration in EE-04 category at least C-1 Undertaking for Type testing of APMS and individual components as per tender specifications Undertaking for blacklisting 2. Integrity Pact (No contract amount should be mentioned) ii. Joint venture Agreement if any on non-judicial stamp paper for particular tender iii. No Deviation certificates from Commercial terms and technical specification
2. Firms Engineers and professionals Information v. Quality Control & Assurance list and status vi. Income tax returns for last three years vii. Audited Financial Reports of last three years viii. Confirm and valid Bank Credit line (latest) Technical Data Sheet duly filled by manufacturer on standard format of specification Literature of individual items and CBU

ITB Number 9.4 (b)

Other procurement specific documentation requirements are:

As mentioned above

ITB Number 12.4

The Bid price will be/will not be subject to the price adjustment **Nil**.

ITB Number 12.6

The Bid price shall be adjusted in accordance with Schedule-A to Bid – “Schedule of Adjustment Data” if available.

ITB Number13.1

Bidders to quote entirely in **Pak rupees (PKR)**

ITB Number15.1

The Bid Validity period shall be **90 Days** days.

ITB Number16.1

The amount of Bid Security shall be (insert amount)

The currency of the Bid Security shall be: **PKR**.

ITB Number16.2

The Bid Security shall be in the form of: **Pay Order, Banker's Cheque, Call at Deposit, Bank Guarantee, Demand Draft**

D. Submission of Bids

ITB Number19.1

The deadline for Bid submission is: **Monday, October 19, 2026 11:00 AM**

Address for submission of Original Bid Security: **PMU Office Adjacent to 132 KV Rawal Grid Station, Club Road, Kashmir Chowk, Islamabad Capital Territory**

ITB Number21.1

The Bid opening shall take place at: **EPADS v2.0**

Day : **Monday**

Date: **October 19, 2026**

Time : **11:30 AM**

ITB Number27.1

The currency that shall be used for Bid evaluation and comparison purposes to convert all Bid prices expressed in various currencies is: **PKR Only**

The source of exchange rate shall be: **Nil**

The date of exchange rate shall be: **Nil**

ITB Number28.2 &28.5

Least Cost Based Selection (LCBS)

see Evaluation Criteria

ITB Number29.1

Domestic preference to apply.

Domestic preference:**Yes**

The Percentage of Domestic Preference is 25%

Preference to domestic or national suppliers or contractors shall be provided in accordance with policies of the Federal Government and/or in accordance with the regulations issued by the Authority.

If Yes, The percentage for the domestic preference alongwith calculation formula is provided in the evaluation and qualification criteria.

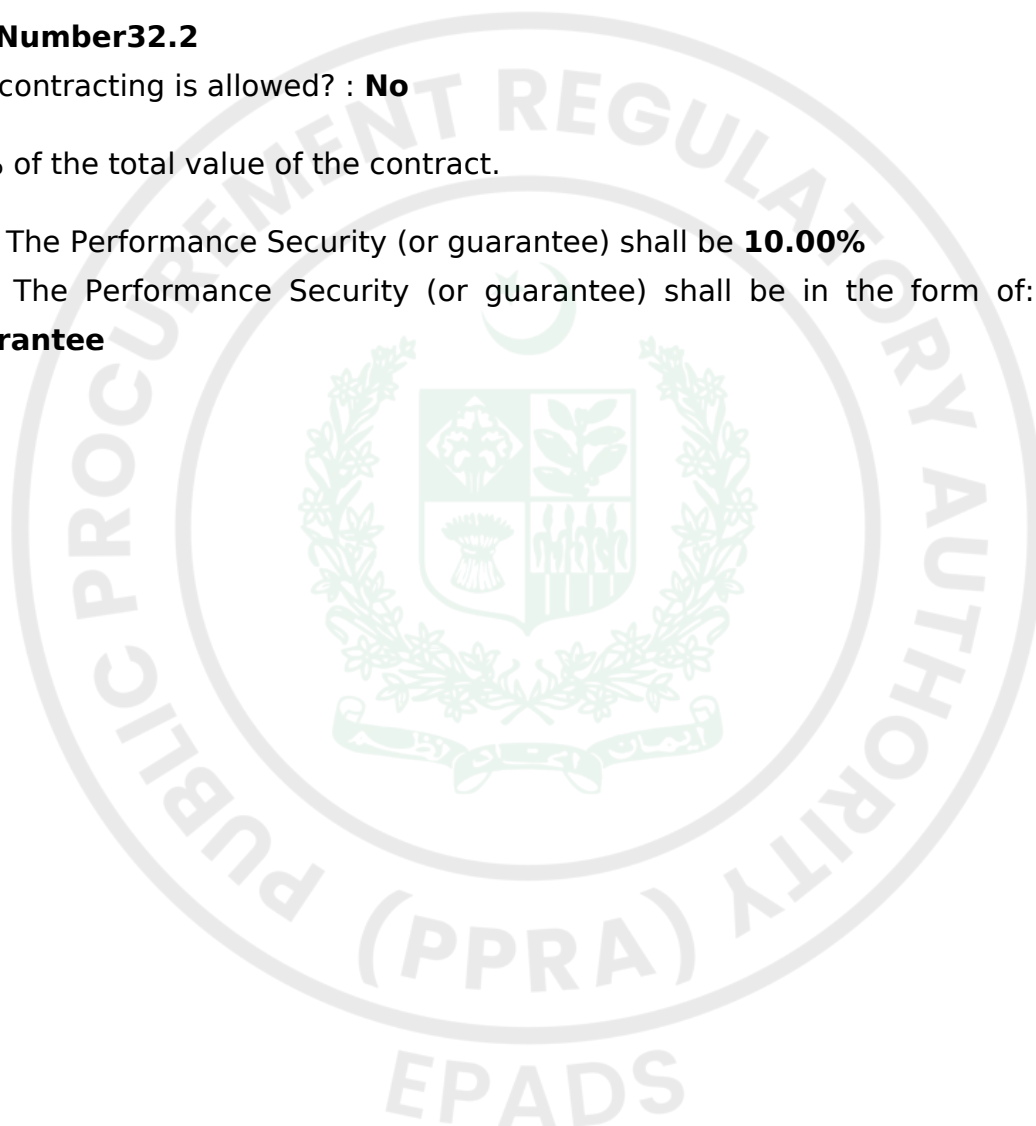
ITB Number32.2

Sub-contracting is allowed? : **No**

No% of the total value of the contract.

39.1 The Performance Security (or guarantee) shall be **10.00%**

39.2 The Performance Security (or guarantee) shall be in the form of:**Bank Guarantee**

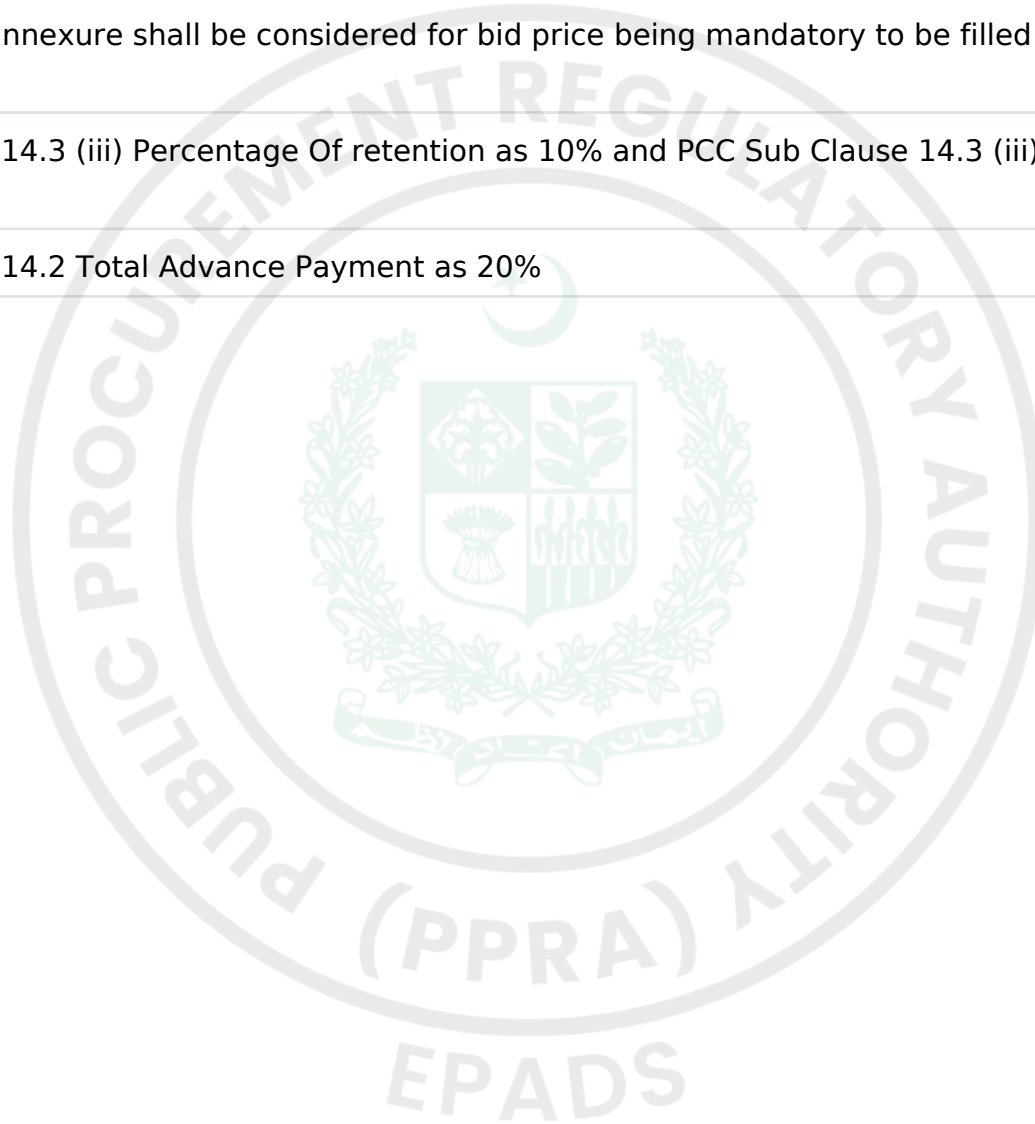


Eligibility Criteria

Bidder's Type	Required Registration
Sole Proprietorship	NADRA CITIZENSHIP (CNIC/NICOP)
Partnership Firm	FBR (NTN)
Company (Private Limited)	FBR (GSTN)
Company (Public Limited)	Punjab (PRA)
Company (Holding Company)	SECP
Company (Limited by Guarantee)	PEC
State Owned Enterprise (Private Limited)	KPK (KPRA)
State Owned Enterprise (Public Limited)	Registrar of Firms

Eligibility Criteria	Document
1. In the event of participation by SoE, the company will determine financial Independence. 2. company/firm must be registered with the respective province. 3. SECP registration if applicable. 4. Foreign Manufacturer shall submit Business License issued by Respective Authority duly attested by Chamber of Commerce.	Yes
The bidder shall submit a technical bid submission sheet as per attached proforma confirming the bid validity and other terms of conditions	Yes
Completion Schedule as per SOR on Gantt Chart	Yes
No deviation certificate form for technical and commercial terms as per attached in annex	Yes
Undertaking for Blacklisting and debarment from any company	Yes
Power of Attorney as per the annexe must be attached	Yes

Bid Security Declaration Form-9 is not applicable	No
Definitions for similar/ comparable, JV/ consortium Experience is attached as annexure for information	No
Price schedule attached as annexure shall be considered for bid price being mandatory to be filled for responsiveness.	Yes
Please read PCC Sub Clause 14.3 (iii) Percentage Of retention as 10% and PCC Sub Clause 14.3 (iii) limit of retention money as 10%	Yes
Please read PCC Sub Clause 14.2 Total Advance Payment as 20%	Yes



Evaluation Criteria

Least Cost Based Selection (LCBS)

Weightage

Technical Evaluation %	
100	
Technical Marks	100
Passing Marks	100
Technical Evaluation Criteria	
contractual experience as per the procurement form (Quantitative)(Doc Required)	15
Manufacturer's past experience as per the procurement form (Quantitative)(Doc Required)	15
Financial resources as per the procurement form (Quantitative)(Doc Required)	20
Annual average turnover as per procurement form (Quantitative)(Doc Required)	20
Historical Contract Non-Performance and Pending Litigation and Litigation history as per procurement form (Quantitative) (Doc Required)	5
The bidder's net worth for the last three years, calculated as the difference between total assets and total liabilities, should be positive (Quantitative)(Doc Required)	5

In order to ensure the smooth and timely execution of the order, the manufacturer will indicate its manufacturing. production capacity, which shall be double the total sum of orders already in hand, expected orders in the pipeline, and this order (if placed on the bidder). The manufacturer shall provide the information with the bid to establish its capacity /capability to execute the order for which necessary documentary evidence may be attached related for the above mentioned requirements. In this context the manufacturer is required to fill in the relevant forms given in Forms of this tender document and submit the same with the bid. (Quantitative)(Doc Required)	10
The completion period for work is 210 days , from signing of contract agreement. 0.05% of quoted bid price per day shall be loaded on the late completion of maximum 30 days. Completion schedule beyond 30 days from completion following stipulated time, bid shall be rejected. No credit will be given for early completion. ii. Each bidder shall provide implementation schedule by using MS- project or Primavera or Excel sheet in shape of GANT Chart which indicate each WBS and Milestone etc (Quantitative)(Doc Required)	10

Jobs/Lots

Jobs Without Lots :

Job	Delivery Schedule	Quantity	Bid Security
NCB-292 Procurement of Supply,Installation,Testing &Commissioning of Asset Performance Management System(APMS) a/c to revised PPMC spec No.PPMC-DS-01:2026& its Configuration & Interfacing with AMI system as per schedule of requirement SoR in IESCO	Address: Regional store new wah Schedule: 210 Days Quantity: 1/job	1/job	13478668.33 PKR

Work Specifications and Market Rates

Jobs Without Lots :

Job: NCB-292 Procurement of Supply,Installation,Testing &Commissioning of Asset Performance Management System(APMS) a/c to revised PPMC spec No.PPMC-DS-01:2026& its Configuration & Interfacing with AMI system as per schedule of requirement SoR in IESCO

Specifications / Requirements:

Sr. No	Ref. No.	Description	Unit	Qty	Rate	Installation, testing & Commissioning Rate	Amount
1	1	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS–CB–S-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	912			
2	2	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	348			

Sr. No	Ref. No.	Description	Unit	Qty	Rate	Installation, testing & Commissioning Rate	Amount
3	3	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	140			
4	4	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	748			
5	5	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	288			
6	6	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	116			

Sr. No	Ref. No.	Description	Unit	Qty	Rate	Installation, testing & Commissioning Rate	Amount
7	7	Supply AAC WASP Insulated Conductor for installation of LT Busbar (for 100 and 200kVA T/F) (mandatory)	Meter	30624			
8	8	Supply Spool Insulator for installation of LT Busbar (if required)	Nos.	20416			
9	9	Supply D-Shackle for Spool Insulator for installation of LT Busbar (if required)	Nos.	20416			
10	10	Supply of 4 core 120mm ² PVC cable for Connection of LT Transformer terminal to APMS as per order code	Meter	9216			
11	11	Supply of 4 core 185mm ² PVC cable for Connection of LT Transformer terminal to APMS as per order code	Meter	9216			
12	12	Supply of Allied accessories for for installation of LT Busbar and Terminal connector and Cable Sleeve with breaker etc. (if required)	Jobs	2552			

Sr. No	Ref. No.	Description	Unit	Qty	Rate	Installation, testing & Commissioning Rate	Amount
13	13	Supply of Allied accessories for for installation of PVC Cable with Transformer terminal to connector and Cable Sleeve with breaker etc. (if required)	Jobs	2552			
14	14	APMS System as per SoR for monitoring of Events, Harmonics, PF, Temperature, etc interoperable with IESCO HES for entire IESCO Network	Job	1			
15	15	Replacement of 2-phase or 2-leg Transformer & Transportation of Transformer from Regional store to Site & Dismantled Transformer back to Store (100 KVA Pole/Pad) if required	Jobs	80			
16	16	Replacement of 2-phase or 2-leg Transformer & Transportation of Transformer from Regional store to Site & Dismantled Transformer back to Store (200 KVA Pole/Pad) if required	Jobs	80			

Sr. No	Ref. No.	Description	Unit	Qty	Rate	Installation, testing & Commissioning Rate	Amount
17	17	Please add 16% PST as provisional sales tax on installation and 18% GST as general sales tax on supply as statutory charges					
						GRAND TOTAL:	Rs1,347,866,833.00



Scope of Work

1. Technical Specification

1. All designs, equipment, materials and workmanship shall comply with and be tested in accordance with requirements of the specification of **PPMC-DS-01:2026 having ordering code (APMS-CB-S-100), (APMS-CB-S-200), (APMS-CB-OTL-100) & (APMS-CB-OTL-200) except SMCD. IESCO AMI LT TOU meter specifications with additional event/alarms demand (described in this document) should be followed for SMCD portion.** Equipment or parts or additional features, which are not covered by the specifications, shall comply special requirement as per **article-2 of this section.**
2. AMI Energy Meter LT (ToU) CT operated shall comply IESCO AMI Specification (copy attached).
3. All component of APMS either type tested acceptable to procuring agency or will undertake for fresh type testing from ILAC or IEC registered lab.
4. The contract shall be executed in strict conformity with the specifications and/or Drawings given or mentioned in this section and the supplier shall do no 'Work' without proper specifications, instructions and/or Drawings.
5. Specifications and/or drawings are intended to complement each other so that if anything is shown on the drawings as required but not mentioned in the specifications or vice versa. It shall be of like effect as if shown or mentioned in both. If any error, omission or discrepancy is found in the figures, specifications and/or drawings or, if any feature shall appear to the supplier to be indefinite or unclear, the same shall be referred to the Purchaser whose written explanation and/or clarification shall be obtained before proceeding with the work.

6. The Manufacturer shall submit to Purchaser under intimation to the Purchaser, within **30 days** of the issuance of the Notification of Award, for approval of the Purchaser, **four (4) copies** of all drawings technical literature, data, operation and maintenance instruction books and/or manuals required under the specifications and such other documents as per required in the Technical Specifications or other provisions of the bidding documents or, if Purchaser deems necessary, require changes or modifications to be made therein, Purchaser shall return two copies to the Manufacturer/Supplier marked. "Approved", "Approved as Noted" or "Returned for Correction". Each drawing, which is noted "Returned for Correction".
7. The Manufacturer/Supplier after incorporating the desired changes in the drawing shall resubmit four (4) sets of the same to the Purchaser for approval. Two prints of which shall be stamped "APPROVED" by the Purchaser and returned to the Manufacturer/Supplier for his record. On completion of the Contract, the Manufacturer / Supplier shall deliver to the Purchaser four (4) prints of all approved drawings, technical literature, data which show the work in the final or "as built" condition. The said drawings and documents shall be permanent and non-fadable. In addition to above, two soft copies of above-mentioned final drawings made on Auto CAD (latest version) on two separate CDs shall also be provided to the Purchaser.
8. The Manufacturer/Supplier shall allow 15 days for the Purchaser's approval of drawings in his schedule of work and in the time allowed for completion of the Contract. Extra time required for approval of drawings due to deficiencies in design or errors in submitted drawings shall be the responsibility of the Manufacturer/Supplier and no extension in time will be allowed on this account. Delays in obtained approval caused by the Purchaser beyond 15 days will entitle the Supplier to an extension of time.
9. Approval by the Purchaser does not relieve the Manufacturer/Supplier of his responsibility to do the work in accordance with the Contract.
10. The Manufacturer/Supplier shall be responsible for any discrepancies, errors and omissions in any drawings or other particulars supplied by him whether the Purchaser has approved such drawings or particulars or not.
11. All drawings and documents furnished by the Manufacturer/Supplier in accordance with the Contract shall become the property of the Purchaser.

12. Wherever reference is made in the Technical Specifications to specific standards and codes to be met by the goods and materials to be furnished or tested, the provisions of the latest current edition or revision of the relevant standards or codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relates to a particular country or regions, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.

13. The latest updated version of specifications shall be applicable. (Amended to date - In effect as at the date 42 days prior to bid submission)

14. Copies of the Technical specifications are attached as Annexure to the bidding document.

15. The bidder is required to fill the requisite schedule of technical data as per attached Specifications and submit the same with the bid for each equipment / material etc. A bid without schedule of technical data (filled in) will be considered as non-responsive

16. The Equipment shall be designed and constructed for indoor/Outdoor installation and shall be suitable for satisfactory operation under the following service conditions:

1. CLIMATE CONDITION

Sr #	Particular	Specified Value
1.	Ambient Temperature	
1.1.	Maximum Temperature	55o C

-2.1.	Minimum Temperature	-20o C
-2.1.	Mean Temperature in a Year	35o C
-2.1.	Mean Temperature in a Day	50o C
2.	Relative Humidity	10 to 100%
3.	Altitude	1000 M
4.	Isoceraunic level (day/Year)	50
5.	Wind velocity	45
6.	Seismic level (Horizontal acceleration)	0.4g
7.	Pollution	High corrosive dust

It may be assumed that the air is heavily polluted by dust, smoke, aggressive gases, vapours or salt spray. However, at certain times of the year severe dust storms may be experienced

1. OPERATING CONDITIONS:

Sr#	Particular	Specified Value
1	System Highest Voltage	415V
2	System Voltage (L-L)	415 V
3	System Voltage (L-G)	240 V
4	Frequency	50%±0.5Hz
5	Neutral Earthing	Solid Ground
9	Creepage Distance for insulator	31mm/kV
10	Power frequency with Stand for one Minute	2.5 KV Phase to Phase
11	Impulse withstand 1.2/50 μ S	8kV

12	K factor where altitude >1000 Meter	
I	1500 Meter	K= 1.1
II	2000 Meter	K=1.2
III	2500 Meter	K=1.3

1. Special Requirement

1. **The short circuit withstand of Motorized & non-Motorized MCCB for one second shall be equal to breaking capacity of offered type of MCCB.**
2. MCCB shall be Electronic Microprocessor Mechanism
3. APMS shall be assembled as per specification as mentioned in this section article-1(i).
4. Enclosure for APMS shall be fabricated in such way that each component has a separate compartment.
5. Although DCU is not in scope of the APMS, however, enclosure shall also possess compartment for Data concentrator Unit (DCU) and its connection facility with Energy meter.
6. Similarly, enclosure shall have facility to connect Active Harmonic Filter if required at site.

7. Contractor is responsible for Design, supply, installation, Testing & Commissioning, Configuration/integration with IESCO AMI system.
8. Contractor shall be responsible for balancing of load on each phase of Transformer with Maximum 10% deviation from each phase. In case, the said task is impossible to achieve without additional span of conductor or any other material to be installed, the material will be provided by Employer and installed by contractor.
9. Contractor shall be responsible for replacement of two phase or damage transformer, however, IESCO will provide the new transformer.
10. Contractor will be responsible for fixing of Busbar with AAC WASP and Connection of APMS through 4 core cable as per drawings.
11. Contractor is responsible with installation of communication "SIM" provided by authorized representative of Procuring agency. If Procuring agency informs about low coverage of network related to installed sim, contractor will replace SIM (to be provide by Employer) to ensure proper communication.
12. Contractor is responsible for configuration and compliance of functionality as per specification with IESCO AMI system. Project Director (AMI) will certify for each transformer for testing, commissioning and configuration.
13. Contractor is responsible for replacement of damaged D-fitting, however, D-fitting shall be provided by procuring agency.
14. Contractor is responsible for returning of damaged Transformer, removed material (if any) to Regional Store or field Store as per direction of PD (AMI) after testing of Circle Manager (M&T). The said testing is necessary for removed transformers only.

1. APMS System /Software

1. APMS System will compatible with existing IESCO AMI system including but not limited to HES and other relevant standard /customized system. Contractor will establish integration of its APMS software with Employer's AMI System using integration techniques already used for integrating different software components of existing solutions. Details will be shared with successful bidder and Employer's team will assist contractor in establishing said integration.
2. APMS system will assess events related APMS ./power parameter as defined thereon in APMS specification prepared by PPMC.
3. System shall be capable to assess the transformer health including temperature of winding and oil, reverse power flow resulting DG generation, Harmonics analysis minnum 50th orders. (Both wave and spectrum).
4. System shall also be capable to assess and operate the var compensator.
5. Contractor will conduct requirement analysis sessions with Employer's nominated team and incorporate all requirements conveyed in software solution to meet requirements of Employer.
6. Configurations of all events and alarm defined during requirement analysis and defined in specification / bid document should be flexible to adjust through system commands / firmware upgrade of SMCD. Contractor shall be responsible for providing assistance for such configuration changes and will also provide access to Employer for such actions.
7. 11,000 licenses of software, metering points and any other involved licenses will be provided by contractor along with Software solution.
8. Contractor will be responsible for provision of additional licenses if required by Employer at later stage. Contractor will convey cost per additional license along with bid for assessment by evaluation committee of Employer.
9. Hardware required to host and maintain services of said software will be supplied and installed by contractor.

10. Contractor will be responsible for provision of service in case of any downtime related to said software. Both hardware and software fixings to be done by contractor during warranty period within minimum possible time as per national and international standards. Resources of contractor will be available physically/online to meet emergencies as discussed.

11. Contractor shall offer SLA for post-warranty period and Employer will decide whether to opt to SLA or otherwise.

12. Contractor shall provide following trainings on his own resources:

1. End User training for 250 users describing installation, functionalities of software and APMS monitoring techniques.

2. Master trainers training for 7 users covering points mentioned in i. Additionally, these users will be trained to handle roles and responsibilities inside software, error handling, report generation, configuration change mechanism etc.

3. Any other training requested by Employer related to APMS.

1. The trainings explained above will be conducted at venue decided and provided by Employer. Multimedia, computers etc. will also be provided by Employer.

2. Contractor will submit training plan after contract agreement which will be reviewed, amended and approved by Employer.

3. Contractor will provide API to share required data from provided software to PITC database for centralized reporting purposes. The data format will be provided after contract signing and frequency of sharing will also be provided i.e. hourly, daily, monthly etc.

4. Cert details regarding cyber security are attached as annexure.

5. Software provided by contractor shall be equipped with reporting tool. Standards reports will be decided at time of requirement analysis of software. However, software should be capable of generating user defined reports using software front end tools.

6. The proposed software solution, including all applications, modules, components, interfaces, databases, APIs and associated services, shall comply with all applicable cybersecurity and information-security laws, regulations, policies, standards and guidelines of the Government of Pakistan and National CERT (nCERT/PKCERT), including the applicable requirements and controls of the Pakistan Information Security Framework (PISF), as amended or updated from time to time. The software shall incorporate appropriate security controls throughout its lifecycle, including secure software acquisition and development practices, access control, data protection, vulnerability and patch management, security testing, audit logging, incident response and supply-chain security. The Bidder/Vendor shall provide relevant security and compliance documentation and shall ensure that the proposed solution is free from malicious code, unauthorized access mechanisms, security backdoors and known exploitable vulnerabilities. Where applicable, the software shall be subject to security assessment, screening, vulnerability assessment, penetration testing, audit or validation by the Purchaser or the competent authority prior to deployment and during the contract period. The Contractor shall be responsible for obtaining, at its own cost, all applicable cybersecurity assessments, screening, evaluation, certification and/or approvals for the proposed software from National CERT (nCERT/PKCERT), PSS and/or any other relevant competent authority, as applicable under the prevailing Government of Pakistan cybersecurity requirements and standards. The Contractor shall facilitate all required technical evaluations, security testing and assessments, address any observations or identified vulnerabilities, and obtain the applicable certificate, clearance, assessment report and/or approval prior to final acceptance and deployment of the software.

1. LANGUAGE

1. All correspondence, literature, drawings, name plates, diagrams, applicable data, equipment details, instructions and maintenance books and manuals, spare parts, books and descriptive data shall be in the English language.

1. TESTS

1. The APMS shall be tested as per Specification PPMC-DS-01:2026
2. Component of APMS shall be tested as per IEC standard or ILAC or STL lab.
3. The Manufacturer shall provide valid type test reports of each component and assembled APMS with the bid as per specification. In case the type test reports furnished by the bidder are not from one of the laboratories mentioned in specification or any other reputed independent testing laboratories accredited by STL (Short-Circuit Testing Liaison) or are not relevant to the equipment offered or do not meet or comply with the ratings and other requirements of the Purchaser's Specifications included in this bidding document or are otherwise not to the satisfaction of the Purchaser in any respect, the Manufacturer bidder has to arrange Type testing at any one lab mentioned in specification at the cost and arrangement of manufacturer without disturbing the stipulated delivery period given above duly witnessed by IESCO Engineers.
4. Manufacturer will provide unconditional undertaking for fresh /new type testing from following Labs.

1. Completion Period

1.1.

1.1.1. The completion period for work is 210 days , after the start date from signing of contract agreement. 0.05% of quoted bid price per day shall be load on the late completion of maximum 30 days. Completion schedule beyond 30 days from completion following stipulated time, bid shall be rejected. No credit will be given for early completion.

1.1.2. Each bidder shall provide implementation schedule by using MS- project or Primavera or Excel sheet in shape of GANT Chart which indicate each WBS and Milestone etc.

1.1.3. Personnel and Technical Team

1.1.4.

Contractor shall ensure following Technical team during execution of Projects

Sr.	Description	No.	Role	Qualification
1	Project Director	01	Lead Team	1.1.4.1. He will be Bachelor or Master in Electrical / Electronic Engineering 1.1.4.2. He must posses 05 years Experience of dealing the HT/ LT distribution network.
2	Site Manager	4	Site Engineer	1.1.4.1. He will be Bachelor or Master in Electrical / ElectronicEngineering 1.1.4.2. He must posses 05 years Experience of dealing the HT/ LT distribution network.

	I & C Engineer	2		1.1.0.1. He will be Bachelor or Master in Electrical / Electronic Engineering 1.1.0.2. He must have 5-year instrumentation and Control experience
3	Line Superintend	10	Supervisor	1.1.0.1. He will be 3-year diploma (DAE) of Associate Engineer in Electrical. 1.1.0.2. Experience in operation, or maintenance of Electrical Distribution system will be preferred.
4	Line Man	15 per Division		I. Matric in (Science) minimum required II. Good Physical fitness required
	Assistant Lineman	30 per Division		Good Physical fitness required

	I&C Technical	15		i. Matric in (Science) with relavent experience ii. Good Physical fitness required
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Price Schedule

For Individual Jobs

#	Job 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

Red Book:

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The Conditions of Contract are the “General Conditions” which form part of the “Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer (“Red book”) Second edition 2017” published by the Federation Internationale Des Ingenieurs – Conseils (FIDIC) and the following “Particular Conditions” which shall complement the General Conditions of the Contract.

The successful Bidder, upon contract award, shall be required to furnish two (02) copies of aforementioned “General Conditions” for incorporation in the Works Contract.

International Federation of Consulting Engineers (FIDIC) FIDIC

Bookshop – Box- 311 – CH – 1215 Geneva 15, Switzerland

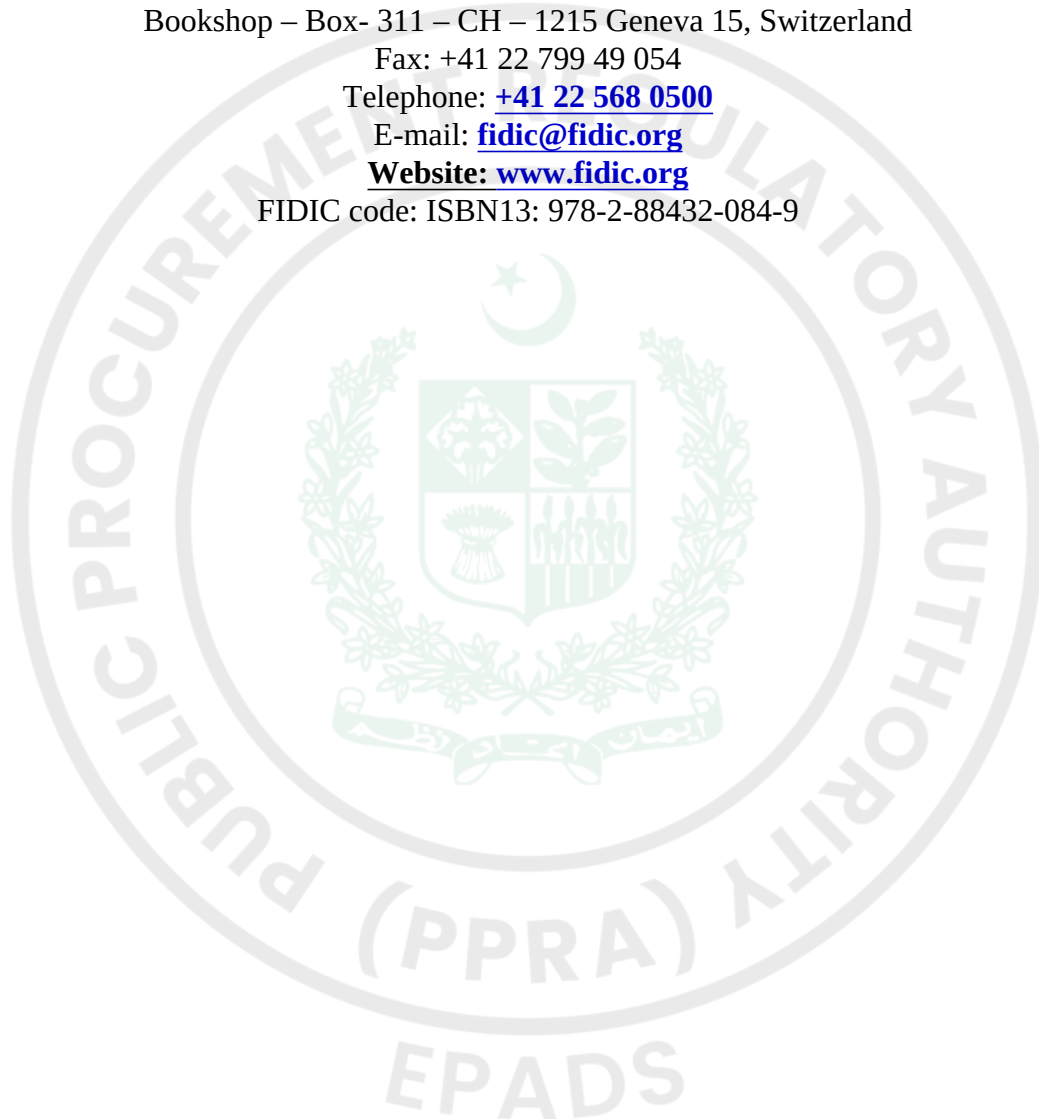
Fax: +41 22 799 49 054

Telephone: [+41 22 568 0500](tel:+41225680500)

E-mail: fidic@fidic.org

Website: www.fidic.org

FIDIC code: ISBN13: 978-2-88432-084-9





Special Conditions of Contract

PARTICULAR CONDITIONS OF CONTRACT (PCC)

Particular Conditions

(Mandatory Provisions not to be amended/substituted)

The Particular Conditions (PCC) complement the General Conditions (GCC) to specify dates, contractual requirements, and special circumstances related to the Works. The PCC consists of two parts, Part A - Contract Data and Part B - Special Provisions. The provisions to be found in the Special Provisions (Particular Conditions - Part B) take precedence over the equivalent provisions found under the same Sub-Clause number(s) in the General Conditions, and the provisions of the Contract Data (Particular Conditions - Part A) take precedence over the Special Provisions (Particular Conditions - Part B).

PART A - Contract Data

Sub-Clause 1.1.27

Defects Notification Period (DNP): **500** Days

Sub-Clause 1.1.31

Employer's name & address: **IESCO-PMU (Islamabad Electric Supply Company (IESCO)), Director PMU Office Adjacent to 132 KV Rawal Grid Station, Club Road, Kashmir Chowk, Islamabad Capital Territory**

Sub-Clause 1.1.35

Engineer's name & address: **Mohsin Raza Gillani (PD AMI)**

PD AMI Sector G-10 Bella Road, Islamabad

Sub-Clause 1.1.84

Time for Completion: **210** days for whole of the works

Sub-Clause 1.3 (a)(ii)

Agreed method of electronic transmission: **Not Agreed**

Sub-Clause 1.3 (d)

Address of Employer for Communications: **PMU Office Adjacent to 132 KV Rawal Grid Station, Club Road, Kashmir Chowk, Islamabad Capital Territory**

Address of Engineer for Communications:

PD AMI Sector G-10 Bella Road, Islamabad

Address of Contractor for Communications: -----

Sub-Clause 1.4

Contract shall be governed by the law of: **Islamic Republic of Pakistan**

Ruling language: **English**

Language for communications: **English**

Sub-Clause 2.1

After receiving the Letter of Acceptance, the Contractor shall be given right of access to all or part of the Site within: **10** days after Commencement Date

Sub-Clause 2.4

Employer's financial arrangements:

Approved Annual Development Budget

Sub-Clause 3.2 (e)(ii)

Engineer's Duties and Authority: **Variation resulting in an increase of the Accepted Contract Amount in excess of one percent (1%) subject to accumulative Variations not exceeding five percent (5%) of the Accepted Contract Amount**

Sub-Clause 4.2

Performance Security (as percentage of the Accepted Contract Amount in Currencies): 10.00%

Form of Performance Guarantee: **Bank Guarantee**

Sub-Clause 4.2.1

List of Insurance Companies:

10% of contract value

Sub-Clause 4.7.2

period for notification of errors in the items of reference: **Twenty Eight (28) days**

Sub-Clause 4.19

Period of payment for temporary utilities: **Each Month**

Sub-Clause 5.1 (a)

Maximum allowable accumulated value of work subcontracted (as a percentage of the Accepted Contract Amount): **Nil %**

Sub-Clause 5.1 (b)

Parts of the Works for which subcontracting is not permitted: **Nil**

Sub-Clause 6.5

Normal working hours on the Site: **8**

Sub-Clause 8.3

Number of additional paper copies of programmes: **04**

Sub-Clause 8.8 & 14.15(b)

Delay Damages payable for each day of delay **0.05%** of the Accepted Contract Amount for delay in completion of whole of the Works

Sub-Clause 8.8

Maximum amount of Delay Damages **10.00 %** of the Accepted Contract Amount

Sub-Clause 8.14

Applicability of Incentives for Early Completion **No**

Sub-Clause 12.3

Percentage profit (Not more than 10%): **Nil**

Sub-Clause 13.4.(b)(ii)

Percentage rate to be applied to Provisional Sums for overhead charges and profit: **Twenty Five percent (25%)**

Sub-Clause 14.2

Total Advance Payment: **Fifteen percent (15%) of the Accepted Contract Amount excluding Provisional Sums payable in the currencies and proportions in which the Accepted Contract Amount is payable**

Sub-Clause 14.2.1

Advance Payment Insurance **Allowed**

20% of contract value

The contractor shall submit advance bank Guarantee from schedule bank equal to advance payment.

Sub-Clause 14.2.3

Percentage deductions for the repayment of the Advance Payment: Deduction shall be made at the amortization rate of 17.5 % of the value of the Works executed of each IPC as provided in paragraph (i) of Sub-Clause GCC 14.3, starting from 2nd IPC provided that the advance payment shall be completely repaid prior to the time when 90% of the Accepted Contract Amount less Provisional Sums has been certified for payment. It may be more than 17.5% in the last instalment to ensure full repayment.

Sub-Clause 14.3

Period of payment **One Month**

Sub-Clause 14.3(b)

Number of additional paper copies of Statements: **04**

Sub-Clause 14.3 (iii)

Percentage of retention: **Seven percent (7%)**

Sub-Clause 14.3 (iii)

Limit of Retention Money (as a percentage of the Accepted Contract Amount): **Five percent (5%)**

Sub-Clause 14.5(b)(i)

Plant and Materials for payment when shipped: **Plant and Materials under Bill of “Imported Plant and Materials”**

Imported Plants and Materials

as per SOR

Sub-Clause 14.5(c)(i)

Plant and Materials for payment when delivered to the Site: Plant and Non Perishable Materials

Plants and Materials Onsite

as per SOR

Sub-Clause 14.6.2

Minimum amount of Interim Payment Certificate (IPC): **No**

[Employer to give value not exceeding one fifth of the average expected value of Interim Payment Certificate]

Sub-Clause 14.7(a)

Period of payment of Advance Payment to the Contractor: **14 days**

Sub-Clause 14.7b(i)

Period for the Employer to make interim payments to the Contractor under Sub-Clause 14.6: **Nil** days

Sub-Clause 14.7b(ii)

Period for the Employer to make interim payments to the Contractor under Sub-Clause 14.13 (Final Payment): **Nil** days

Sub-Clause 14.7(c)

Period for the Employer to make final payment to the Contractor: **45** days

Sub-Clause 14.8

Financing charges for delayed payment Local Currency (PKR):

6-Month KIBOR (Offer) +3% per annum.

Foreign Currency:

USD

6-Month SOFR (Secured Overnight Financing Rate for USD) +1% per annum.

EURO

6-Month EURIBOR (EURO Interbank Offered Rate for EURO) +1% per annum.

Others

Appropriate rates +1% (for other foreign currencies, Ref. Schedule-A, A-4 to Bid).

Sub-Clause 14.11.1(b)

Number of additional paper copies of draft Final Statements: **04**

[insert number of copies say six (06)]

Sub-Clause 14.15

Currencies of payment of Contract Price: **as stated in the Table Schedule of Adjustment Data of Schedule A (if Given)**

Sub-Clause 14.15(a)(i)

Proportions or amounts of Local and Foreign currencies: **as stated in the Table Schedule of Adjustment Data of Schedule A (if Given)**

Sub-Clause 14.15(c)

Currencies and proportions for payment of Delay Damages: **as stated in the Table Schedule of Adjustment Data of Schedule A (if Given)**

Sub-Clause 14.15(f)

rates of exchange: **as stated in the Table IV of Schedule A (If Given)**

Sub-Clause 17.2(d)

Forces of nature, the risks of which are allocated to the Contractor: **Nil**

Sub-Clause 19.1

Permitted deductible limits:

- i) insurance required for the Works: **Ten percent (10%) of loss amount on each & every loss**
- ii) insurance required for Goods: **Nil**
- iii) insurance required for liability for breach of professional duty: **Nil**
- iv) insurance required against liability for fitness for purpose (if any is required): **Nil**
- v) insurance required for injury to persons and damage to property: **Nil**
- vi) insurance required for injury to employees: **Nil**
- vii) other insurances required by Laws and by local practice : **Nil**

Periods for submission of insurance:

- a) evidence of insurance: Not later than the Commencement Date
- b) relevant policies: Within twenty eight (28) day from the Commencement Date

Sub-Clause 19.2.1(b)

Additional amount to be insured (as a percentage of the replacement value): 15% of the replacement value (Accepted Contract Amount)

Sub-Clause 19.2.2

Extent of insurance required for Goods: From Ex-Works (i.e., works, factory, warehouse, etc) to delivery at the Site

Amount of insurance required for Goods: Full replacement value

Sub-Clause 19.2.3(a)

Amount of insurance required for liability for breach of professional duty: Full replacement value of the Works to be designed by the Contractor

Sub-Clause 19.2.3(b)

Insurance required against liability for fitness for purpose: **Yes**

Sub-Clause 19.2.3

Period of insurance required for liability for breach of professional duty: Until the date of issuance of Performance Certificate

Sub-Clause 19.2.4

Amount of insurance required for injury to persons and damage to property: Injury to person and Fatal case: in accordance with Workmen Compensation Act

Damage to Property: The Amount of Insurance Required for Person Injury is 100%

The Amount of Insurance Required for Damage to Property is 100% as per his assessment of the adjoining property(ies) other than the Works] without limit to the number of incidents

Sub-Clause 19.2.6

Other insurances required by Laws and by local practice: All insurances as applicable, to the extent of execution of the project, under Federal and Provincial laws of Islamic Republic of Pakistan

Sub-Clause 21.1

Time for appointment of the DAAB: Within 28 days from the Commencement Date.

In case the Accepted Contract Amount is lesser than PKR one (01) billion, appointment of the DAAB shall be made when Dispute arises between the Parties.

Sub-Clause 21.1

The DAAB shall comprise 3

[insert either “a sole Member” or “Three Members”]

[For a Contract estimated to cost above PKR 2.5billion, the DAAB shall comprise of three members. For a Contract estimated to cost between PKR1billion and PKR2.5billion, the DAAB may comprise of three members or a sole member. For a Contract estimated to cost less than PKR1billion, a sole member is recommended.]

Sub-Clause 21.1

List of proposed members of DAAB

- proposed by Employer

PEC

PEC

PEC

- proposed by Contractor

[to be inserted at the time of signing of the Contract]

1. _____

2. _____

3. _____

Sub-Clause 21.2

Appointing entity (official) for DAAB members Managing Director Public Procurement Regulatory Authority (PPRA) or Chairman Pakistan Engineering Council (PEC) from the list of PEC approved arbitrators published at its website

Sub-Clause 21.6

Rules of Arbitration: PEC Rules of Conciliation and Arbitration or Pakistan Arbitration Act of 1940, if the former is inactive.

The place of Arbitration shall be in the Employer's country: **Islamabad Pakistan**

[Insert name of city]

Particular Conditions

PartB - Special Provisions

1.1 Definitions

1.1.76 "Specification"

Following is added at the end:

"and consists of two parts i.e.,

- i) "Part A - Specific Provisions"; and
- ii) "Part B - Technical Provisions".

1.2 Interpretation

"and" is deleted from the end of sub-paragraph (i) and added at the end of sub-paragraph (j).

Sub-paragraph (k) is added:

"(k) The word "tender" is synonymous with "bid" the word tenderer with "bidder", the words "tender documents" with "bidding documents" and "Schedule of Prices" with "Bill of Quantities", as applicable."

1.5 Priority of Documents The documents listed at (a) through (k) of this Sub-Clause are deleted and substituted with the following:

- (a) the Contract Agreement;
- (b) the Letter of Acceptance;
- (c) the Letter of Bid;
- (d) the Particular Conditions Part A - Contract Data;
- (e) the Particular Conditions Part B - SpecialProvisions;
- (f) the General Conditions;
- (g) the Specification Part A - SpecificProvisions;
- (h) the Specification Part B- Technical Provisions;
- (i) the Drawings;

- (j) the completed Schedules to Bid including Bill of Materials;
- (k) the JV Undertaking (if the Contractor is a JV); and
- (l) any other documents forming part of the Contract.

The addenda/corrigenda, if any, shall be deemed to have been incorporated at the appropriate places in the documents forming the Contract.

1.6 Contract Agreement

In the last line of the 1st paragraph the text “shall be borne by the Employer” is substituted by “shall be reimbursed by the Employer to the Contractor”.

3.1 The Engineer

In sub-paragraph (a) the text “as defined in the Pakistan Engineering Council Act, 1975 (Act No.V of 1976)” are added after the words “professional engineer”.

3.2 Engineer’s Duties and Authority

The Engineer shall obtain the consent in writing of the Employer before taking action under the following Sub-Clauses of these Conditions:

- (a) Consenting to the subcontracting of any part of the Works under Sub-Clause 5.1 [Subcontractors]
- (b) Any action under Sub-Clauses 8.9 [Employer’s Suspension] and 8.12 [Prolonged Suspension]
- (c) Issuance of “Taking Over Certificate” under Sub-Clause 10.1 [Taking Over the Works and Sections].
- (d) Issuing the “Performance Certificate” under Sub-Clause 11.9 [Performance Certificate].
- (e) Sub-Clause 13.1 [Right to Vary]: instructing a Variation, except;
 - (i) in an emergency situation as determined by the Engineer, or
 - (ii) if such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the Contract Data.
- (f) Sub-Clause 13.3 [Variation Procedure]: approving a proposal for Variation submitted by the Contractor in accordance with Sub-Clause 13.3.2 [Variation by Request for Proposal] or 13.2 [Value Engineering].
- (g) Certifying release of second half of the Retention Money under Sub-Clause 14.9 [Release of Retention Money].
- (h) Issuing Final Payment Certificate under Sub-Clause 14.13 [Issue of FPC].
- (i)

Issue of FPC Sub Clauses

final amount due to the contractor after taking into account all works executed, variations, payments already made, deductions, claims, retention, advances, and other contractual adjustments

*[insert Sub-Clause number (not Sub-Clause 3.7 [Agreement or Determination])]

Any such requirement shall not be applied to any action by the Engineer under Sub-Clause 3.7 [Agreement or Determination], as stated in Sub-Clause 3.2 [Engineer’s Duties and Authority] of the General Conditions. Notwithstanding the obligation, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he may, without relieving the Contractor of any of his duties and responsibility under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forthwith comply, despite the absence of approval of the Employer, with any such instruction of the Engineer. The Engineer shall determine an addition to the Contract Price, in respect of such instruction, in accordance with Clause 13 and shall notify the Contractor accordingly, with a copy to the Employer.

Following is added after the words “the Employer’s consent is required” in 4th paragraph: “stating that the Employer’s consent has been obtained for that specified authority”

4.2 Performance Security

4.2.1 Contractor's Obligations

The entity issuing the Performance Security and its form shall be as under:

The Performance Security shall be, at the option of the Contractor, issued in the prescribed form included in the Bidding Documents, by (a) a Scheduled Bank in Pakistan or (b) a foreign bank duly counter-guaranteed by a Scheduled Bank in Pakistan or (c) an Insurance Company listed in the Contract Data and rated by PACRA/VIS of ratings as provided in Table below:

Accepted Contract Amount (In Eq. PKR million) Minimum Rating of Insurance Companies

Up to 1000 A (+)

1001 to no limit AA

In case of Joint Venture, the Performance Security shall be in the name of the Joint Venture or in the name of Lead/either firm of the JV or in ratio of shares of the individual JV partners.

Following paragraph is added at the end of this Sub-Clause:

“The amount of Performance Security shall be reduced to 50% following issue of the Taking-Over Certificate for the whole of the Works under Clause 10 of Conditions of Contract.”

4.3 Contractor's Representative

In second paragraph the text “professional engineer as defined in the Pakistan Engineering Council Act, 1975 (Act No. V of 1976) (having temporary licence in case of foreign engineer under Section 12 of the Pakistan Engineering Council Act, 1975 (Act No. V of 1976)” are added after the words “qualified, experienced”.

In the 3rd paragraph the words “28 days” are substituted by “14 days”. In 2nd line of 4th paragraph the text “or appoint a replacement” is substituted by “except appointment of a suitable temporary replacement is deployed at the Site”

4.4 Contractor's Documents

4.4.2 As-Built Records

First paragraph is deleted and the text in the last paragraph is substituted with the following:

“The Contractor shall furnish to the Engineer 6 copies, one reproducible and one electronic copy (provided the Engineer has made available to the Contractor editable form of the Drawings) of all Drawings amended to conform to the Works as built. In case the Engineer does not make available to the Contractor editable form of the Drawings, the Contractor shall furnish to the Engineer as-built data for incorporation in the Drawings. Upon receipt of PDF versions of the as-built drawings prepared by the Engineer, the Contractor shall furnish to the Engineer 6 copies and one reproducible of these Drawings.

The price of such Drawings shall be deemed to be included in the Contract Price.”

Following Sub-Clause is added:

4.4.4 Shop Drawings

The Contractor shall submit to the Engineer for review 3 copies of all shop and erection drawings applicable to this Contract as per provision of relevant Sub-Clause of the Contract.

Review and approval by the Engineer shall not exceed 21 days and be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory and the Engineer's review or approval shall not relieve the Contractor of any of his responsibilities under the Contract.

4.8 Health and Safety Obligations

The following text is added at the end of this Sub-Clause:

In the event of work being carried out outside the normal working hours and in the event of work being carried out at night, the Contractor shall at his own cost, provide and maintain such good and sufficient light as will enable the work to proceed satisfactorily and without danger. The approaches to the Site and the Works where the night work is being carried out shall be sufficiently lighted. All arrangement adopted for such lighting shall be to the satisfaction of the Engineer.

4.20 Progress Reports

At the end of sub-paragraph (g) the word “and” is deleted and at the end of sub-paragraph (h) the full stop (.) is replaced with “;”, and the following new sub-paragraphs are added as:

- (i) planned programme for the execution of the Works for next 56 days to enable the Engineer to determine its programme of inspection and testing;
- (j) monthly summary of daily job record indicating weather conditions, deployment of Contractor's Equipment, labour employment, local material procurement and material import, if any; and
- (k) salient contractual and project information.

5.1 Subcontractors

Add the following text at the end of paragraph (ii):

“under Schedule to Bid”

The following is added at the end of the last paragraph of Sub-Clause 5.1:

“All subcontracts relating to the Works shall include provisions which entitle the Employer to require the subcontract to be assigned to the Employer under sub-paragraph (a) of Sub-Clause 15.2.3 [After Termination].

The Contractor shall give reasonable opportunity to contractors from Islamic Republic of Pakistan for subcontracts for the Works, and endeavour to employ such contractors as Subcontractors.”

5.2 Nominated Subcontractors

5.2.2 Objection to Nomination

In sub-paragraph (c), “and” is deleted from the end of (i);

“.” at the end of (ii) is replaced with: “, and”.

The following is then added as (iii):

“(iii) be paid only if and when the Contractor has received from the Employer payments for sums due under the Subcontract referred to under Sub-Clause 5.2.3 [Payment to nominated Subcontractors].”

6.1 Engagement of Staff and Labour

The following paragraph is added at the end of the Sub-Clause:

“The Contractor shall, to the extent practicable and reasonable, employ staff (not less than 50%) and labour (not less than 85%) with appropriate qualifications and experience from sources within the Islamic Republic of Pakistan.”

6.7 Health and Safety of Personnel

The existing text is substituted with the following:

“In order to provide for the safety, health and welfare of persons, and for prevention of damage of any kind, all operations for the purposes of or in connection with the Contract shall be carried out in compliance with the Safety Requirements of the Government of Pakistan with such modifications thereto as the Engineer may authorize or direct and the Contractor shall take or cause to be taken such further measures and comply with such further requirements as the Engineer may determine to be reasonably necessary for such purpose. The Contractor shall also provide all other medical services and appoint a health and safety officer at Site if stated in the Specifications. In case of any fatality or serious accident, the Contractor shall, in addition, notify the Engineer immediately by the quickest available means.”

6.8 Contractor's Superintendence

Insert at the end of sub-paragraph (a) of this Sub-Clause:

"or, if not, the Contractor shall make competent interpreters available during all working hours, in a number sufficient for those persons to properly perform their superintendence duties"

The following text is added at the end of this Sub-Clause:

“The Contractor’s authorized representative and his other engineers working at site shall possess valid registration with the Pakistan Engineering Council.

The Contractor’s authorized representative at Site shall be authorized to exercise adequate administrative and financial powers on behalf of the Contractor so as to achieve completion of the Works as per the Contract.”

6.12 Key Personnel

The following is inserted at the end of the last paragraph:

“If any of the Key Personnel are not fluent in this language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer.”

The following Sub-Clauses 6.13 to 6.26 are added at the end of Sub-Clause 6.12:

6.13 Foreign Personnel

The Contractor may bring in to the Country any foreign personnel who are necessary for the execution of the Works to the extent allowed by the applicable Laws. The Contractor shall ensure that these personnel are provided with the required residence visas and work permits. The Employer will, if requested by the Contractor, use all reasonable endeavours in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national, or government permission required for bringing in the Contractor’s personnel.

The Contractor shall be responsible for the return of these personnel to the place where they were recruited or to their domicile. In the event of the death in the Country of any of these personnel or members of their families, the Contractor shall similarly be responsible for making the appropriate arrangements for their return or burial.

6.14 Supply of Foodstuffs

The Contractor shall arrange for the provision of a sufficient supply of suitable food as may be stated in the Specification at reasonable prices for the Contractor’s Personnel for the purposes of or in connection with the Contract.

6.15 Supply of Water

The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor’s Personnel.

6.16 Measures against Insect and Pest Nuisance

The Contractor shall at all times take the necessary precautions to protect the Contractor’s Personnel employed on the Site from insect and pest nuisance, and to reduce the danger to their health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.

6.17 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Laws of the Country, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal thereto by Contractor’s Personnel.

6.18 Arms and Ammunition

The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor’s Personnel to do so.

6.19 Festivals and Religious Customs

The Contractor shall respect the Country's recognized festivals, days of rest and religious or other customs.

6.20 Funeral Arrangements

The Contractor shall be responsible, to the extent required by local regulations, for making any funeral arrangements for any of its local employees who may die while engaged upon the Works.

6.21 Forced Labour

The Contractor, including its Subcontractors, shall not employ or engage forced labour which consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of involuntary or compulsory labour, such as indentured labour, bonded labour or similar labour-contracting arrangements.

6.22 Child Labour

The Contractor, including its Subcontractors, shall not employ or engage child labour in accordance with relevant law(s) in force in Islamic Republic of Pakistan.

6.23 Employment Records of Workers

The Contractor shall keep complete and accurate records of the employment of labour at the Site. The records shall include the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis and submitted to the Engineer. These records shall be included in the details to be submitted by the Contractor under Sub-Clause 6.10 [Contractor's Records].

6.24 Workers' Organizations

The Contractor shall comply with the relevant labour laws of Pakistan which recognize workers' rights to form and to join workers' organizations/Trade Union of their choosing and to bargain collectively without interference.

6.25 Non-Discrimination and Equal Opportunity

The Contractor shall not make decisions relating to the employment or treatment of Contractor's Personnel on the basis of personal characteristics unrelated to inherent job requirements. The Contractor shall base the employment of Contractor's Personnel on the principle of equal opportunity and fair treatment, and shall not discriminate with respect to any aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices. Special measures of protection or assistance to remedy past discrimination or selection for a particular job based on the inherent requirements of the job shall not be deemed discrimination. The Contractor shall provide protection and assistance as necessary to ensure nondiscrimination and equal opportunity, including for specific groups such as women, persons with disabilities, migrant workers and children (of working age in accordance with Sub-Clause 6.22).

6.26 Epidemics

In the event of any out-break of illness of epidemic nature, the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government or the local medical or sanitary authorities for the purpose of overcoming the same.

7.7 Ownership of Plant and Materials

The following is added before the first paragraph:

“Except as otherwise provided in the Contract,”

The following is added at the end of the Sub-Clause:

"No Plant and/or Materials that is the property of the Employer shall be removed from the Site. If it becomes necessary to:

(i) remove any item of such Plant from the Site for the purposes of repair, the Contractor shall give a Notice, with reasons, to the Engineer requesting consent to remove the defective or damaged item off the Site. This Notice shall clearly identify the item of defective or damaged Plant, and shall give details of: the defect or damage to be repaired; the place to which defective or damaged item of Plant is to be taken for repair; the transportation to be used (and insurance cover for such transportation); the proposed inspections and testing off the Site; and the planned duration required before the repaired item of Plant shall be returned to the Site. The Contractor shall also provide any further details that the Employer may reasonably require; or

(ii) replace any item(s) of such Plant and/or Materials, the Contractor shall give a Notice, with reasons, to the Engineer clearly identifying the item(s) of Plant and/or Materials to be replaced, and giving details of the due date of delivery to the Site of the replacement item(s).

Where any item of Plant and/or Materials has become the property of the Employer under this Sub-Clause before it has been delivered to the Site, the Contractor shall ensure that such an item is not moved except for its delivery to the Site.

The Contractor shall indemnify and hold the Employer harmless against and from the consequences of any defect in title or encumbrance or charge (except any reasonable restriction arising from the intellectual property rights of the manufacturer or producer) on any item of Plant and/or Materials that has become the property of the Employer under this Sub-Clause."

The following Sub-Clause 7.9 is added after Sub Clause 7.8:

7.9 Use of Pakistani Materials and Services

The Contractor shall, so far as may be consistent with the Contract, make the maximum use of materials, supplies, plant and equipment indigenous to or produced or fabricated in Pakistan and services available in Pakistan provided such materials, supplies, plant, equipment and services shall be of required standard.

8.1 Commencement of Works

The following is added before the first paragraph:

“After signing of the Contract Agreement by both Parties,” and thereafter the word “The” is replaced with the word “the”.

8.5 Extension of Time for Completion

The following is added after paragraph (c):

“for last five years”.

The following Sub-Clause 8.14 is added after Sub-Clause 8.13:

8.14 Incentives For Early Completion

If Contract Data does not state applicability of incentives for early completion, this Sub-Clause shall not apply.

The Contractor shall be entitled subject to Sub-Clause 20.2 [Claims for Payment and/or EOT] to bonus payment if the Works and/or each Section is completed earlier than the Time for Completion for the Works or Section (as the case may be). The amount of bonus for early completion of the Works and/or each Section shall be up to a limit and at a rate to 50% of the relevant limit and rate of delay damages prescribed in Contract Data and shall be paid for every day which shall elapse between the relevant Date of Completion of the Works or Section and the relevant Time for Completion.

For the purposes of calculating any bonus payment, the applicable Time for Completion stated in the Contract Data is fixed and no adjustments of this time by reason of granting an EOT will be allowed.

The following Sub-Clause 11.12 is added after Sub-Clause 11.11:

11.12 Supervisory Assistance During DNP

If provided under the Schedule of Prices, the Contractor shall provide supervisory assistance to the Employer during the DNP for the Works. Such supervisory assistance shall be as described in the Specification for the purpose of supporting the Employer's operation and maintenance of the Plant for the period specified in the Schedule of Prices after the Date of Completion.

12.2 Method of Measurement

The following paragraph is added at the end of the Sub-Clause:

“Summary of measured quantity for payment shall be delineated item-wise under four headsnamely; “Schedule of Prices Quantity”, “Quantity Executed To-date”, “Quantity Certified Previously” and “Net Quantity Executed under this Certificate”.

12.3 Valuation of the Works

The following text is added at the end of fifth paragraph of the Sub-Clause:

“Sum of overhead charges and profit for sub-paragraph (a) shall be Twenty Five percent (25%)”.

13.4 Provisional Sums

The following paragraph is inserted as the penultimate paragraph:

“The Provisional Sum shall be used to cover the Employer's share of the DAAB members' fees and expenses, in accordance with Clause 21. No prior instruction of the Engineer shall be required with respect to the work of the DAAB. The Contractor shall submit the DAAB members' invoices and the satisfactory evidence of having paid 100% of such invoices as part of the substantiation of those Statements submitted under Sub-Clause 14.3.

13.6 Adjustments for Changes in Laws

The following paragraphs are added at the end of the Sub-Clause:

“Notwithstanding the foregoing, the Contractor shall not be entitled to an extension of time if the relevant delay has already been taken into account in the determination of a previous extension of time and such Cost shall not be separately paid if the same shall already have been taken into account in the indexing of any inputs to the Table of Adjustment Data in accordance with the provisions of Sub-Clause 13.7 [Adjustments for Changes in Cost].”

14.1 The Contract Price

The following is added at the end of the Sub-Clause:

“Notwithstanding the provisions of subparagraph (b), Contractor's Equipment, including essential spare parts, imported by the Contractor for the sole purpose of executing the Contract shall be temporarily exempt from the payment of import duties and taxes upon initial importation, provided the Contractor shall post with the customs authorities at the port of entry an approved re-export bond or bank guarantee, valid until the Time for Completion plus six months, in an amount equal to the full import duties and taxes which would be payable on the assessed imported value of such Contractor's Equipment and spare parts, and callable in the event the Contractor's Equipment is not re-exported from the Country on completion of the Contract. A copy of the bond or bank guarantee endorsed by the customs authorities shall be provided by the Contractor to the Employer upon the importation of individual items of Contractor's Equipment and spare parts. Upon re-export of individual items of Contractor's Equipment or spare parts, or upon the completion of the Contract, the Contractor shall prepare, for approval by the customs authorities, an assessment of the residual value of the Contractor's Equipment and spare part to be re-exported, based on the depreciation scale(s) and other

criteria used by the customs authorities for such purposes under the provisions of the applicable Laws. Import duties and taxes shall be due and payable to the customs authorities by the Contractor on (a) the difference between the initial imported value and the residual value of the Contractor's Equipment and spare parts to re-exported; and (b) on the initial imported value of the Contractor's Equipment and spare parts remaining in the Country after completion of the Contract. Upon payment of such dues within 28 days of being invoiced, the bond or bank guarantee shall be reduced or released accordingly; otherwise the security shall be called in the full amount remaining.”

[The Employer may change or delete this Sub-Clause as per Project requirements]

14.2 Advance Payment

14.2.1 Advance Payment Guarantee

The entity issuing the Advance Payment Guarantee and its form shall be as under:

The Advance Payment Guarantee shall be in the form of Guarantee issued by (a) a Scheduled Bank in Pakistan or (b) a foreign bank duly counter-guaranteed by a Scheduled Bank in Pakistan or (c) an Insurance Company listed in the Contract Data and rated by PACRA/VIS of rating as provided in Table below:

Accepted Contract Amount (In Eq. million PKR) Minimum Rating of Insurance Companies

Up to 1000 A (+)

1001 to no limit AA

In case of Joint Venture, the Advance Payment Guarantee(s) shall be in the name of the Joint Venture or in the name of Lead/either firm of the JV or in ratio of shares of the individual JV partners.

14.6 Issue of IPC

14.6.1 The IPC

In the first line of the 1st paragraph the words “28 days” are substituted by “14 days”.

14.7 Payment

The words “or through crossed cheque in favour of the Contractor or JV partners. The Payment to JV partners shall be made at the request of the Joint Ventures in the ratio of their shares specified by them” are added at the end of the Sub-Clause.

14.8 Delayed Payment

In the first paragraph, third line, the words “compounded monthly” are deleted.

The text of 2nd paragraph is deleted and substituted with the following:

“The Employer shall pay to the Contractor compensation at the rate stated in the Contract Data.”

14.9 Release of Retention Money

The following is added at the end of Sub-Clause 14.9:

“Unless otherwise stated in the Contract, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment by the Engineer, the Contractor shall be entitled to substitute a guarantee, in the form annexed to the Particular Conditions or in another form approved by the Employer and issued by a schedule bank selected by the Contractor, for the second half of the Retention Money. The Contractor shall ensure that the guarantee is in the amounts and currencies of the second half of the Retention Money and is valid and enforceable until the Contractor has executed and completed the Works and remedied any defects, as specified for the Performance Security. On receipt by the Employer of the required guarantee, the Engineer shall certify, and the Employer shall pay the second half of the Retention Money. The release of the second half of the Retention Money against a guarantee shall then be in lieu of the release after the latest of the expiry dates of the Defects Notification Periods. The Employer shall return the guarantee to the Contractor within 21 days after receiving a copy of the Performance Certificate.

If the Performance Security required under Sub-Clause 4.2 is in the form of a demand guarantee, and the amount guaranteed under them when the Taking-Over Certificate is issued is more than half of the Retention Money, then the Retention Money guarantee will not be required. If the amount guaranteed under the Performance Security when the Taking-Over Certificate is issued is less than half of the Retention Money, the Retention Money guarantee will only be required for the difference between half of the Retention Money and the amount guaranteed under the Performance Security.

15.2 Termination for Contractor's Default

15.2.1 Notice

Following text is added at the end of sub-paragraph (h) of this Sub-Clause:

"For the purposes of this Contract, corrupt and fraudulent practices have been defined in Public Procurement Rules 2004."

15.2.3 After Termination

The word "and" at the end of sub-paragraph (ii) of paragraph (b) is deleted the following paragraph is added after sub-paragraph (iii):

"(iv) all Employer-Supplied Materials and/or Employer's Equipment made available to the Contractor in accordance with Sub-Clause 2.6 [Employer-Supplied Materials and Employer's Equipment], and"

15.4 Payment after Termination

The following text is added at the end of this Sub-Clause:

"The Employer shall be entitled to sell any of the Contractor's Equipment, Temporary Works and unused materials and apply the proceeds of sale towards payment of any debt due from the Contractor to the Employer under this Clause including any outstanding payments to the Subcontractors."

16.2 Termination by Contractor

16.2.1 Notice

The sub-paragraph (j) is deleted in its entirety.

At the end of sub-paragraph (i) " ; or" is replaced with "." and at the end of sub-paragraph (h) " ;" is replaced with " ; or".

In sub-paragraph (f) "84 days" are replaced with "180 days" and text "for reasons not attributable to the Contractor" is added at the end.

16.3 Contractor's Obligations After Termination

Sub-paragraph (c) is deleted and replaced with:

"(c) deliver to the Engineer all Employer-Supplied Materials and/or Employer's Equipment made available to the Contractor in accordance with Sub-Clause 2.6 [Employer-Supplied Materials and Employer's Equipment]; and

(d) remove all other Goods from the Site, except as necessary for safety, and leave the Site."

17.1 Responsibility for Care of the Works

After the two instances of "Goods" in the last paragraph, the words "Employer-Supplied Materials and/or Employer's Equipment" are added.

The following Sub-Clause 17.7 is added after Sub-Clause 17.6:

17.7 Use of Employer's Accommodation/Facilities

The Contractor shall take full responsibility for the care of the items of the Employer's facilities and/or accommodation, if any, as detailed in the Specification, from the date of use and/or occupation by the Contractor until the date on which such use and/or occupation is re-vested in the Employer.

If any loss or damage happens to any of the above items during a time while the Contractor is responsible for its care, arising from any cause other than a cause for which the Employer is responsible or liable, the Contractor shall promptly rectify the loss or damage at the Contractor's risk and cost.

18.1 Exceptional Events

The words "or disorder" are replaced with "disorder or sabotage" in sub-paragraph (c) of the Clause.

18.4 Consequences of an Exceptional Event

The following is added at the end of sub-paragraph (b) after deleting the "":

“, including the costs of rectifying or replacing the Works and/or Goods damaged or destroyed by Exceptional Events, to the extent they are not indemnified through the insurance policy referred to in Sub-Clause 19.2 [Insurance to be provided by the Contractor].”

18.5 Optional Termination

In sub-paragraph (c), the words "and necessarily" are added after the words "was reasonably".

19.1 General Requirements

Following text is added at the end of first paragraph:

“The Contractor shall immediately after the date of the Letter of Acceptance submit the draft of insurance policies for the Employer's consent.”

Following text is added at the end of third paragraph:

“The Contractor shall, within the respective periods stated in the Contract Data submit to the Engineer and the Employer a) evidence that the insurances described in this Clause have been effected, and b) copies of policies of the insurances described in Sub-Clauses 19.2.1, 19.2.4 and 19.2.5.”

19.2 Insurance to be provided by the Contractor

19.2.5 Injury to employees

The words "sickness, disease" are deleted in the third line of first paragraph.

The following Sub-Clause is added after Sub-Clause 19.2.6:

19.2.7 Insurance Company

“The Contractor shall be obliged to place all insurances described in this Clause with insurers listed in the Contract Data and rated by PACRA/VISOfrating as provided in Table below:

Accepted Contract Amount (In Eq. million PKR)	Minimum Rating of Insurance Companies
---	---------------------------------------

Up to 1000	A (+)
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1001 to no limit	AA
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21.6 Arbitration

The word "international" is deleted in the sixth line of first paragraph. The text of sub-paragraph (a) is substituted with the following:

“the Dispute shall be finally settled under the Rules of Arbitration, specified in the Contract Data;”

The following Clauses are added after Clause 21

22 Custom Duty

[Employer may incorporate provisions where applicable. However, in order to make the bid more balanced, the payment of Customs Duties should be the responsibility of the Employer.]

23 Taxes

The Contractor, Subcontractors and their employees shall be liable to pay income tax, withholding tax, super tax and other taxes on income arising out of the Contract. The rates and prices as stated in the contract shall be deemed to cover all such taxes.

24 Integrity Part

If it is found and established at any stage that the Contractor or any of his Subcontractors, agents or servants have violated or involved in violation of the Integrity Pact signed by the Contractor then the Employer shall be entitled to :

- (a) recover from the Contractor an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by the Contractor or any of his Subcontractors, agent or servants;
- (b) terminate the Contract; and
- (c) recover from the Contractor any loss or damage to the Employer as a result of such termination or of any other corrupt business practices of the Contractor or any of his Subcontractors, agent or servants.

The termination under sub-paragraph(b) of this Sub-Clause shall proceed in the manner prescribed under Sub-Clause 15.1 to 15.4 and the payment under Sub-Clause 15.4 shall be made after having deducted the amounts due to the Employer under sub-paragraph(a) and (c) of this Sub-Clause.

Appendix General Conditions of Dispute Avoidance/Adjudication Agreement

12 Disputes Under DAAB Agreement

In the first paragraph, third, fourth and fifth line, the text “under the Rules of Arbitration of the International Chamber of Commerce 2017.....shall apply” is substituted with “under the Arbitration Act 1940 by sole arbitrator appointed by the Managing Director Public Procurement Regulatory Authority or Chairman Pakistan Engineering Council.”



Bid Securing Declaration

FORM OF BID SECURING DECLARATION

Date:

No.:

Alternative No.: **P105796**

To: **IESCO-PMU (Islamabad Electric Supply Company (IESCO)), Director PMU Office Adjacent to 132 KV Rawal Grid Station, Club Road, Kashmir Chowk, Islamabad Capital Territory**

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:

- (a) have withdrawn our Bid during the period of Bid validity specified in the Letter of Bid; or
- (b) having been notified of the acceptance of our Bid by the Procuring agency/Employer during the period of Bid validity, (i) fail or refuse to sign the Contract; or (ii) fail or refuse to furnish the Performance Security (or guarantee), if required, in accordance with the ITB.

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 days after the expiration of our Bid.

Name of the Bidder*

Name of the person duly authorized to sign the Bid on behalf of the Bidder** _____

Title of the person signing the Bid _____

Signature of the person named above _____

Date signed _____ day of _____, _____

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

**: Person signing the Bid shall have the power of attorney given by the Bidder attached to the Bid

[Note: In case of a Joint Venture, the Bid-Securing Declaration must be in the name of all members to the Joint Venture that submits the Bid.]



Contract Form

FORM OF CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the “Agreement”) made on the _____ day of _____ (month) 20____ between **IESCO-PMU (Islamabad Electric Supply Company (IESCO)), Director PMU Office Adjacent to 132 KV Rawal Grid Station, Club Road, Kashmir Chowk, Islamabad Capital Territory** (hereinafter called the “Employer”) of the one part and _____ (hereinafter called the “Contractor”) of the other part.

WHEREAS the Employer is desirous that certain Works, viz., **Proc: of Supply, Installation, Testing & Commissioning of Asset Performance Management System (APMS) on revised PPMC spec No.PPMC-DS-01:2026 & its Configuration & Interfacing with AMI system as per SoR (Rs.1,347 M) incl: 18% GST & 16% PST in IESCO (P105796)** should be executed by the Contractor and has accepted a Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

NOW this Agreement witnessed as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents, in the order of priority, after incorporating addenda, if any, except those parts relating to Instructions to Bidders shall be deemed to form and be read and construed as part of this Agreement:
 - a) This Contract Agreement;
 - b) The Letter of Acceptance;
 - c) The Letter of Bid;
 - d) The Particular Conditions Part A - Contract Data;
 - e) The Particular Conditions Part B - SpecialProvisions;
 - f) The General Conditions;
 - g) The Specifications Part A - SpecificProvisions;
 - h) The Specifications Part B- Technical Provisions;
 - i) The Drawings;
 - j) The Completed Schedules to Bid including Schedule of Prices;
 - k) the JV Undertaking (if the Contractor is a JV); and
 - l) [Employer to insert any other documents forming part of the Contract]

The addenda/corrigenda,if any, (Excluding part relating to Instructions to Bidders alongwith Bidding Data) shall be deemed to have been incorporated at the appropriate places in the “Documents forming the Contract”.

3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy defects therein in conformity and in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor, in consideration of the execution and completion of the Works as per provisions of the Contract, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS WHEREOF the parties hereto have caused this Agreement to be executed on the day, month and year first before written in accordance with their respective laws.

Signature of the Contactor Signature of Employer

(Seal) (Seal)

Signed, Sealed and Delivered in the presence of:

Witness Witness

(Name, Title and Address) (Name, Title and Address)



DAAB Agreement

[All italicised text and any text within square brackets (except sub-clause headings) in this form of agreement is for use in preparing the form and should be deleted from the final product].

Name and details of the Contract Proc: of Supply, Installation, Testing & Commissioning of Asset Performance Management System (APMS) on revised PPMC spec No.PPMC-DS-01:2026 & its Configuration & Interfacing with AMI system as per SoR (Rs.1,347 M) incl: 18% GST & 16% PST in IESCO

This Agreement made the _____ day of _____ [month], _____ [year], between

Name and contact details of the Employer **IESCO-PMU (Islamabad Electric Supply Company (IESCO)), Director**

PMU Office Adjacent to 132 KV Rawal Grid Station, Club Road, Kashmir Chowk, Islamabad Capital Territory

+92-319-599-2205

iescopmu@iesco.com.pk

Name and contact details of the Contractor _____ (name)

_____ (address)

_____ (telephone)

_____ (email / other contact details);

Name and contact details of the DAAB Member _____ (name)

_____ (address)

_____ (telephone)

_____ (email / other contact details);

("DAAB Agreement")

Whereas:

A. the Employer and the Contractor have entered (or intend to enter) into the Contract;

B. under the Contract, the "DAAB" or "Dispute Avoidance/Adjudication Board" means the sole member or three members (as stated in the Contract Data of the Contract) so named in the Contract, or appointed under Sub-Clause 21.1 [Constitution of the DAAB] or Sub-Clause 21.2 [Failure to Appoint DAAB Members] of the Conditions of Contract;

C. the Employer and the Contractor desire jointly to appoint the above-named DAAB Member to act on the DAAB as:

a. the sole member of the DAAB, and where this is the case, all references to the "Other Members" do not apply; or

b. one of three members / chairman [delete the one which is not applicable] of the DAAB and, where this is the case, the other two persons are:

_____(name) _____(name)
_____(address) _____(address)
_____(telephone) _____(telephone)
_____(email/ other contact details) _____(email/other contact details)

the “Other Members”; and

D. the DAAB Member accepts this appointment.

The Employer, Contractor and DAAB Member jointly agree as follows:

1. The conditions of this DAAB Agreement comprise:

(a) Clause 21 [Disputes and Arbitration] of the Conditions of Contract, and any other provisions of the Contract that are applicable to the DAAB’s Activities; and

(b) the “General Conditions of Dispute Avoidance/Adjudication Agreement”, which is appended to the General Conditions of the “Conditions of Contract for Construction” Second Edition 2017 published by FIDIC (“GCs”), as amended and/or added to by the following provisions.

2. [Details of amendments to the GCs, if any. For example:

In the procedural rules annexed to the GCs, Rule _ is deleted and replaced by: “ ... “]

3. The DAAB Member shall be paid in accordance with Clause 9 of the GCs. The currency of payment shall be _____.

In respect of Sub-Clauses 9.1 and 9.2 of the GCs, the amounts of the DAAB Member’s monthly fee and daily fee shall be:

monthly fee _____ per month, and

daily fee of _____ per day

(or as otherwise set under Sub-Clause 9.3 of the GCs).

4. In consideration of the above fees, and other payments to be made to the DAAB Member in accordance with the GCs, the DAAB Member undertakes to act as DAAB Member in accordance with the terms of this DAAB Agreement.

5. The Employer and the Contractor shall be jointly and severally liable for the DAAB Member’s fees and other payments to be made to the DAAB Member in accordance with the GCs.

6. This DAAB Agreement shall be governed by the law of _____ (if not stated, the law that governs the Contract under Sub-Clause 1.4 of the Conditions of Contract).

SIGNED by: _____ SIGNED by: _____ SIGNED by: _____
Print name: _____ Print name: _____ DAAB Member
Title: _____ Title: _____ Title: _____

for and on behalf of the

Employer for and on behalf of the

Contractor

in the presence of in the presence of in the presence of

Witness: _____ Witness: _____ Witness: _____

Name: _____ Name: _____ Name: _____

Address: _____ Address: _____ Address: _____

Date: _____ Date: _____ Date: _____

FORM OF MOBILIZATION ADVANCE GUARANTEE/ BOND

Guarantee No. _____ Date _____

WHEREAS _____ (hereinafter called the 'Employer')

has entered into a Contract for _____

(Particulars of Contract)

with _____ (hereinafter called the "Contractor").

AND WHEREAS, the Employer has agreed to advance to the Contractor, at the Contractor's request, an amount of Pak Rupees _____ (PKR _____) which amount shall be advanced to the Contractor as per provisions of the Contract.

AND WHEREAS, the Employer has asked the Contractor to furnish Guarantee to secure the mobilization advance for the performance of his obligations under the said Contract.

AND WHEREAS, _____

(hereinafter called the "Guarantor") at the request of the Contractor and in consideration of the Employer agreeing to make the above advance to the Contractor, has agreed to furnish the said Guarantee.

NOW, THEREFORE, the Guarantor hereby guarantees that the Contractor shall use the advance for the purpose of above mentioned Contract and if he fails and commits default in fulfilment of any of his obligations for which the advance payment is made, the Guarantor shall be liable to the Employer for payment not exceeding the aforementioned amount.

Notice in writing of any default, on the part of the Contractor, of which the Employer at his discretion of making decision, shall be given by the Employer to the Guarantor, and on such first written demand, payment shall be made by the Guarantor of all sums then due under this Guarantee without any reference to the Contractor and without any objection.

This Guarantee shall remain in force until the advance is fully adjusted against payments from the Interim Payment Certificates of the Contractor or until _____ whichever is earlier.

(Date)

The Guarantor's liability under this Guarantee shall not in any case exceed the sum of PKR _____ (Pak Rupees _____).

This Guarantee shall remain valid up to the aforesaid date and shall be null and void after the aforesaid date or earlier if the advance made to the Contractor is fully adjusted against payments from Interim Payment Certificates of the Contractor provided that the Guarantor

agrees that the aforesaid period of validity shall be deemed to be extended if on the above mentioned date the advance payment is not fully adjusted.

Guarantor
(Scheduled Bank/ Insurance Company)

Signature _____

Name _____

Title _____

WITNESS:

1. _____

Corporate Secretary (Seal) Corporate Guarantor (Seal)
2. _____

Name, Title & Address



Retention Money Security Demand Guarantee

_____ [Guarantor letterhead or SWIFT identifier code]

Beneficiary: _____ [Insert name and Address of Employer]

Date: _____ [Insert date of issue]

RETENTION MONEY GUARANTEE No.: [Insert guarantee reference number]

Guarantor: [Insert name and address of place of issue, unless indicated in the letterhead]

We have been informed that _____ [insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture] (hereinafter called "the Contractor") has entered into Contract No. _____ [insert reference number of the contract] dated _____ with the Employer, for the execution of _____ [insert name of contract and brief description of Works] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, the Employer retains moneys up to the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, payment of [insert the second half of the Retention Money or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money, the difference between half of the Retention Money and the amount guaranteed under the Performance Security and, if required, the ES Performance Security] is to be made against a Retention Money guarantee.

At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ [insert amount in figures] () [amount in words] upon receipt by us of the Employer's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without your needing to prove or show grounds for your demand or the sum specified therein.

A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Employer's bank stating that the second half of the Retention Money as referred to above has been credited to the contractor on its account number _____ at _____ [insert name and address of Contractor's bank].

This guarantee shall expire no later than the day of, 2..., and any demand for payment under it must be received by us at the office indicated above on or before that date.

[signature(s)]

Note: *All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.*



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.

Name of Employer:

Signature:

[Seal]

Name of Bidder/Contractor:

Signature:

[Seal]



Performance Guarantee Form

FORM OF PERFORMANCE SECURITY

Guarantee No. _____

Executed on _____

Expiry date _____

Name _____ of _____ Guarantor _____ with _____ address: _____

Name _____ of _____ Principal _____ (Contractor) _____ with
address: _____

Penal Sum of Security (express in words and figures) _____

Letter of Acceptance No. _____ Dated _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bidding Documents and above said Letter of Acceptance (hereinafter called the Documents) and at the request of the said Principal we, the Guarantor above named, are held and firmly bound unto the **IESCO-PMU (Islamabad Electric Supply Company (IESCO)), Director PMU Office Adjacent to 132 KV Rawal Grid Station, Club Road, Kashmir Chowk, Islamabad Capital Territory** (hereinafter called the Employer) in the penal sum of the amount stated above for the payment of which sum well and truly to be made to the said Employer, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has accepted the Employer's above said Letter of Acceptance for _____

(Name of Contract) for the **Proc: of Supply, Installation, Testing & Commissioning of Asset Performance Management System (APMS) on revised PPMC spec No.PPMC-DS-01:2026 & its Configuration & Interfacing with AMI system as per SoR (Rs.1,347 M) incl: 18% GST & 16% PST in IESCO (P105796)**

_____ (Name of Project).

NOW THEREFORE, if the Principal (Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the Employer, with or without notice to the Guarantor, which notice is, hereby, waived and shall also well and truly perform and fulfill all the undertakings, covenants terms and conditions of the Contract and of any and all modifications of said Documents that may hereafter be made, notice of which modifications to the Guarantor being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue till all requirements of Clause11, Defects After Taking Over, of Conditions of Contract are fulfilled.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of any liability attaching to us under this Guarantee that the claim for payment in writing shall be received by us within the validity period of this Guarantee, failing which we shall be discharged of our liability, if any, under this Guarantee.

We, _____ (the Guarantor), waiving all objections and defense under the Contract, do hereby irrevocably and independently guarantee to pay to the Employer without delay upon the Employer's first written demand without cavil or arguments and without requiring the Employer to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the Employer's written declaration that the Principal has refused or failed to perform the obligations under the Contract which payment will be effected by the Guarantor to Employer's designated Bank & Account Number.

PROVIDED ALSO THAT the Employer shall decide, whether the Principal (Contractor) has duly performed his obligations under the Contract or has defaulted in fulfilling said obligations and the Guarantor shall pay without objection any sum or sums up to the amount stated above upon first written demand from the Employer forthwith and without any reference to the Principal or any other person.

IN WITNESS WHEREOF, the above-bounden Guarantor has executed this Instrument under its seal on the date indicated above, the name and corporate seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Guarantor

(Schedule Bank/ Insurance Company)

Signature: _____

Name: _____

Title: _____

Corporate Guarantor (Seal)

WITNESS:

1.

2.

Name, Title & Address



Annexure

Schedule of Requirements

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Schedule of Requirements** (page number: 107)

Specification APMS DS-01 Complete

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Specification APMS DS-01 Complete** (page number: 117)

Form of Bid

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Form of Bid** (page number: 172)

Domestic Preference

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Domestic Preference** (page number: 201)

price Schedule Form

Financial Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **price Schedule Form** (page number: 203)

Specification WASP

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Specification WASP** (page number: 212)

Definations annexure

Information (Read-Only)

See Form Under Additional Forms and Documents: **Definations annexure** (page number: 223)

cert regarding cyber security details

Information (Read-Only)

See Form Under Additional Forms and Documents: **cert regarding cyber security details** (page number: 224)





Procurement Forms

Past Construction Experiences

Description	Single Entity	Lead Partner	JV Partner	Evidence
The bidder/ Manufacturer/OEM shall demonstrate a minimum of five(05) years' experience in design, manufacturing, supply or integration of APMS or other similar/comparable (APMS/TMS/AMI) related to power utilities. The Manufacturer/OEM shall demonstrate at least one (01) successfully completed and satisfactorily operating reference of APMS/TMS/AMI or any other project of power sector 0.4kV or above rated project.	The manufacturer must meet	any one partner meet	any one partner meet	Performance Certificate Supply record

See Form Under Additional Forms and Documents: **Past Construction Experiences** (page number: 225)

Contractor's Key Personnel Representative and Their Schedules

as per SOR

See Form Under Additional Forms and Documents: **Contractor's Key Personnel Representative and Their Schedules** (page number: 231)

Financial Resources

Description	Requirement	Single Entity	Lead Partner	Member Partner	Evidence
-------------	-------------	---------------	--------------	----------------	----------

Specify proposed sources of financing, working capital, lines of credit, and other financial means after deduction of current commitments available to meet the cash flow demands as indicated 1. The bidder/JV shall demonstrate above financial resources after deduction of current commitment Cash Flow = Working Capital + bank Credit Line Facility - Deduction of Current Commitment The bidder will provide a confirmed credit line facility from a scheduled bank to meet the above financial criteria. However, no other credit facility to be accepted	Rs.250	Must meet	75%	25%	Audited financial report and credit facility and current commitment
---	--------	-----------	-----	-----	---

See Form Under Additional Forms and Documents: **Financial Resources** (page number: 235)

Past Experience and Completed Contracts

Description	Requirement	Single Entity	Lead part	Member Partner	Evidence
-------------	-------------	---------------	-----------	----------------	----------

The Bidder/JV shall demonstrate successful completion of at least two (02) contracts during the last (10) years of similar or comparable nature involving APMS/TMS/AMI, asset management system). The aggregate value of two (02) qualifying contracts shall be not less than Rs. 400millioninvolving comparable works/ supply/ installation(APMS/TMS/AMI/asset management system /Distribution/Grid automation system /supply/ installationprojects of power sector 0.4kV OR higher rated.	Rs 400 Million	Must Meet	Any partner	Any partner	Contract agreement, PO and Completion certificate
---	----------------	-----------	-------------	-------------	---

See Form Under Additional Forms and Documents: **Past Experience and Completed Contracts** (page number: 236)

Historical Contract Non-Performance, and Pending Litigation and Litigation History

Criteria Requirement	Compliance Requirements by All Partners/Single Entities	Documents Submission Requirement
All pending litigation, arbitration, Greivance Redressal Committee (GRC) and Appellate GRC or other material events impacting the net worth and/or liquidity of the bidder, if any, shall be treated as resolved against the Bidder and so shall in total not represent more than 25% (twenty-five per cent) of the Bidder's last year net worth calculated as the difference between total assets and total liabilities	Must meet requirement	Relevant Document and undertaking

See Form Under Additional Forms and Documents: **Historical Contract Non-Performance, and Pending Litigation and Litigation History** (page number: 237)

Current Contracts and Their Progress

Bidders and each partner in a JV should provide information on their current commitments on all contracts/orders that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts/orders approaching completion but for which an unqualified delivery certificate has yet to be issued.

Sr. No.	Name of Contract/Order	Employer's Contact Address, Tel, Fax	Value of Outstanding orders [Pak Rupee Equivalent]	Estimated Delivery Date	Average Monthly Invoicing Over Last Six Months (Pak Rupee month)
1					
2					
3					
4					
5					

See Form Under Additional Forms and Documents: **Current Contracts and Their Progress** (page number: 239)

Financial Capacity and Net Worth Evaluation Form

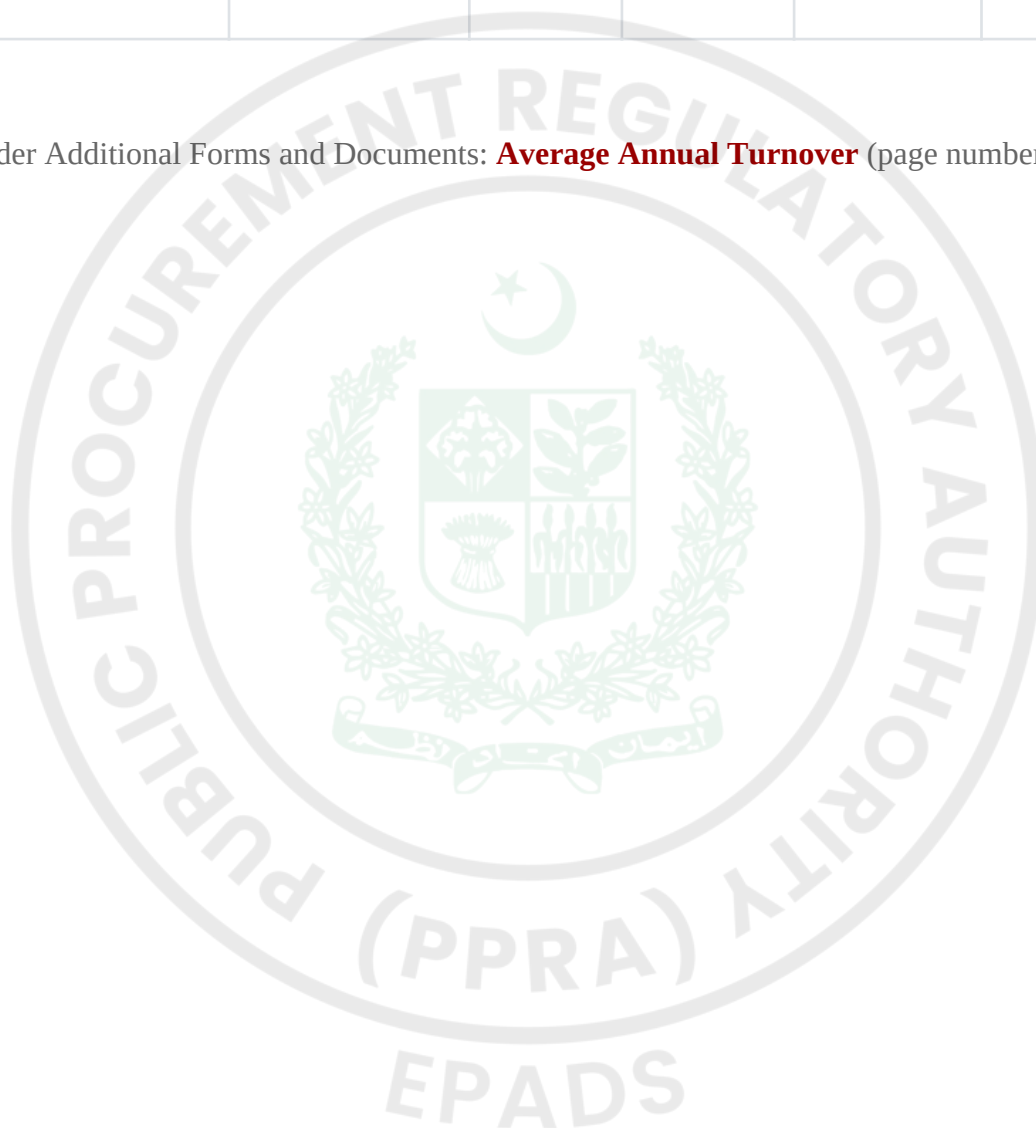
The bidder's net worth for the last three years, calculated as the difference between total assets and total liabilities, should be positive. The financial audit report should be verifiable from the UDIN portal of the ICAP. In case the audit reports are not verifiable from the UDIN, then AAT, net worth and financial resources shall be calculated from the income and sales tax return for the last three years. Therefore, the bidder shall provide both documents, i.e., the audited report of the last three years and the income tax and sales tax returns of the last three years. failure to provide the said documents means the bid shall be consider incomplete and liable for rejection Incase of a foreign partner, an audited report must be translated into English and duly attested by the respective chamber of commerce

See Form Under Additional Forms and Documents: **Financial Capacity and Net Worth Evaluation Form** (page number: 240)

Average Annual Turnover

Description	Requirement	Single Entity	Lead Partner	Member Partner	Evidence
The minimum average annual turnover of PKR calculated as the total revenue of the bidder over the last three years shall be equal to	Rs. 1500 Million	Must Meet	75%	25%	Audited report and sale taxes returned for Local AoP

See Form Under Additional Forms and Documents: **Average Annual Turnover** (page number: 242)







Additional Forms and Documents

SCHEDULE OF REQUIREMENTS, TECHNICAL SPECIFICATIONS





1. **Technical Specification**

- i. All designs, equipment, materials and workmanship shall comply with and be tested in accordance with requirements of the specification of **PPMC-DS-01:2026 having ordering code (APMS-CB-S-100), (APMS-CB-S-200), (APMS-CB-OTL-100) & (APMS-CB-OTL-200) except SMCD. IESCO AMI LT TOU meter specifications with additional event/alarms demand (described in this document) should be followed for SMCD portion.** Equipment or parts or additional features, which are not covered by the specifications, shall comply special requirement as per **article-2 of this section.**
- ii. AMI Energy Meter LT (ToU) CT operated shall comply IESCO AMI Specification (copy attached).
- iii. All component of APMS either type tested acceptable to procuring agency or will undertake for fresh type testing from ILAC or IEC registered lab.
- iv. The contract shall be executed in strict conformity with the specifications and/or Drawings given or mentioned in this section and the supplier shall do no 'Work' without proper specifications, instructions and/or Drawings.
- v. Specifications and/or drawings are intended to complement each other so that if anything is shown on the drawings as required but not mentioned in the specifications or vice versa. It shall be of like effect as if shown or mentioned in both. If any error, omission or discrepancy is found in the figures, specifications and/or drawings or, if any feature shall appear to the supplier to be indefinite or unclear, the same shall be referred to the Purchaser whose written explanation and/or clarification shall be obtained before proceeding with the work.
- vi. The Manufacturer shall submit to Purchaser under intimation to the Purchaser, within **30 days** of the issuance of the Notification of Award, for approval of the Purchaser, **four (4) copies** of all drawings technical literature, data, operation and maintenance instruction books and/or manuals required under the specifications and such other documents as per required in the Technical Specifications or other provisions of the bidding documents or, if Purchaser deems necessary, require changes or modifications to be made therein, Purchaser shall return two copies to the Manufacturer/Supplier marked. "Approved", "Approved as Noted" or "Returned for Correction". Each drawing, which is noted "Returned for Correction".
- vii. The Manufacturer/Supplier after incorporating the desired changes in the drawing shall resubmit four (4) sets of the same to the Purchaser for approval. Two prints of which shall be stamped "APPROVED" by the Purchaser and returned to the Manufacturer/Supplier for his record. On completion of

the Contract, the Manufacturer / Supplier shall deliver to the Purchaser four (4) prints of all approved drawings, technical literature, data which show the work in the final or “as built” condition. The said drawings and documents shall be permanent and non-fadable. In addition to above, two soft copies of above-mentioned final drawings made on Auto CAD (latest version) on two separate CDs shall also be provided to the Purchaser.

- viii. The Manufacturer/Supplier shall allow 15 days for the Purchaser’s approval of drawings in his schedule of work and in the time allowed for completion of the Contract. Extra time required for approval of drawings due to deficiencies in design or errors in submitted drawings shall be the responsibility of the Manufacturer/Supplier and no extension in time will be allowed on this account. Delays in obtained approval caused by the Purchaser beyond 15 days will entitle the Supplier to an extension of time.
- ix. Approval by the Purchaser does not relieve the Manufacturer/Supplier of his responsibility to do the work in accordance with the Contract.
- x. The Manufacturer/Supplier shall be responsible for any discrepancies, errors and omissions in any drawings or other particulars supplied by him whether the Purchaser has approved such drawings or particulars or not.
- xi. All drawings and documents furnished by the Manufacturer/Supplier in accordance with the Contract shall become the property of the Purchaser.
- xii. Wherever reference is made in the Technical Specifications to specific standards and codes to be met by the goods and materials to be furnished or tested, the provisions of the latest current edition or revision of the relevant standards or codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relates to a particular country or regions, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.
- xiii. The latest updated version of specifications shall be applicable. (Amended to date - In effect as at the date 42 days prior to bid submission)
- xiv. Copies of the Technical specifications are attached as Annexure to the bidding document.
- xv. The bidder is required to fill the requisite schedule of technical data as per attached Specifications and submit the same with the bid for each equipment / material etc. A bid without schedule of technical data (filled in) will be considered as non-responsive
- xvi. The Equipment shall be designed and constructed for indoor/Outdoor installation and shall be suitable for satisfactory operation under the following service conditions:

a) CLIMATE CONDITION

Sr	Particular	Specified Value
----	------------	-----------------

#		
1.	Ambient Temperature	
i.	Maximum Temperature	55° C
ii.	Minimum Temperature	-20° C
iii.	Mean Temperature in a Year	35° C
iv.	Mean Temperature in a Day	50° C
2.	Relative Humidity	10 to 100%
3.	Altitude	1000 M
4.	Isoceraunic level (day/Year)	50
5.	Wind velocity	45
6.	Seismic level (Horizontal acceleration)	0.4g
7.	Pollution	High corrosive dust

It may be assumed that the air is heavily polluted by dust, smoke, aggressive gases, vapours or salt spray. However, at certain times of the year severe dust storms may be experienced

b) OPERATING CONDITIONS:

Sr#	Particular	Specified Value
1	System Highest Voltage	415V
2	System Voltage (L-L)	415 V
3	System Voltage (L-G)	240 V
4	Frequency	50%±0.5Hz
5	Neutral Earthing	Solid Ground
9	Creepage Distance for insulator	31mm/kV
10	Power frequency with Stand for one Minute	2.5kV Phase to Phase
11	Impulse withstand 1.2/50 µS	8kV
12	K factor where altitude >1000 Meter	
I	1500 Meter	K= 1.1
II	2000 Meter	K=1.2
III	2500 Meter	K=1.3

2. Special Requirement

- i. **The short circuit withstand of Motorized & non-Motorized MCCB for one second shall be equal to breaking capacity of offered type of MCCB.**
- ii. **MCCB shall be electronic/Microprocessor based mechanism.**
- iii. APMS shall be assembled as per specification as mentioned in this section article-1(i).
- iv. Enclosure for APMS shall be fabricated in such way that each component has a separate compartment.
- v. Although DCU is not in scope of the APMS, however, enclosure shall also possess compartment for Data concentrator Unit (DCU) and its connection facility with Energy meter.
- vi. Similarly, enclosure shall have facility to connect Active Harmonic Filter if required at site.
- vii. Contractor is responsible for Design, supply, installation, Testing & Commissioning Configuration/integration with IESCO AMI system.
- viii. Contractor shall be responsible for balancing of load on each phase of Transformer with Maximum 10% deviation from each phase. In case, the said task is impossible to achieve without additional span of conductor or any other material to be installed, the material will be provided by Employer and installed by contractor.

- ix. Contractor shall be responsible for replacement of two phase or damage transformer, however, IESCO will provide the new transformer.
- x. Contractor will be responsible for fixing of Busbar with AAC WASP and Connection of APMS through 4 core cable as per drawings.
- xi. Contractor is responsible with installation of communication "SIM" provided by authorized representative of Procuring agency. If Procuring agency informs about low coverage of network related to installed sim, contractor will replace SIM (to be provide by Employer) to ensure proper communication.
- xii. Contractor is responsible for configuration and compliance of functionality as per specification with IESCO AMI system. Project Director (AMI) will certify for each transformer for testing, commissioning and configuration.
- xiii. Contractor is responsible for replacement of damaged D-fitting, however, D-fitting shall be provided by procuring agency.
- xiv. Contractor is responsible for returning of damaged Transformer, removed material (if any) to Regional Store or field Store as per direction of PD (AMI) after testing of Circle Manager (M&T). The said testing is necessary for removed transformers only.

3. APMS System /Software

- i. APMS System will compatible with existing IESCO AMI system including but not limited to HES and other relevant standard /customized system. Contractor will establish integration of its APMS software with Employer's AMI System using integration techniques already used for integrating different software components of existing solutions. Details will be shared with successful bidder and Employer's team will assist contractor in establishing said integration.
- ii. APMS system will assess events related APMS. /power parameter as defined thereon in APMS specification prepared by PPMC.
- iii. System shall be capable to assess the transformer health including temperature of winding and oil, reverse power flow resulting DG generation, Harmonics analysis minnum 50th orders. (Both wave and spectrum).
- iv. System shall also be capable to assess and operate the var compensator.
- v. Contractor will conduct requirement analysis sessions with Employer's nominated team and incorporate all requirements conveyed in software solution to meet requirements of Employer.
- vi. Configurations of all events and alarm defined during requirement analysis and defined in specification / bid document should be flexible to adjust through system commands / firmware upgrade of SMCD. Contractor shall be responsible for providing assistance for such configuration changes and will also provide access to Employer for such actions.
- vii. 10,000 licenses of software, metering points and any other involved licenses will be provided by contractor along with Software solution.
- viii. Contractor will be responsible for provision of additional licenses if required by Employer at later stage. Contractor will convey cost per additional license along with bid for assessment by evaluation committee of Employer.
- ix. Hardware required to host and maintain services of said software will be supplied and installed by contractor.
- x. Contractor will be responsible for provision of service in case of any

- downtime related to said software. Both hardware and software fixings to be done by contractor during warranty period within minimum possible time as per national and international standards. Resources of contractor will be available physically/online to meet emergencies as discussed.
- xi. Contractor will offer SLA for post-warranty period and Employer will decide whether to opt to SLA or otherwise.
 - xii. Contractor will provide following trainings on his own resources:
 - i. End User training for 50 users describing installation, functionalities of software and APMS monitoring techniques.
 - ii. Master trainers training for 7 users covering points mentioned in i. Additionally, these users will be trained to handle roles and responsibilities inside software, error handling, report generation, configuration change mechanism etc.
 - iii. Any other training requested by Employer related to APMS.
 - xiii. The trainings explained above will be conducted at venue decided and provided by Employer. Multimedia, computers etc. will also be provided by Employer. However, refreshment, lunch etc. arrangements will be provided by contractor.
 - xiv. Contractor will submit training plan after contract agreement which will be reviewed, amended and approved by Employer.
 - xv. Contractor will provide API to share required data from provided software to PITC database for centralized reporting purposes. The data format will be provided after contract signing and frequency of sharing will also be provided i.e. hourly, daily, monthly etc.
 - xvi. Cert details to be provided by haris.
 - xvii. Software provided by contractor shall be equipped with reporting tool. Standards reports will be decided at time of requirement analysis of software. However, software should be capable of generating user defined reports using software front end tools.
 - xviii. The proposed software solution, including all applications, modules, components, interfaces, databases, APIs and associated services, shall comply with all applicable cybersecurity and information-security laws, regulations, policies, standards and guidelines of the Government of Pakistan and National CERT (nCERT/PKCERT), including the applicable requirements and controls of the Pakistan Information Security Framework (PISF), as amended or updated from time to time. The software shall incorporate appropriate security controls throughout its lifecycle, including secure software acquisition and development practices, access control, data protection, vulnerability and patch management, security testing, audit logging, incident response and supply-chain security. The Bidder/Vendor shall provide relevant security and compliance documentation and shall ensure that the proposed solution is free from malicious code, unauthorized access mechanisms, security backdoors and known exploitable vulnerabilities. Where applicable, the software shall be subject to security assessment, screening, vulnerability assessment, penetration testing, audit or validation by the Purchaser or the competent authority prior to deployment and during the contract period. The Contractor shall be responsible for obtaining, at its own cost, all applicable cybersecurity assessments, screening, evaluation, certification and/or approvals for the proposed software from National CERT (nCERT/PKCERT), PSS and/or any other relevant competent authority, as applicable under the prevailing Government of Pakistan cybersecurity requirements and standards. The Contractor shall facilitate all required technical

evaluations, security testing and assessments, address any observations or identified vulnerabilities, and obtain the applicable certificate, clearance, assessment report and/or approval prior to final acceptance and deployment of the software.

4. LANGUAGE

- i. All correspondence, literature, drawings, name plates, diagrams, applicable data, equipment details, instructions and maintenance books and manuals, spare parts, books and descriptive data shall be in the English language.

5. TESTS

- ii. The APMS shall be tested as per Specification PPMC-DS-01:2026
- iii. Component of APMS shall be tested as per IEC standard or ILAC or STL lab.
- iv. The Manufacturer shall provide valid type test reports of each component and assembled APMS with the bid as per specification. In case the type test reports furnished by the bidder are not from one of the laboratories mentioned in specification or any other reputed independent testing laboratories accredited by STL (Short-Circuit Testing Liaison) or are not relevant to the equipment offered or do not meet or comply with the ratings and other requirements of the Purchaser's Specifications included in this bidding document or are otherwise not to the satisfaction of the Purchaser in any respect, the Manufacturer bidder has to arrange Type testing at any one lab mentioned in specification at the cost and arrangement of manufacturer without disturbing the stipulated delivery period given above duly witnessed by IESCO Engineers.
- v. Manufacturer will provide unconditional undertaking for fresh /new type testing from following Labs.

6. Completion Period

- i. The completion period for work is 270 days , after the start date from signing of contract agreement. 0.05% of quoted bid price per day shall be load on the late completion of maximum 30 days. Completion schedule beyond 30 days from completion following stipulated time, bid shall be rejected. No credit will be given for early completion.
- ii. Each bidder shall provide implementation schedule by using MS-project or Primavera or Excel sheet in shape of GANT Chart which indicate each WBS and Milestone etc.

7. Personnel and Technical Team

Contractor shall ensure following Technical team during execution of Projects

Sr.	Description	No.	Role	Qualification
1	Project Director	01	Lead Team	I. He will be Bachelor or Master in Electrical Engineer II. He must posses 15 year Experience and out of 15 years he must have 10 year Distribution experience in DISCO III. He must have experience to

				lead in Turnkey project.
2	Site Manager	4	Site Engineer	I. He will be Bachelor or Master in Electrical / Electronic Engineering II. He must possess 10-year Experience and out of 10 years he must have 5 year Distribution experience in DISCO III. He must have experience to lead in Turnkey project.
	I & C Engineer	2		I. He will be Bachelor or Master in Electrical / Electronic Engineering II. He must have 5-year instrumentation and Control experience III. He must have experience to lead in Turnkey project.
3	Line Superintend	10	Supervsior	I. He will be 3-year diploma (DAE) of Associate Engineer in Electrical. II. Experience in operation, or maintaince of Electrical Distribution system will be preferred.
4	Line Man	15 per Division		I. Matric in (Science) minimum required II. Good Physical fitness required III. Ability
	Assistant Lineman	30 per Division		
	I&C Technical	15		

8. Area of Installation & Scope

APMS shall be installed in IESCO Jurisdiction including Murree Tehsil

100kVA Pole Mounted DTF	100kVA Pole Mounted DTF
1227	2303

9. Specifications

Description	Specification No.
CT Operated LT ToU Energy Meter	IESCO AMI -01

AAC WASP	P-163:2007
PVC 4 Core Cable	DDS-8:2007
Spool Insulator	PD-4:67
D-Shackle	DDS-PD-68:70
LT CT	DDS 80:2007



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

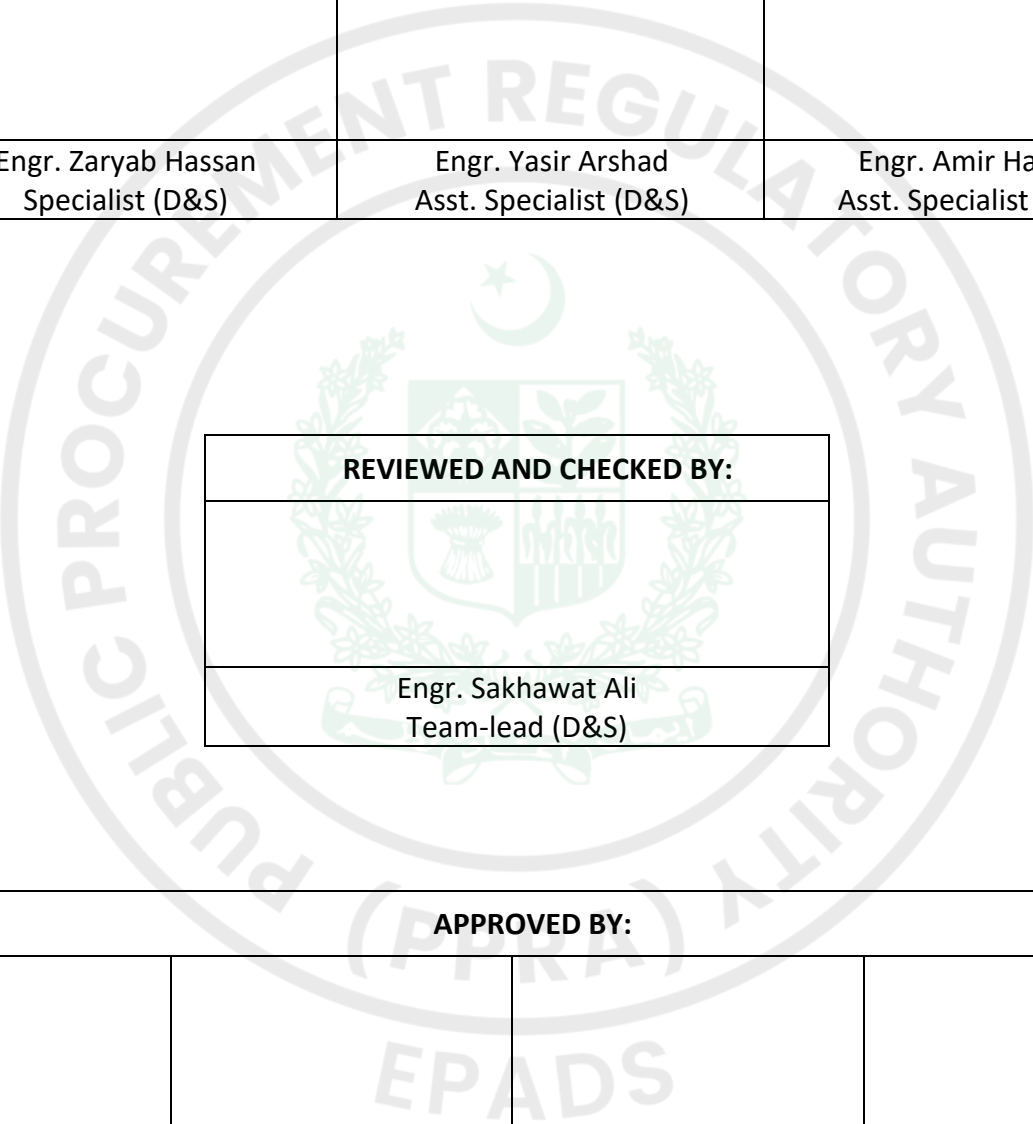
Version	Document No.	Dated	Effective date of Application	Remarks
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1.1	Amendment-1	2010	2010	Amendment
2.0	DDS-76:2023	2023	2023	2 nd Release
2.1	Amendment-1	2024	2024	Amendment

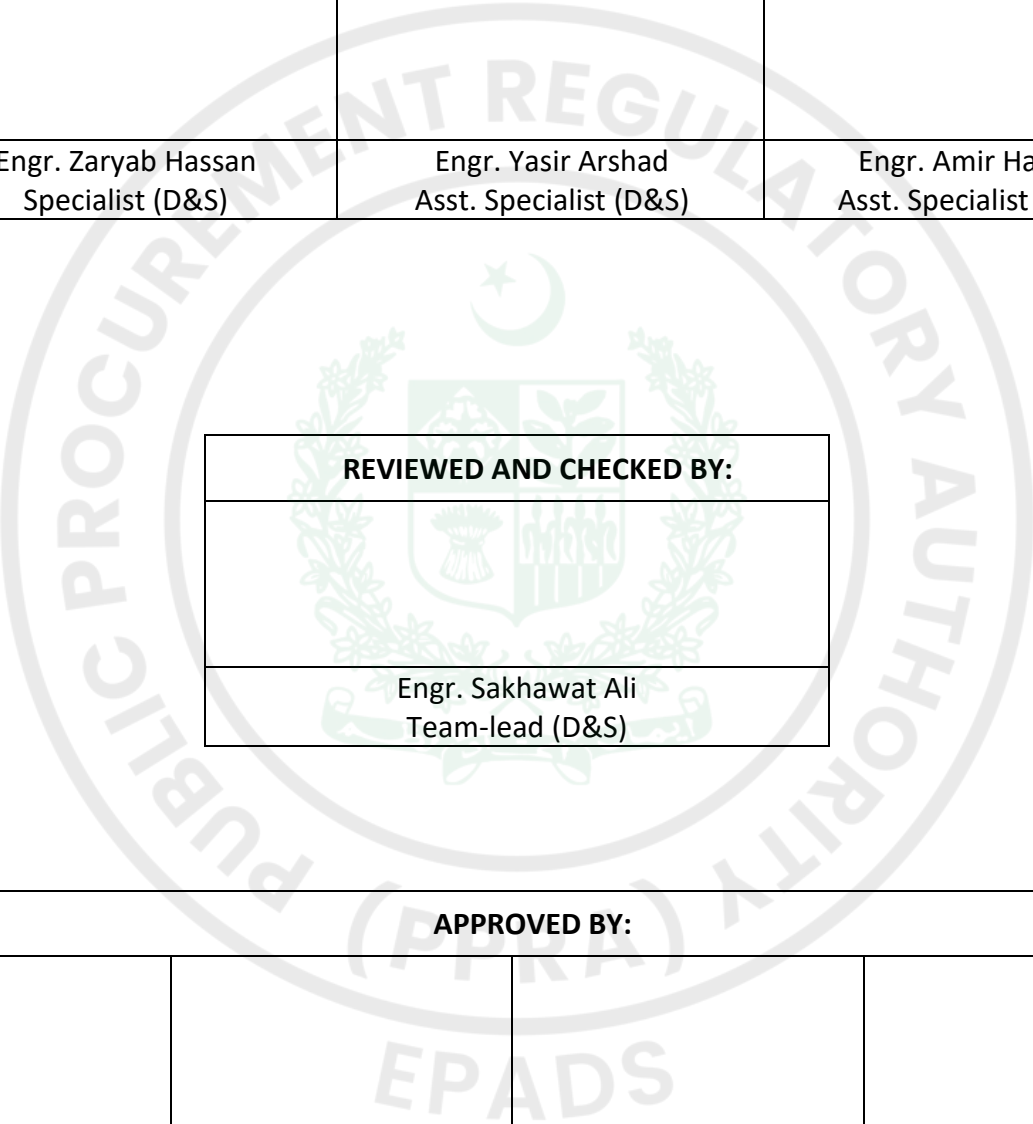
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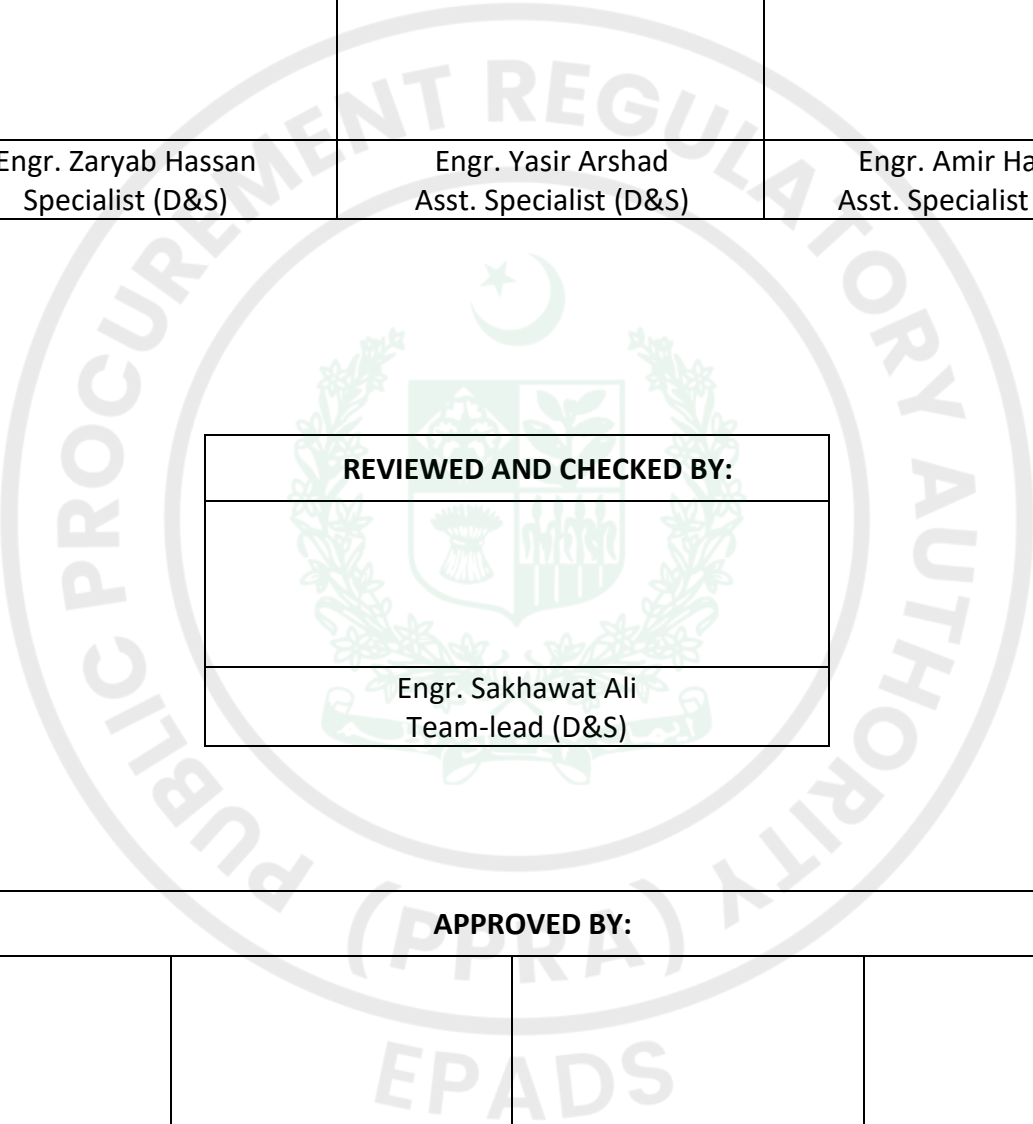
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This specification has been prepared with due deliberations with technical working groups of DISCOs and Manufacturers.

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. Sakhawat 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

Dr. Kashif Shehzad
Chief Executive Officer 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. Following detailed consultations and incorporation of stakeholder inputs, the specification was subsequently approved in the 3rd SRC meeting held on 22.04.2026 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:
 - a. Real time monitoring and Operation/Controlling
 - b. Preventive actions against damage of distribution transformers
 - c. Load disconnection during Fault/ Abnormal Conditions
 - d. Energy auditing
 - e. Scheduling of Load Management
 - f. Human/Equipment Safety
- 1.3 This specification covers APMS to be used on the LT side of following distribution transformers:
 - a. 25 kVA Pole Mounted Distribution Transformer
 - b. 50 kVA Pole Mounted Distribution Transformer
 - c. 100 kVA Pole Mounted Distribution Transformer
 - d. 200 kVA Pole Mounted Distribution Transformer
 - e. 250 kVA Pole Mounted Distribution Transformer
 - f. 400 kVA Pole Mounted Distribution Transformer
 - g. 500 kVA Pole Mounted Distribution Transformer
 - h. 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:
 - a. Ordering code provisions,
 - b. Sensor installation requirements,
 - c. 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 (LiSOCl₂) 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:

- a. "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
- b. "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:

- a. APMS Designed for 25 kVA/ 50 kVA/ 100 kVA/ 200kVA/ 250 kVA/ 400 kVA/ 500 kVA/ 630 kVA Distribution Transformer.
- b. Serial No.
- c. Rated Voltage (V)
- d. Rated Current (A)
- e. MCCB Rating (A)
- f. Magnetic Contactor Rating (A) (if applicable)
- g. CT Ratio
- h. Year of Manufacturing
- i. P.O No. & Date
- j. Warranty Expiry Date
- k. Name of Supplier/ Manufacturer
- l. Name of DISCO
- m. Manufacturer of OTL (for OTL ordering codes only)
- n. Low Oil level and Normal Recovery Point (for OTL ordering codes only)
- o. 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)	$\leq 5 \text{ W}$
Protection requirements (for controller)	Reverse polarity protection Overvoltage protection (120% of U_n)
Protection breaker (for controller if used)	$\leq 1 \text{ A}$
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 $\pm 2 \text{ }^{\circ}\text{C}$ 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 6mm² 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/manufacture 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:

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

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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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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

	Asset Performance Management System				
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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)			

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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			

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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

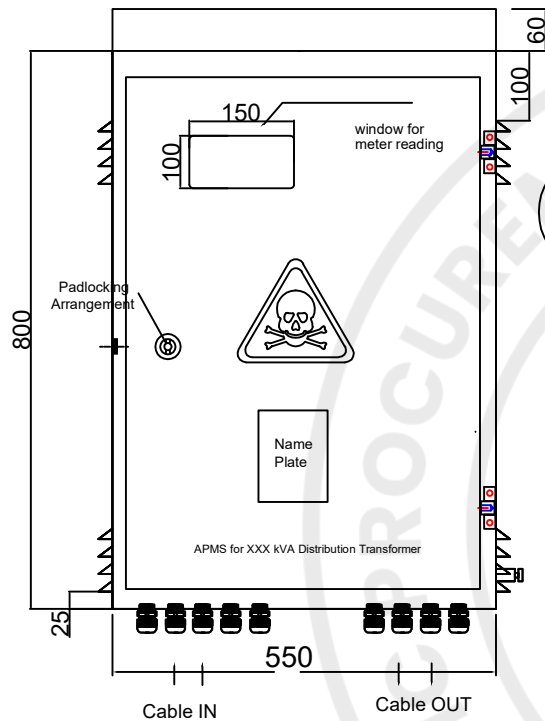
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			Date :	17/04/2026

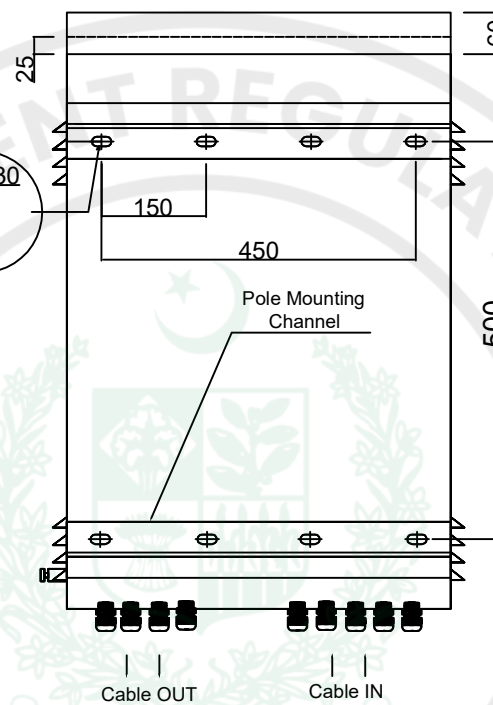


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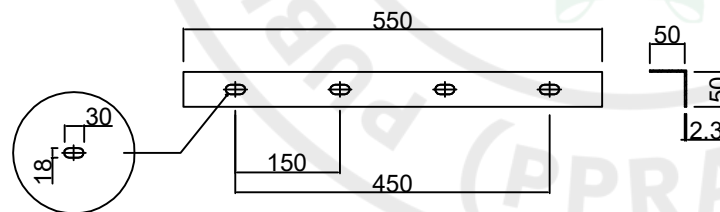
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Drawing Title:	LIST OF DRAWINGS
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/ 00 OF 18



Front View

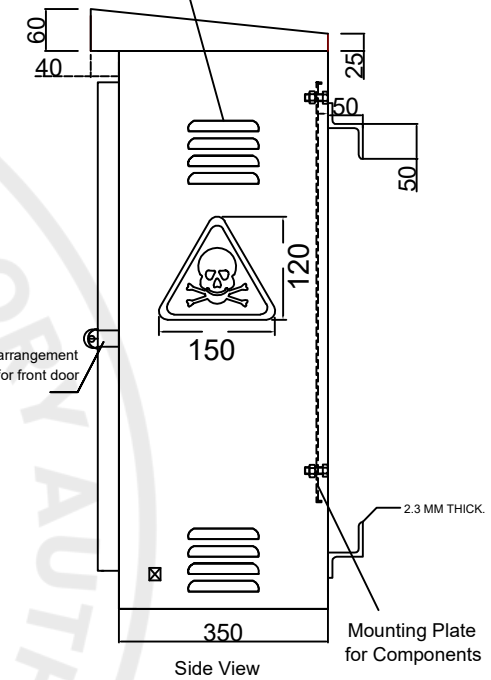


Back View



Pole Mounting Channel (2 NOS)

Perforated steel Sheet provided in side the louvers



Side View

Note:

- 1.Tolerance: as per Dwg.No APMS/PPMC/D&S/18
- 2.All Dimension are in Millimeters.
- 3.Enclosure Sheet Thickness=1.6mm (Min)
- 4.Door Sheet Thickness =2.3mm (Min)
- 5.Color: RAL-7032 (Powder Coating)
- 6.Louvers May be Increased By Manufactures To Fullfill Temprature Rise Test Requirements.

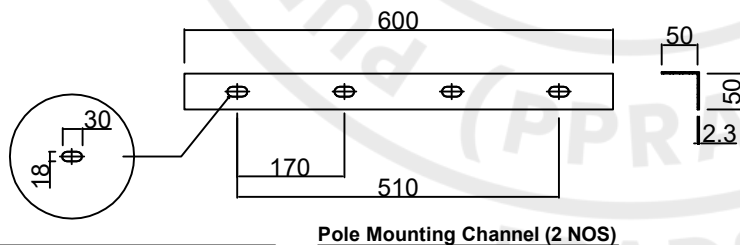
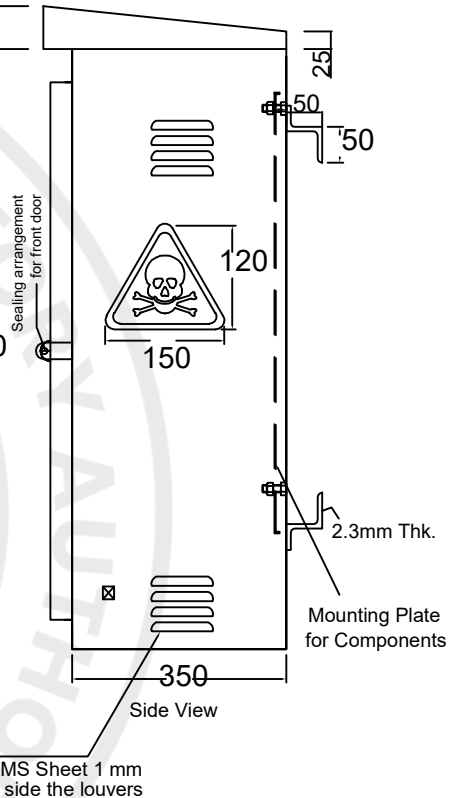
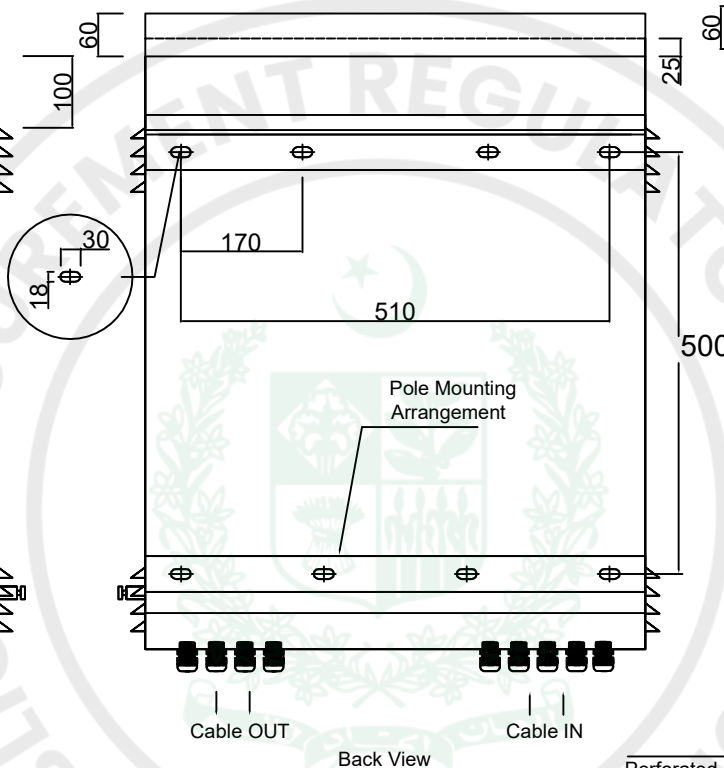
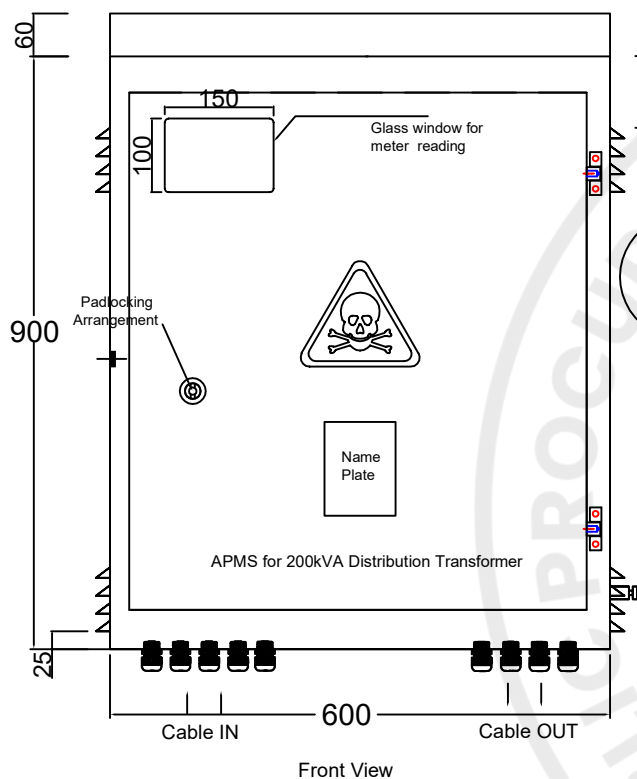
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			Date :	17/04/2026



PPMC

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



Perforated MS Sheet 1 mm provided in side the louvers

- Note:
- 1.Tolerance: as per Dwg.No APMS/PPMC/D&S/18
 - 2.All Dimension are in Millimeters.
 - 3.Enclosure Sheet Thickness=1.6mm (Min)
 - 4.Door Sheet Thickness =2.3mm (Min)
 - 5.Color: RAL-7032 (Powder Coating)
 - 6.Louvers May be Increased By Manufactures To Fullfill Temperture Rise Test Requirments.

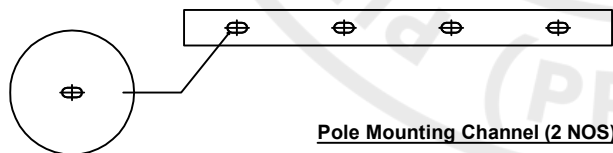
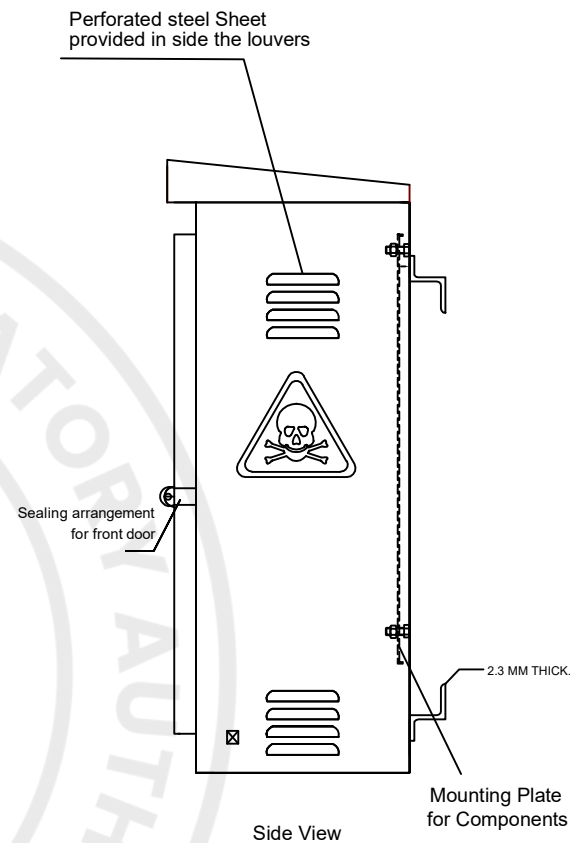
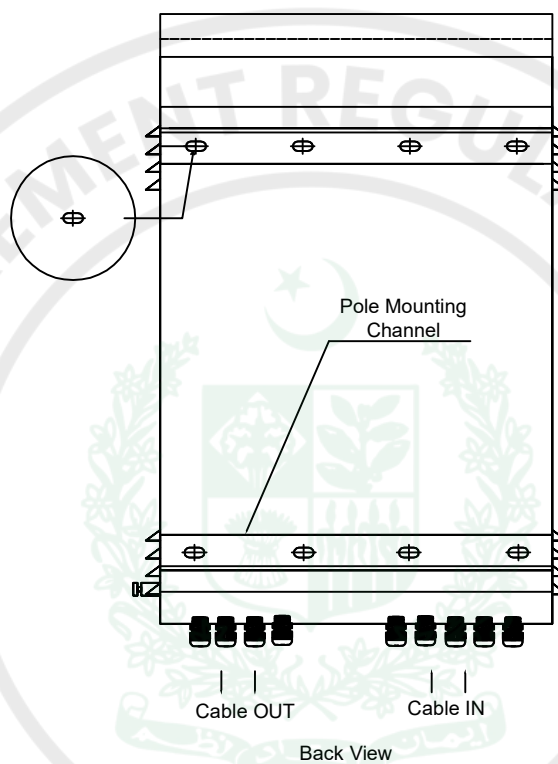
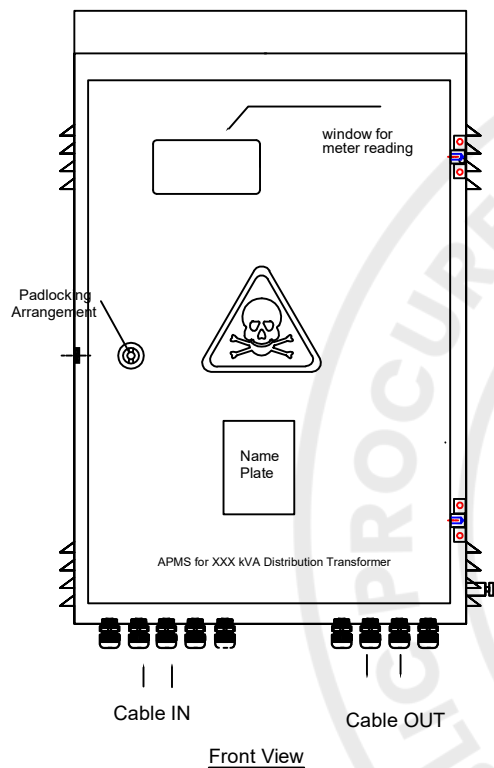
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			Date :	17/04/2026



PPMC

Product :	Asset Performance Management System For 200/250 kVA Transformer
Drawing Title:	Enclosure Unit
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/ 02 OF 18



- Note:
1. Tolerance: as per Dwg.No APMS/PPMC/D&S/18
 2. This Indicative drawing is for reference only. Detailed dimensional arrangement shall be made as per the prototype.

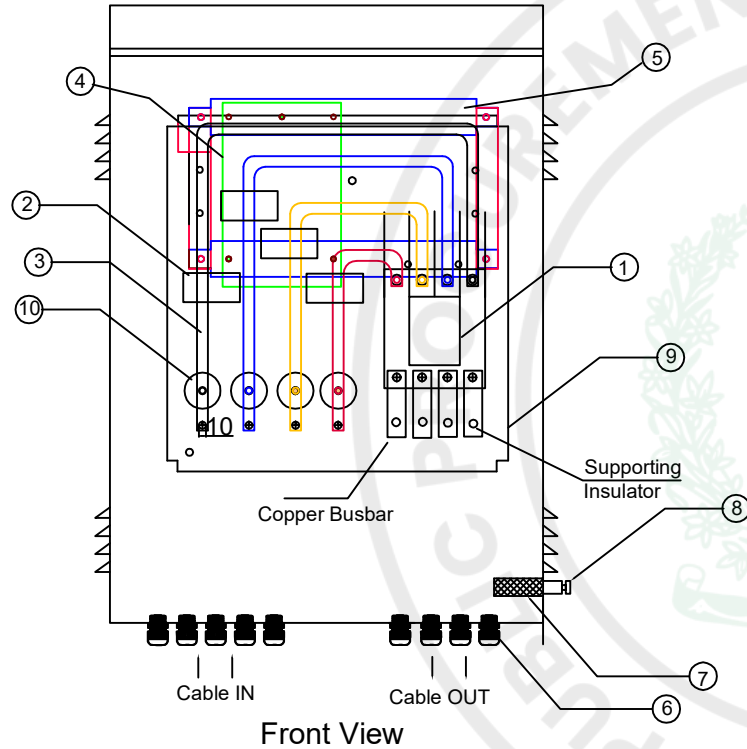
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			Revision Nos:	0/0
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PPMC

Product :	Asset Performance Management System For 400/500kVA, 630kVA Transformer
Drawing Title:	Enclosure Unit
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/03 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

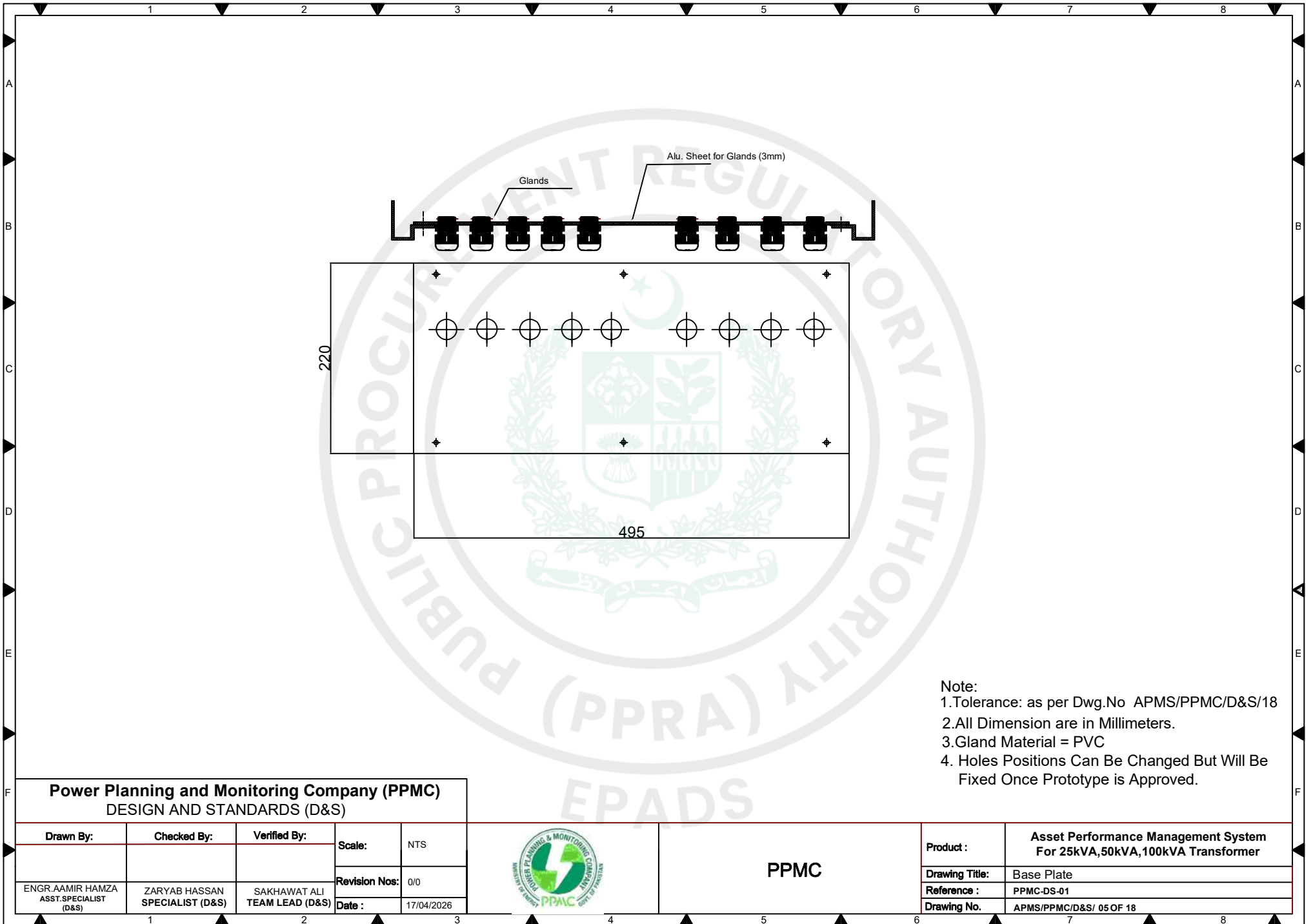
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			Date :	17/04/2026



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



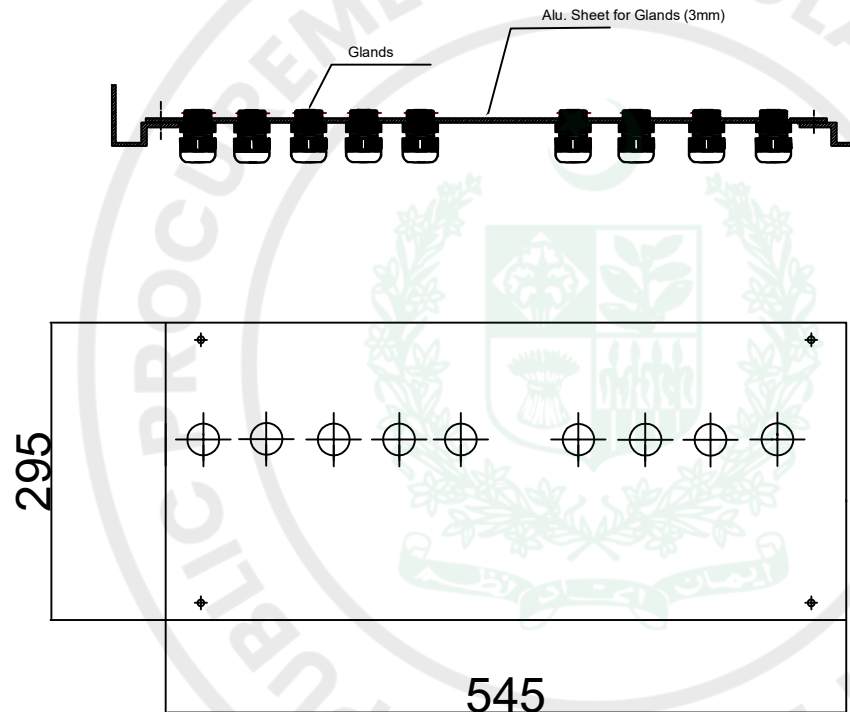
- Note:
- 1.Tolerance: as per Dwg.No APMS/PPMC/D&S/18
 - 2.All Dimension are in Millimeters.
 - 3.Gland Material = PVC
 4. Holes Positions Can Be Changed But Will Be Fixed Once Prototype is Approved.

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DESIGN AND STANDARDS (D&S)				
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			Revision Nos:	0/0
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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.

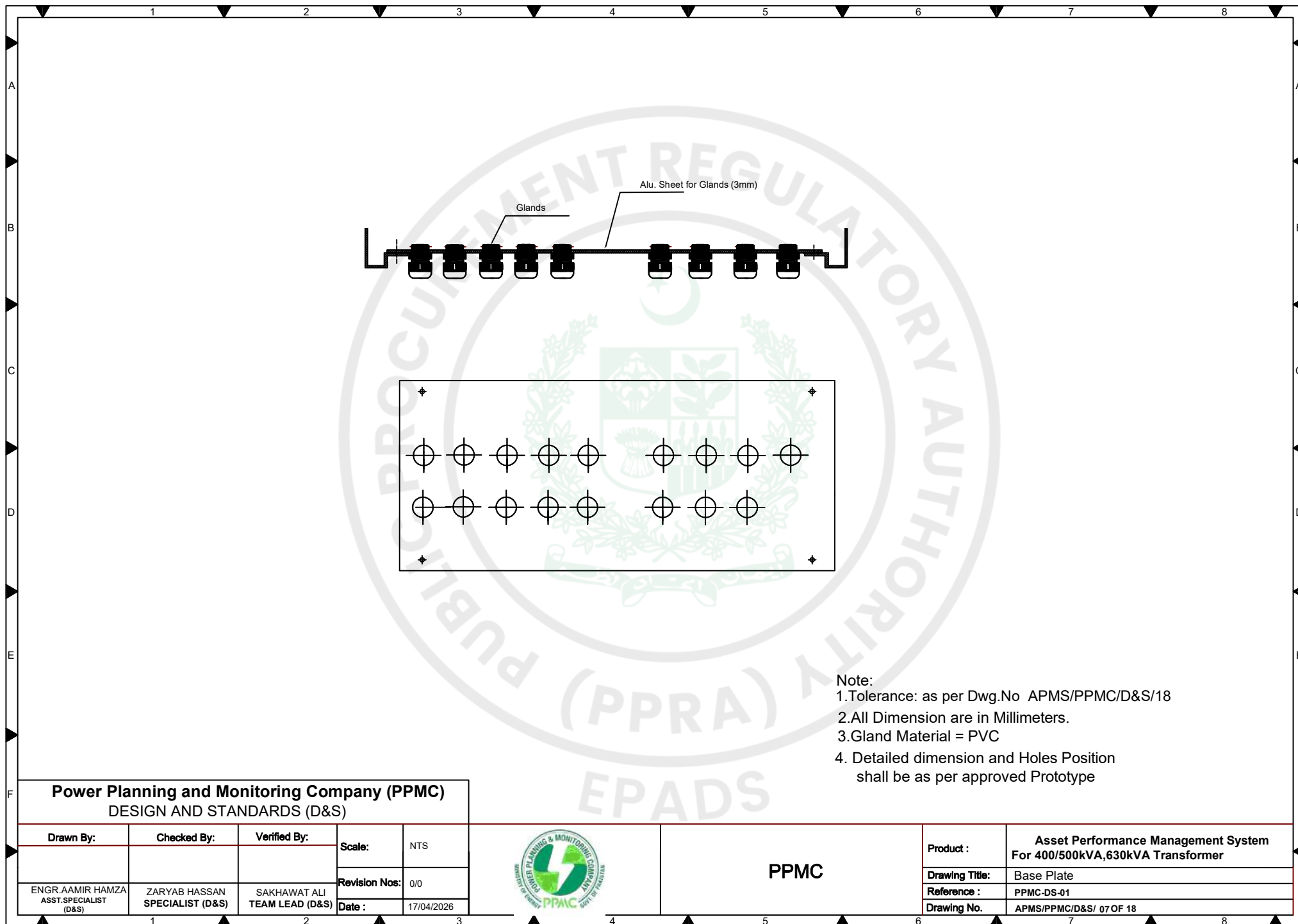
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			Date:	17/04/2026



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



Note:
 1.Tolerance: as per Dwg.No APMS/PPMC/D&S/18
 2.All Dimension are in Millimeters.
 3.Gland Material = PVC
 4. Detailed dimension and Holes Position shall be as per approved Prototype

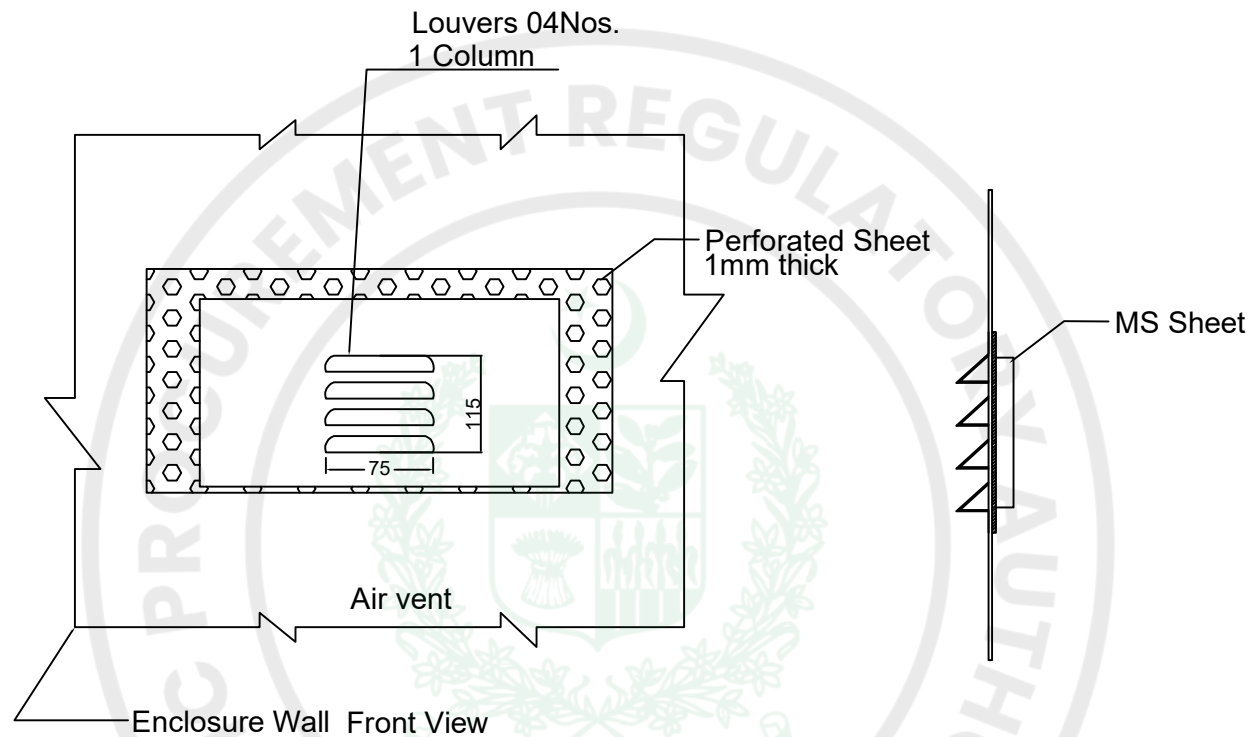
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			Date :	17/04/2026



PPMC

Product :	Asset Performance Management System For 400/500kVA,630kVA Transformer
Drawing Title:	Base Plate
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/ 07 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

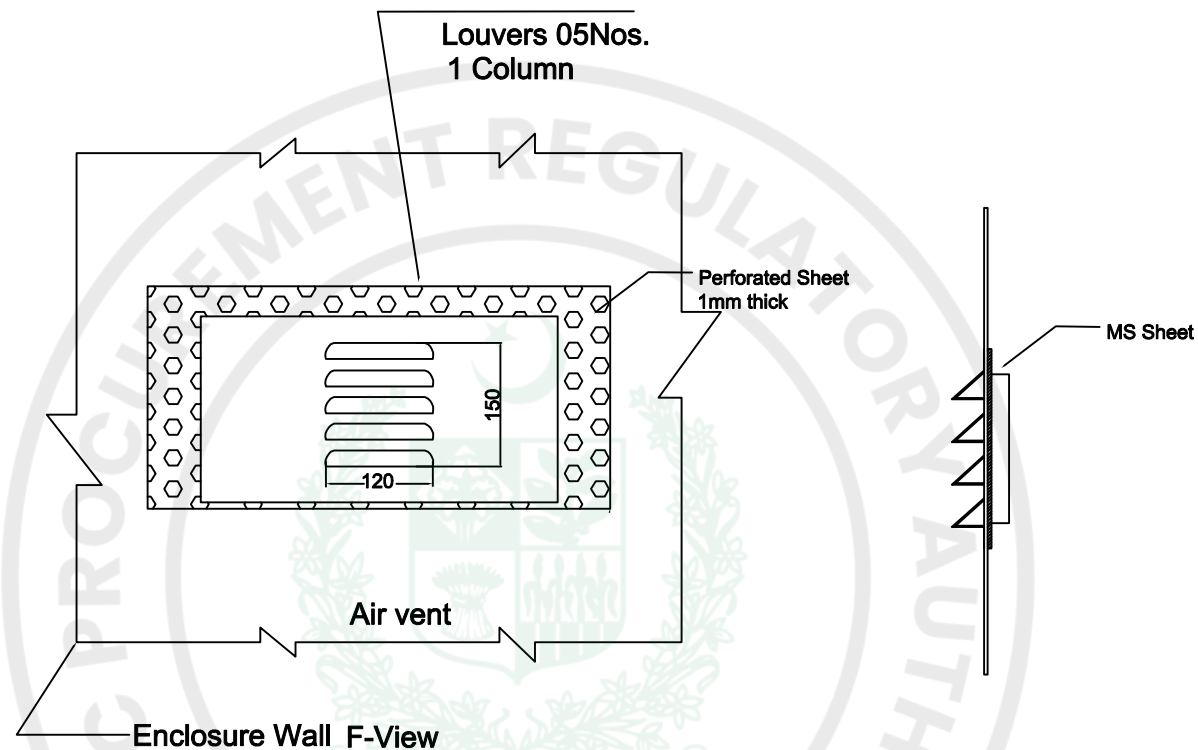
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DESIGN AND STANDARDS (D&S)

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			Date:	17/04/2026



PPMC

Product :	Asset Performance Management System For 25kVA,50kVA,100kVA Transformer
Drawing Title:	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

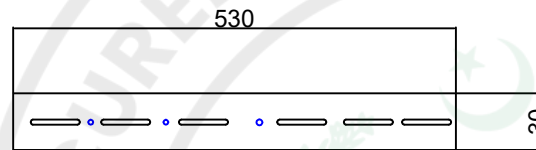
Power Planning and Monitoring Company (PPMC)
DESIGN AND STANDARDS (D&S)

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

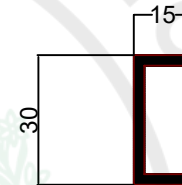


PPMC

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



Channel for Meter Support.



Sectional View

- Note:
- 1.Tolerance: as per Dwg.No APMS/PPMC/D&S/18
 - 2.All Dimension are in Millimeters.
 3. Holes shall be made as per Requirement

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
			Date :	17/04/2026



PPMC

Product :	Asset Performance Management System For 25kVA,50kVA,100kVA,200/250kVA,400/500kVA and 630kVA Transformer
Drawing Title:	Meter Support Channel
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/ 10 OF 18

115	
	
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

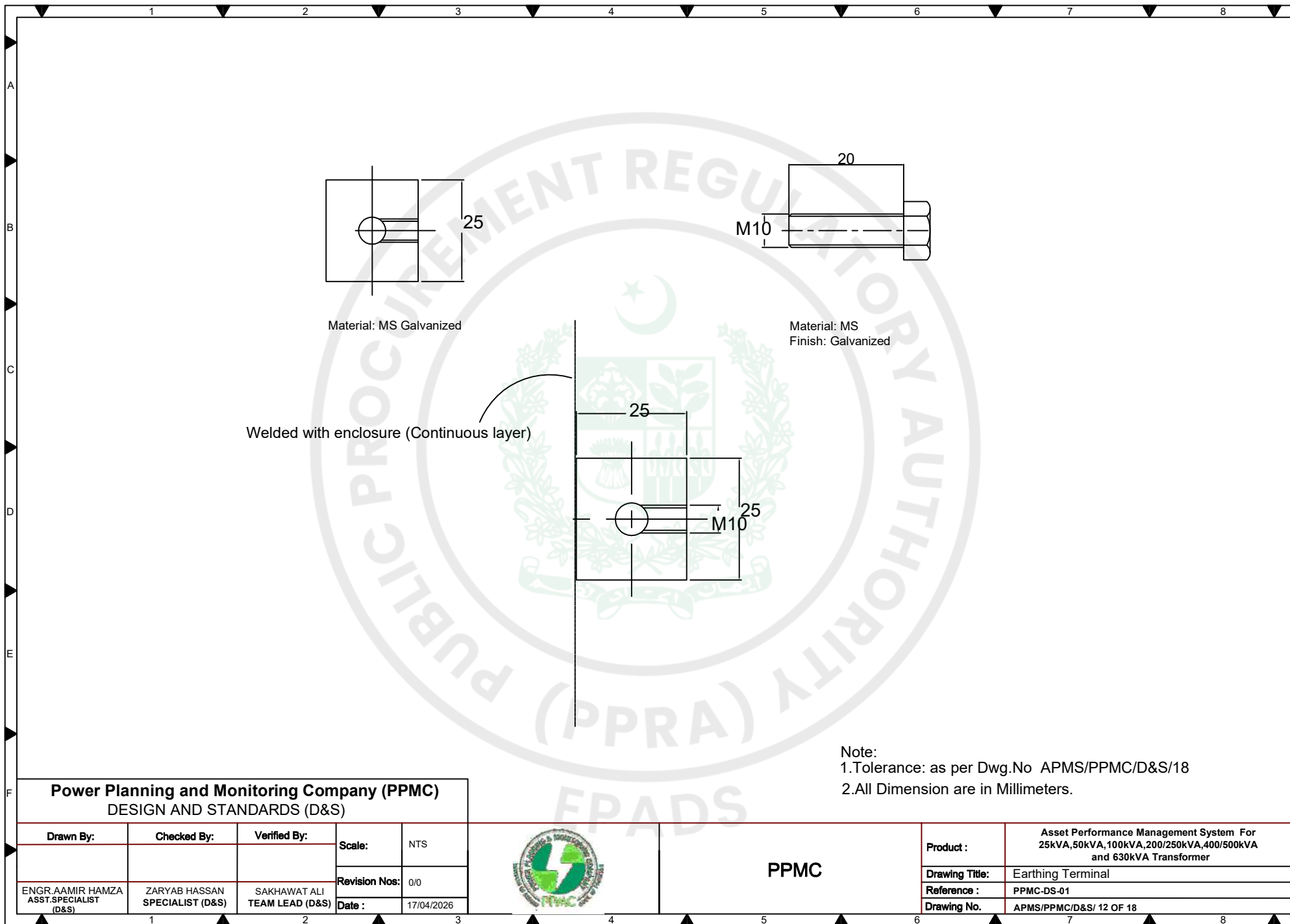
Power Planning and Monitoring Company (PPMC) DESIGN AND STANDARDS (D&S)

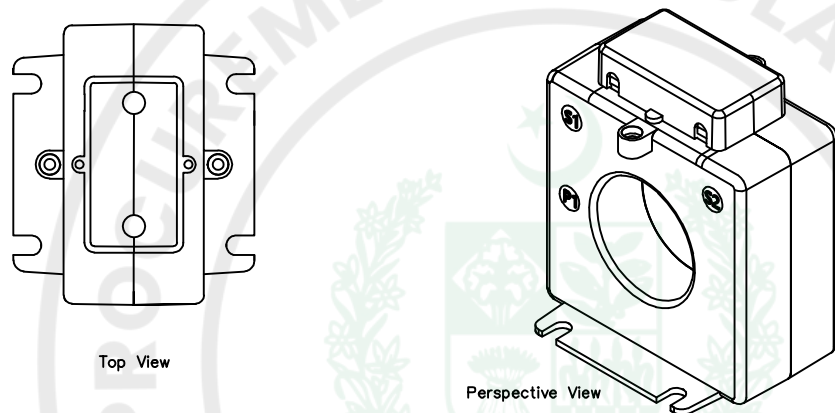
Drawn By:	Checked By:	Verified By:	Scale:	NTS
			Revision Nos:	0/0
ENGR.AAMIR HAMZA ASST.SPECIALIST (D&S)	ZARYAB HASSAN SPECIALIST (D&S)	SAKHAWAT ALI TEAM LEAD (D&S)	Date :	17/04/2026



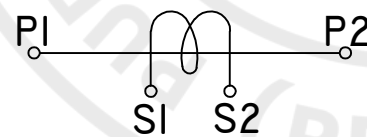
PPMC

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

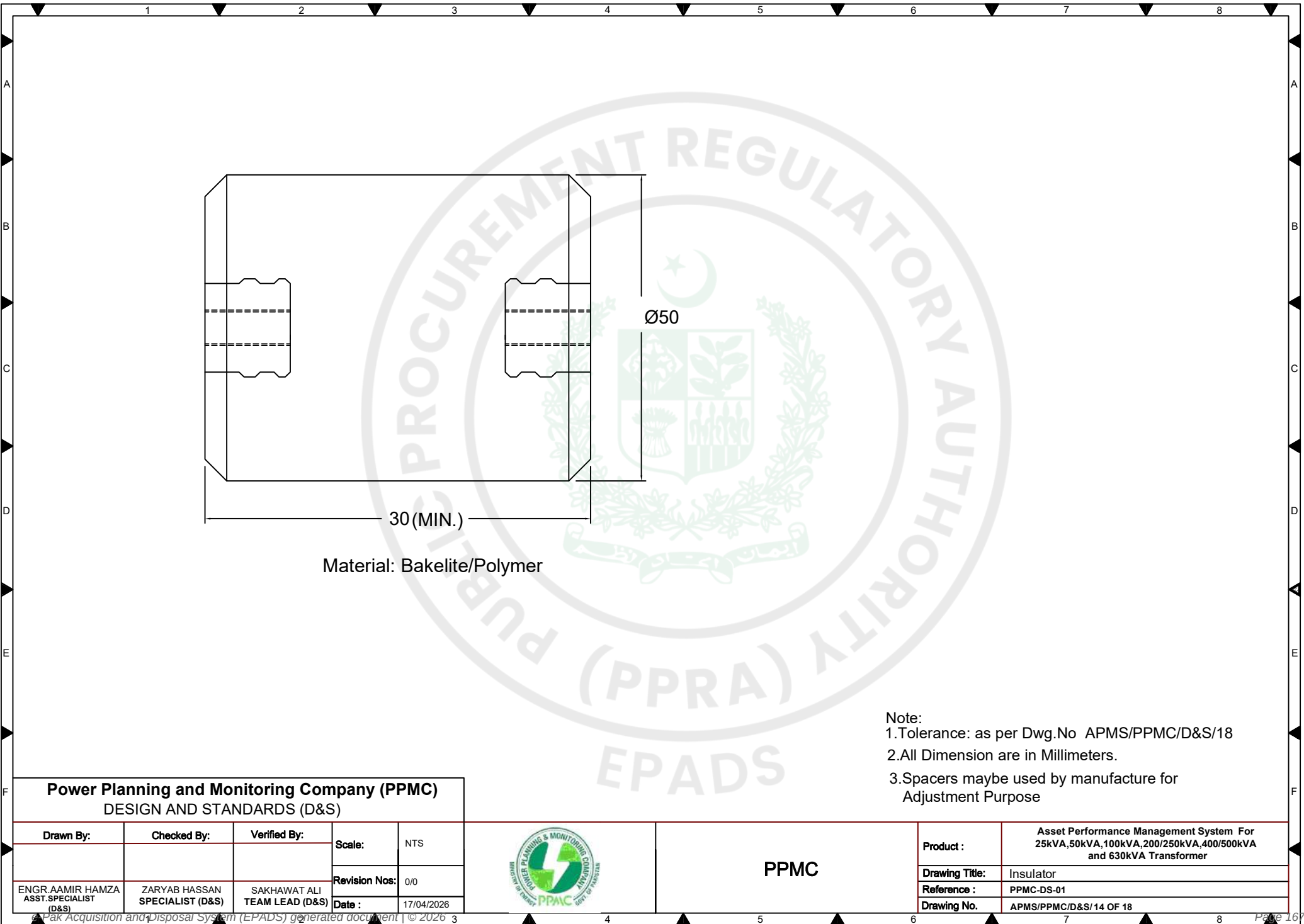
Power Planning and Monitoring Company (PPMC)
DESIGN AND STANDARDS (D&S)

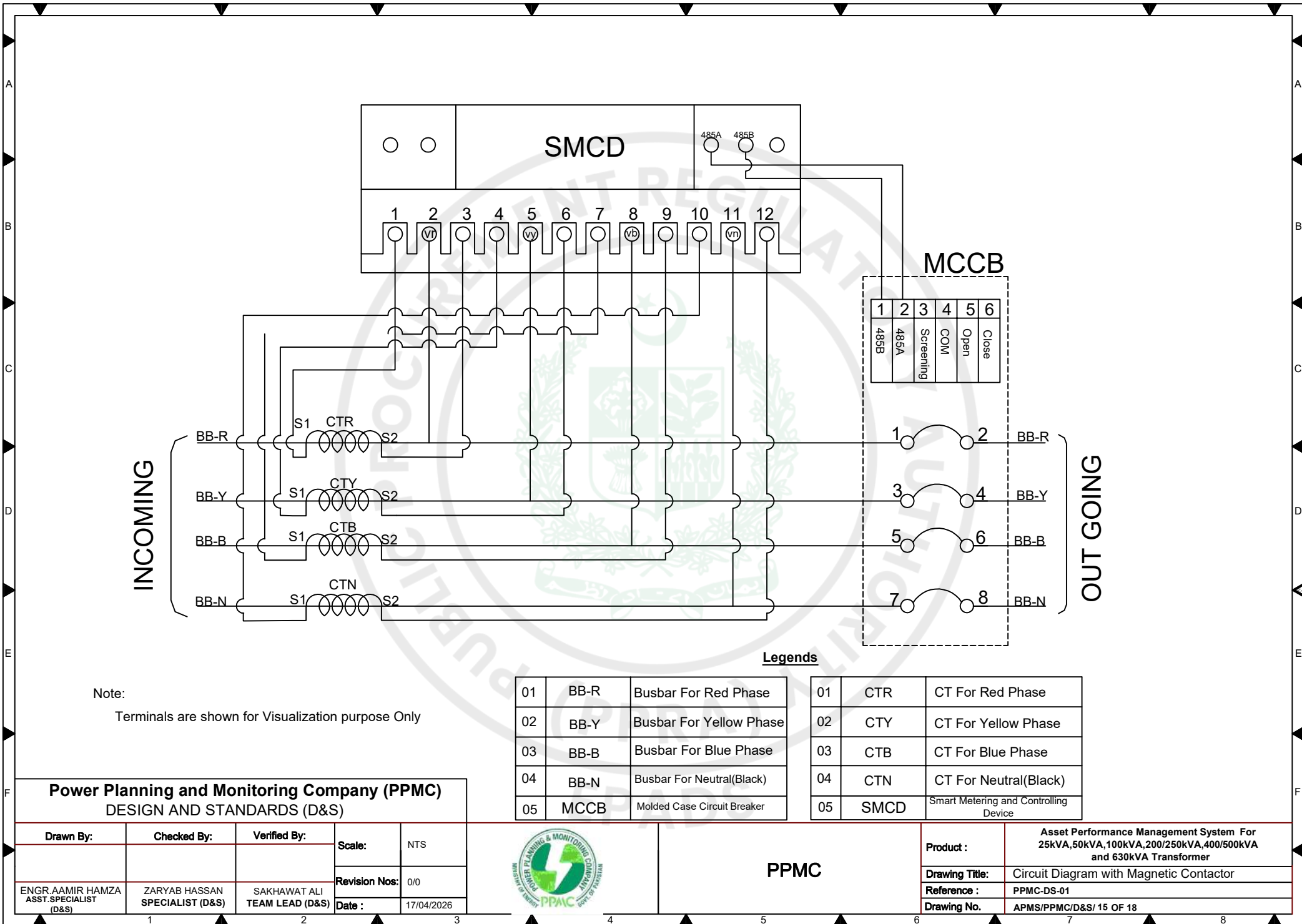
Drawn By:	Checked By:	Verified By:	Scale:	NTS
ENGR AAMIR HAMZA ASST.SPECIALIST (D&S)	ZARYAB HASSAN SPECIALIST (D&S)	SAKHAWAT ALI TEAM LEAD (D&S)	Revision Nos:	0/0
			Date:	17/04/2026

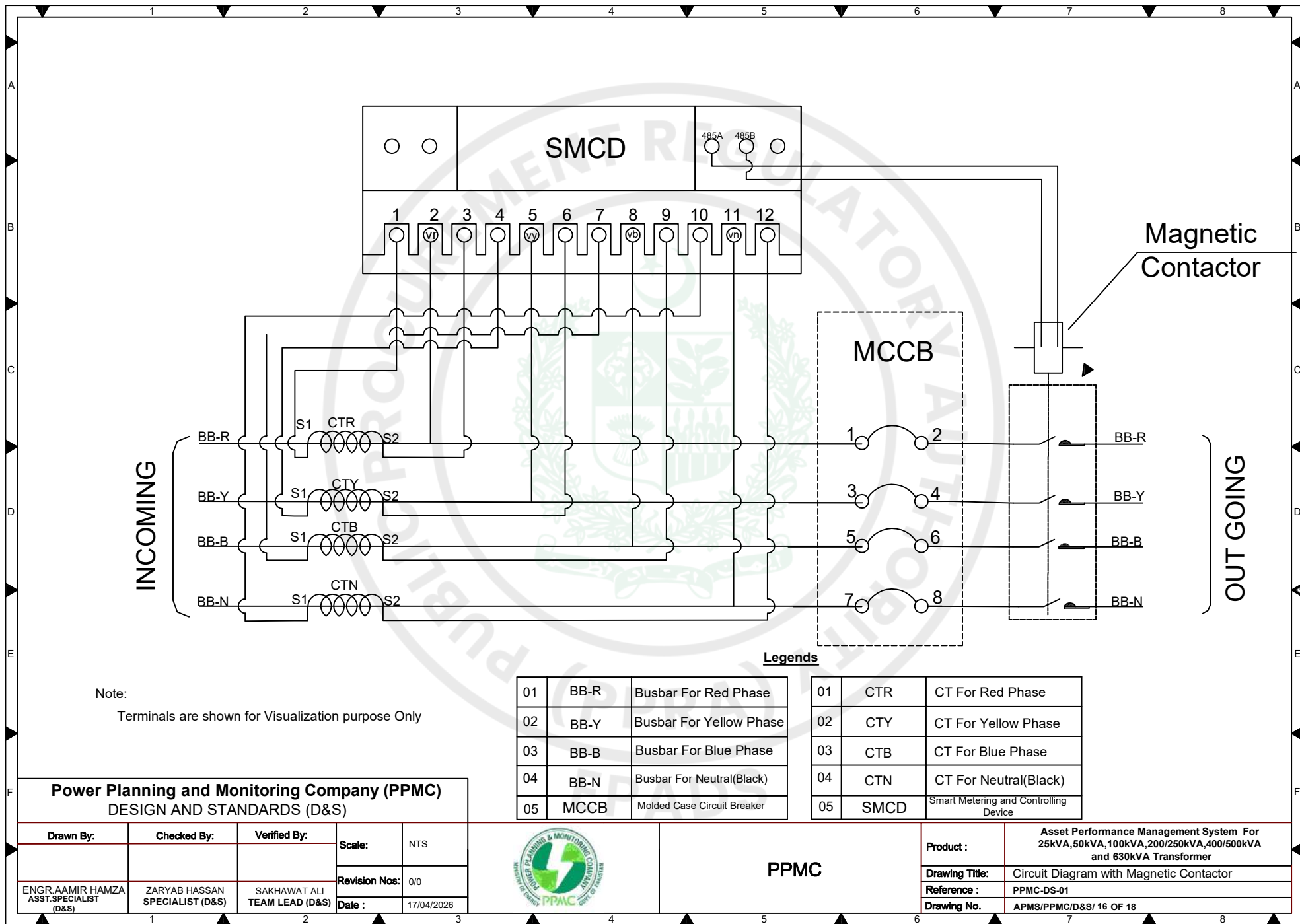


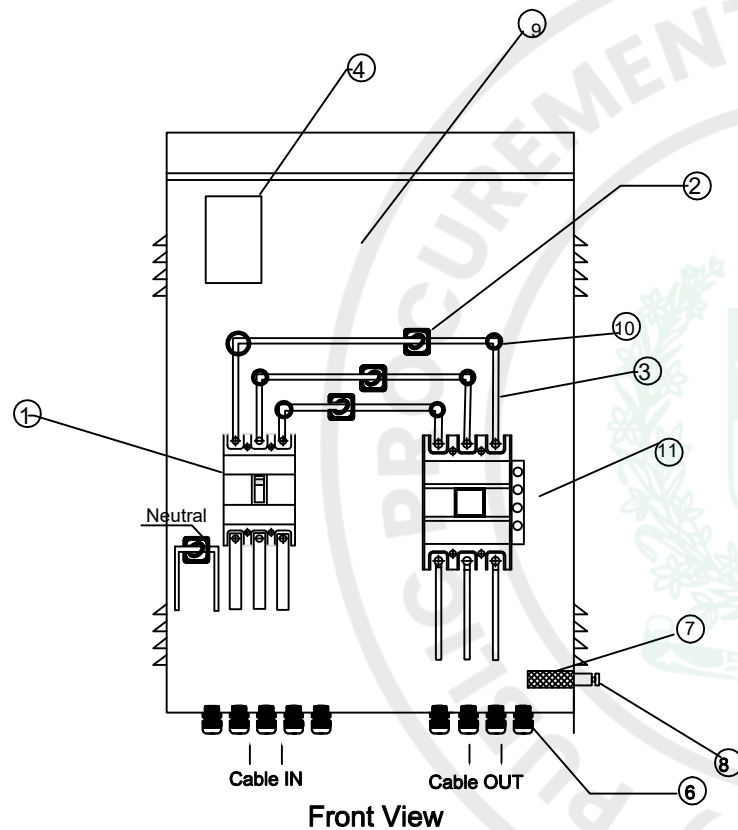
PPMC

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

Note:

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

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
Date:			17/04/2026	



PPMC

Product :	Asset Performance Management System For 25kVA, 50kVA, 100kVA, 200/250kVA, 400/500kVA 630kVA Transformer
Drawing Title:	MAGNETIC CONTRACTOR ARRANGEMENT
Reference :	PPMC-DS-01
Drawing No.	APMS/PPMC/D&S/ 17 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
			Date :	17/04/2026



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

List of Forms
Single Stage Two Envelope Procedure:

Form-1	: Letter of Bid – Technical Proposal
Form-2	: Letter of Bid - Financial Proposal
Form-3	: Bidder Information Form
Form-4	: Bidder's JV Members Information Form
Form-5	: Price Schedule: Goods Manufactured Outside Pakistan, to be Imported
Form-6	: Price Schedule: Goods Manufactured Outside Pakistan, already imported*
Form-7	: Price Schedule: Goods Manufactured in Pakistan
Form-8	: List of Related Services and Completion Schedule
Form-9	: Form of Bid Security
Form-10	: Form of Bid Security (Bid Bond)
Form-11	: Form of Bid-Securing Declaration
Form-12	: Manufacturer's Authorization
Form-13	: Form of Qualification Information
Form-14	: Letter of Acceptance
Form-15	: Production Capacity of Manufacturer
Form-16	: Deviation from Technical Provision Form DEV-1
Form-17	: Deviation from Contractual/Commercial Provision Form DEV-2
Form-18	: Current Litigation Information Form LIT-1
Form-19	: Power of Attorney (For signatory of Application)
Form-20	: Financial Situation (Form FIN-1)
Form-21	: Average Annual Turnover Form FIN-2
Form-22	: Financial Resources Form FIN-3
Form-23	: Current Contract Commitments in Progress Form FIN-4
Form-24	: Manufacturer's Authorization

Letter of Bid Technical Proposal

No. _____

Dated _____

Date of Bid submission: _____

Request for Bid No. _____

Description of Bid: _____

To:

We, the undersigned Bidder, hereby submit our Bid, in two parts, namely:

- (a) the Technical Proposal, and
- (b) the Financial Proposal.

In submitting our Bid we make the following declarations:

- (a) **No reservations:** We have examined and have no reservations to the bidding document, including addenda issued in accordance with Instructions to Bidders (ITB 9);
- (b) **Eligibility:** We meet the eligibility requirements and have no conflict of interest in accordance with ITB ;
- (c) **Bid/Proposal-Securing Declaration:** We have not been suspended nor declared ineligible by the Procuring Agency based on execution of a Bid Securing Declaration or Proposal Securing Declaration in the Procuring Agency's country in accordance with ITB ;
- (d) **Conformity:** We offer to supply in conformity with the bidding document and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods: *[insert a brief description of the Goods and Related Services]*;
- (e) **Bid Validity Period:** Our Bid shall be valid for the period ----- Days specified in BDS (as amended, if applicable) from the date fixed for the Bid submission deadline specified in BDS (as amended, if applicable), and it shall remain binding upon us, and may be accepted at any time before the expiration of that period;
- (f) **Performance Security:** If our Bid is accepted, we commit to obtain a performance security in accordance with the bidding document;
- (g) **One Bid per Bidder:** We are not submitting any other Bid(s) as an individual Bidder, and we are not participating in any other bid(s) as a Joint Venture member or as a subcontractor, and meet the requirements, other than Alternative Bids submitted in accordance with ITB;
- (h) **Suspension and Debarment:** We, along with any of our subcontractors, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the Procuring Agency. Further, we are not ineligible under Pakistan laws;

- (j) **State-owned enterprise or institution:** (check appropriate box)
- i. We are not a state-owned enterprise or institution ☐
- ii. We are a state-owned enterprise or institution but meet the requirements of this tender. ☐
- (k) **Binding Contract:** We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- (l) **Not Bound to Accept:** We understand that you are not bound to accept the Most Advantageous Bid or any other Bid that you may receive; and
- (m) **Fraud and Corruption:** We hereby certify that we have taken steps to ensure that no person acting for us, or on our behalf, engages in any type of Fraud and Corruption.

Name of the Bidder: * _____

Name of the person duly authorized to sign the Bid on behalf of the Bidder: **

Title of the person signing the Bid: _____

Signature of the person named above: _____

Date signed _____ **day of** _____ **Month** _____ **Year** _____

*: In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture as Bidder.

**: Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.

Note:-

1. Place this Letter of Bid in the First Envelope/Folder **“TECHNICAL PROPOSAL”**.
2. The Bidder must prepare the Letter of Bid on stationery with its letterhead clearly showing the Bidder's complete name and business address.

Letter of Bid Financial Proposal

No. _____

Dated _____

Date of Bid submission: _____

Request for Bid No.: _____

Description of Bid: _____

To:

We, the undersigned Bidder, hereby submit the second part of our Bid, the Financial Proposal

In submitting our Financial Proposal, we make the following additional declarations:

(a) **Bid Validity Period:** Our Bid shall be valid for the period specified in BDS 17.1 (as amended, if applicable) from the date fixed for the bid submission deadline specified in BDS 23.1 (as amended, if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(b) **Total Price:** The total price of our Bid, excluding any discounts offered in item (c) below is:

PKR _____

(In words) _____

(c) **Discounts:** The discounts offered and the methodology for their application are:

(i) The discounts offered are: _____

(ii) The exact method of calculations to determine the net price after application of discounts is shown below:

(d) **Commissions, gratuities and fees:** We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract:

Name of Recipient	Address	Reason	Amount
Not Applicable			

- (e) **Binding Contract:** We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed.

Name of the Bidder:* _____

Name of the person duly authorized to sign the Bid on behalf of the Bidder:

****** _____

Title of the person signing the Bid: _____

Signature of the person named above:

Date signed _____ **day of** _____ **Month,** _____ **Year**

*: In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture as Bidder.

**: Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.

Note:

- i. Place this Letter of Bid - Financial Proposal in the Second Envelope marked **"FINANCIAL PROPOSAL"**.
- ii. The Bidder must prepare the Letter of Bid - Financial Proposal on stationery with its letterhead clearly showing the Bidder's complete name and business address.

Bidder Information Form**Date of Bid Submission:** _____**Request for Bid No.:** _____Page _____ of _____
pages

1. Bidder's Name: _____
2. In case of JV, legal name of each member: _____
3. Bidder's actual or intended country of registration: _____
4. Bidder's year of registration: _____
5. Bidder's Address in country of registration: _____
6. Bidder's Authorized Representative Information Name: _____ Passport/NIC No. _____ Address: _____ Telephone/Fax numbers: _____ Email Address: _____
7. Attached are copies of original documents of [please check the box(es) of the attached original documents] ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above. ☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 3.4. ☐ Establishing that the Bidder is not under the supervision of the Procuring Agency
8. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.
9. Translated Business License duly notarized and attested from Chamber of commerce

Note:-

The Bidder shall fill in this Form in accordance with the instructions. No alterations to its format shall be permitted and no substitutions shall be accepted

Bidder's JV Members Information Form

Date of Bid Submission: _____

Request for Bid No.: ICB _____

Page ____ of ____ pages

1. Bidder's Name: _____
2. Bidder's JV Member's name: _____
3. Bidder's JV Member's country of registration: _____
4. Bidder's JV Member's year of registration: _____
5. Bidder's JV Member's legal address in country of registration: _____ _____
6. Bidder's JV Member's authorized representative information Name: _____ Address: _____ _____ Telephone/Fax numbers: _____ Email Address: _____
7. Attached are copies of original documents of [please check the box(es) of the attached original documents] ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITB 4.4. 8. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. 9. Translated Business License duly notarized and attested from Chamber of commerce

Note:

1. The Bidder shall fill in this Form in accordance with the instructions
2. The above table shall be filled in for the Bidder and for each member of a Joint Venture.

Price Schedule Forms

*[The Bidder shall fill in these Price Schedule Forms in accordance with the instructions indicated. The list of line items in column 1 of the **Price Schedules** shall coincide with the List of Goods and Related Services specified by the Purchaser in the Schedule of Requirements.]*



Form of Bid Security (Bank Guarantee)

[The bank shall fill in this Bank Guarantee Form in accordance with the instructions indicated.]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[Purchaser to insert its name and address]*

No.: *[Purchaser to insert reference number for the Request for Bids]*

Alternative No.: *[Insert identification No if this is a Bid for an alternative]* **Date:** *[Insert date of issue]*

BID GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _____ *[insert name of the Bidder, which in the case of a joint venture shall be the name of the joint venture (whether legally constituted or prospective) or the names of all members thereof]* (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its Bid (hereinafter called "the Bid") for the execution of _____ under Request for Bids No. (NCB) _____ ("the RFB").

Furthermore, we understand that, according to the Beneficiary's conditions, Bids must be supported by a Bid guarantee.

At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of ____ (_____) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

- (a) has withdrawn its Bid during the period of Bid validity set forth in the Applicant's Letter of Bid ("the Bid Validity Period"), or any extension thereto provided by the Applicant; or
- (b) having been notified of the acceptance of its Bid by the Beneficiary during the Bid Validity Period or any extension thereto provided by the Applicant, (i) has failed to sign the contract agreement, or (ii) has failed to furnish the performance security, in accordance with the Instructions to Bidders ("ITB") of the Beneficiary's bidding document.

This guarantee will expire: (a) if the Applicant is the successful Bidder, upon our receipt of copies of the Contract agreement signed by the Applicant and the performance security issued to the Beneficiary in relation to such Contract agreement; or (b) if the Applicant is not the successful Bidder, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Bidding process; or (ii) twenty-eight days after the end of the Bid Validity Period.



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

[Signature(s)]

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.



Form of Bid Security (Bid Bond)

[The Surety shall fill in this Bid Bond Form in accordance with the instructions indicated.]

BOND NO. _____

BY THIS BOND *[name of Bidder]* as Principal (hereinafter called "the Principal"), and *[name, legal title, and address of surety]*, **authorized to transact business in** *[name of country of Procuring Agency]*, as Surety (hereinafter called "the Surety"), are held and firmly bound unto *[name of Procuring Agency]* as Oblige (hereinafter called "the Purchaser") in the sum of *[amount of Bond]*⁴ *[amount in words]*, for the payment of which sum, well and truly to be made, we, the said Principal and Surety, bind ourselves, our successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has submitted or will submit a written Bid to the Purchaser dated the _____ day of __, 20 __, for the supply of *[name of Contract]* (hereinafter called the "Bid").

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal:

- (a) has withdrawn its Bid during the period of Bid validity set forth in the Principal's Letter of Bid ("the Bid Validity Period"), or any extension thereto provided by the Principal; or
- (b) having been notified of the acceptance of its Bid by the Purchaser during the Bid Validity Period or any extension thereto provided by the Principal; (i) failed to execute the Contract agreement; or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to Bidders ("ITB") of the Purchaser's bidding document.

then the Surety undertakes to immediately pay to the Purchaser up to the above amount upon receipt of the Purchaser's first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser shall state that the demand arises from the occurrence of any of the above events, specifying which event(s) has occurred.

¹ The amount of the Bond shall be denominated in the currency of the Purchaser's country or the equivalent amount in a freely convertible currency.

The Surety hereby agrees that its obligation will remain in full force and effect up to and including the date 28 days after the date of expiration of the Bid Validity Period set forth in the Principal's Letter of Bid or any extension thereto provided by the principal.

IN TESTIMONY WHEREOF, the Principal and the Surety have caused these presents to be executed in their respective names this _____ day of _____ 20

Principal: _____ Surety: _____

Apply Corporate Seal (where appropriate)

(Signature)
(Printed name and title)

(Signature)
(Printed name and title)

Form of Bid-Securing Declaration*[The Bidder shall fill in this Form in accordance with the instructions indicated.]*

No. _____

Dated _____

Date of Bid Submission: _____

____/____/2023

Request for Bid No.: _____

NCB _____

To: _____

We, the undersigned, declare

Not Applicable

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:

- (a) have withdrawn our Bid during the period of Bid validity specified in the Letter of Bid; or
- (b) having been notified of the acceptance of our Bid by the Procuring Agency during the period of Bid validity, (i) fail or refuse to sign the Contract; or (ii) fail or refuse to furnish the Performance Security (or guarantee), if required, in accordance with the ITB.

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 days after the expiration of our Bid.

Name of the Bidder* _____

Name of the person duly authorized to sign the Bid on behalf of the Bidder** _____

Title of the person signing the Bid _____

Signature of the person named above _____

Date signed _____ day of _____, _____

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

**: Person signing the Bid shall have the power of attorney given by the Bidder attached to the Bid

[Note: In case of a Joint Venture, the Bid-Securing Declaration must be in the name of all members to the Joint Venture that submits the Bid.]

Form-12

Information for Local Agent

No. _____

Dated _____

Date of Bid Submission: _____/_____/202

Request for Bid No.:

ICB _____

1. Agent Name: _____
2. Foreign Bidder's Name: _____
3. Year of Agent for bidders: _____
4. Agent's year of registration: _____
5. Agent's Address in country of registration: _____
6. Agent's Authorized Representative Information Name: _____ Passport/CNIC No. _____ Address: _____ Telephone/Fax numbers: _____ Email Address: _____
Describe role and responsibility of Agent _____ _____ _____ _____ _____



Notice of Award (NOA)

[Letter head paper of the Procuring Agency]

No. _____

Date _____

To:

This is to notify you that your Bid dated _____ for execution of the _____ for the Contract Price of the equivalent of _____, as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by us.

We hereby confirm _____, to be the Appointing Authority, to appoint the Arbitrator in case of any arisen disputes in accordance with **ITB 45.1.**

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/Security in the form and the amount stipulated in the Special Conditions of the Contract within a period of twenty-eight (28) 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

Production Capacity of Manufacturer

Sr #		Factory Capacity in unit as mentioned in Price schedule
A	Total Factory Production Capacity (No. or Sets or other unit)/Year	
B	Order in Hand (No. or Sets or other unit)	
C	Expected order during execution of this contract if awarded (No. or Sets or other unit)	
D	Quantity of this order	
E	Remaining Capacity of Factory (No. or Sets or other unit) E= (A-B-C-D)	
$A \geq 2 \times E$		

Signed & Stamped by Manufacture

Deviation from Technical Provision

Form DEV-1

It is presumed that bidder shall not take any deviation. However, if he intends to take deviation to specified terms, those must be listed in the space provided below:

Sr #	Section No.	Clause No	Deviation	Clarifications

Sign & Stamped by bidders

Deviation from Contractual/Commercial Provision

Form DEV-2

It is presumed that bidder shall not take any deviation. However, if he intends to take deviation to specified contractual/commercial conditions, those must be listed in the space provided below. _

Sr #	Section No	Clause No	Deviation	Clarifications

Sign & Stamped by bidders

Current Litigation Information

Form LIT-1

Each Bidder or member of a JV must fill in this form

Pending Litigation			
➤ No pending litigation in accordance with of Section 3 (Evaluation and Qualification Criteria) ➤ Pending Litigations in GRC and Appellate GRC			
Year	Matter in Dispute	Value of Pending Claim in Pak Rupees	Value of Pending Claim as a Percentage of Net Worth

Power of Attorney (For signatory of Application)
 [To be printed on a PKR 100 stamp paper]

KNOW ALL MEN BY THESE PRESENTS THAT by this Power of Attorney (“**Power of Attorney**”),____[*Insert name firm/Company*] having its registered office at [----], does hereby nominate, appoint and authorize Mr._____, having CNIC No._____hereinafter referred to as the “**Signatory of Application**”, to do in our name and on our behalf the following:

1. Sign and submit to_____or its authorized nominee, the Prequalification Application / Bid for “-----”, in response to the tender No. ----- Advertisement dated [---] issued by The Procuring Agency and all other documents and instruments required to submit the Bidding Documents.
2. execute all such contracts, deeds, documents and instruments as may be considered necessary and expedient in relation to the foregoing; and
3. do and carry out all other actions as may be required by the Procuring Agency in connection with the bidding process as a whole;
4. To immediately notify The Procuring Agency in writing of any impending or actual revocation as well as any change in the terms of this Power of Attorney.
5. To do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our Bid in response to the above referred bidding document including signing and submission of all documents, instruments and deeds (including correcting any deficiencies or mistakes therein), attending any meetings organized by the Procuring Agency (including pre-bid conference meetings and bid opening meetings)and providing information/responses to the Procuring Agency in all matters in connection with our Bid.

We, [*Insert name of Firm/Company*], do hereby ratify and confirm whatsoever the Signatory of Application shall do by virtue of these presents and further agree that whatever the Signatory of Application shall do or cause to be done pursuant to this Power of Attorney shall be binding on us.

Furthermore, each provision of this Power of Attorney is severable and distinct from the others. The invalidity, illegality or unenforceability of any one or more provisions of this Power of Attorney at any time shall not in any way affect or impair the validity, legality and enforceability of the remaining provisions hereof.

IN WITNESS WHEREOF, we have executed this **POWER OF ATTORNEY** as of
[Date].

FOR: [INSERT NAME OF APPLICANT FIRM/ COMPANY]

Signature: _____

Name: _____

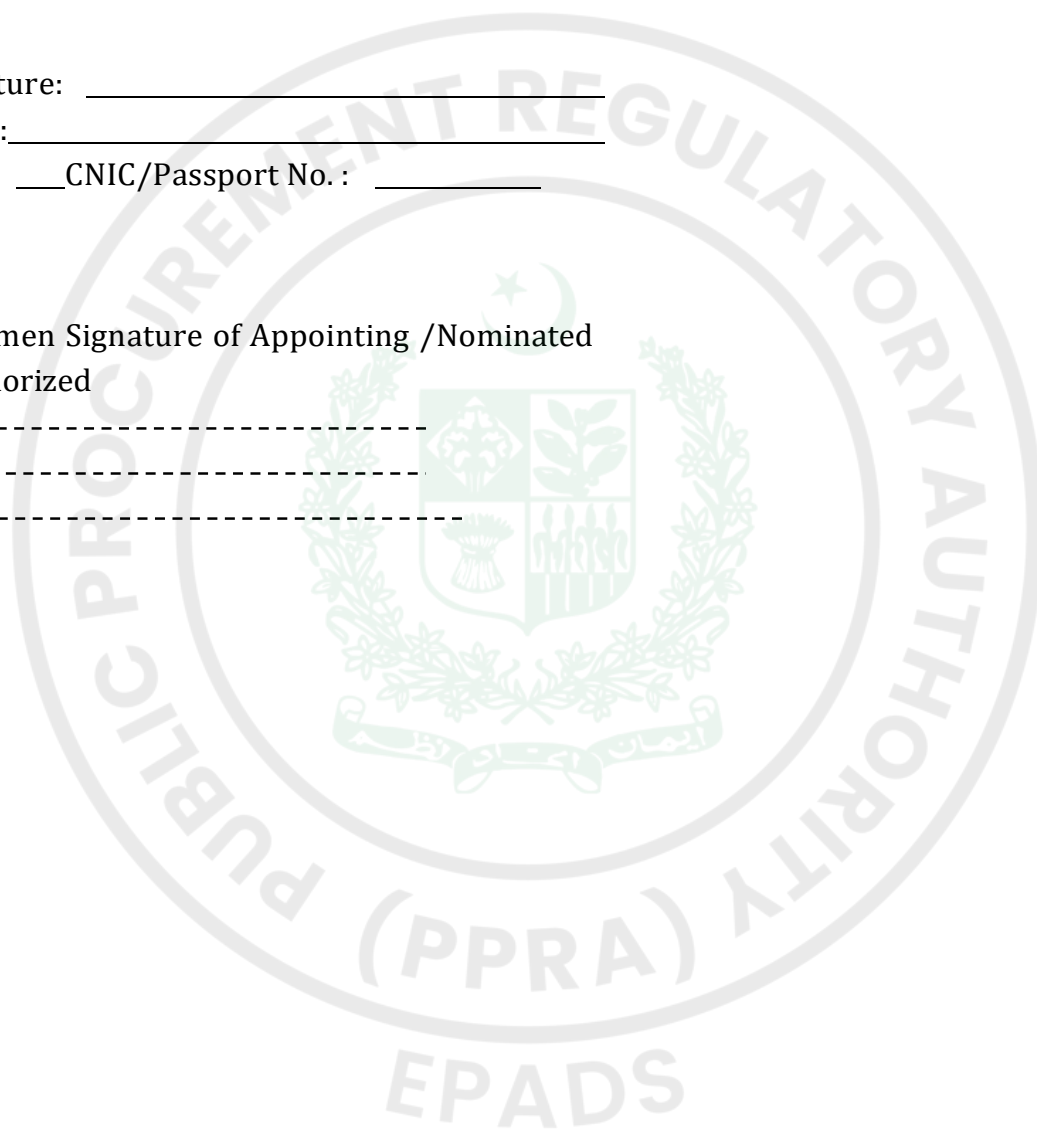
Title: ____CNIC/Passport No. : _____

Specimen Signature of Appointing /Nominated
/Authorized

i- _____

ii- _____

iii- _____



Financial Situation (Form FIN-1)

Bidder/Supplier/JV

Financial Data for Previous 3 Years

Information from Balance Sheet

Financial Data for Last 3 Financial Years [Pak Rupee]			
Description			
Total Assets			
Total Liabilities			
Net Worth			
Current Assets			
Current Liabilities			

Information from income statement

Total Revenues/ Sales			
Profit Before Taxes			
Profit After Taxes			
Interest Charges Paid			
Net Profit			

☐ Attached are copies of financial statements (balance sheets including all related notes, and income statements) for the last three years, as indicated above, complying with the following conditions;

- All such documents reflect the financial situation of the Applicant or partner to a JV, and not sister or parent companies.
- Historic financial statements must be audited by a certified accountant.
- Historic financial statements must be complete, including all notes to the financial statements.
- Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

Signed & Stamped

Average Annual Turnover

Form FIN-2

Each Bidder or member of a JV must fill in this form

The information supplied should be the Annual Turnover of the Bidder or each member of a JV in terms of the amounts billed to clients for each year for Contracts/Orders in progress or completed, converted to Pak Rupee at the rate of exchange at the end of the period reported.

Annual Turnover Data for the Last 3 Years				
Sr. No	Year	Amount Currency	Exchange Rate if applicable	Pak Rupee Equivalent
1				
2				
3				
Average Annual Turnover				

Signed & Stamped

Financial Resources

Form FIN-3

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, after deduction of current commitments, available to meet the total orders cash flow demands of the subject contract or contracts as indicated in Appendix-A (Evaluation and Qualification Criteria)

Financial Resources		
No.	Source of financing along with supporting documents (must be attached)	Amount (Pak Rupee equivalent)
1	Working Capital	
2	Credit Line	
3	Any other financial mean	
4	Total of Current commitment	
5	Net Financial Resource (1+2+3-4)	

1. Latest and valid credit line facility shall be provided otherwise the same will not be considered during evaluation.
2. Detail of current commitment shall be provided separately as per FIN-4
3. In case of any other financial mean, bidder is bound to provide the detail of any other financial mean otherwise the same will not be considered during evaluation.

Signed & Stamped



Current Contract Commitments in Progress

Form FIN-4

Bidders and each partner to a JV should provide information on their current commitments on all contracts/orders that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts/orders approaching completion, but for which an unqualified, delivery certificate has yet to be issued.

Current Contract Commitments					
Sr. No.	Name of Contract/ Order	Employer's Contact Address, Tel, Fax	Value of Outstanding orders [Pak Rupee Equivalent]	Estimated Delivery Date	Average Monthly Invoicing Over Last Six Months (Pak Rupee month]
1					
2					
3					
4					
5					

Signed & Stamped

Manufacturer's Authorization

Form 23

*[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its Bid, if so indicated in the **BDS**.]*

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

No.: *[insert number of Bidding process]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[insert complete name of Procuring Agency]*

WHEREAS

We *[insert complete name of Manufacturer]*, who are official manufacturers of *[insert type of goods manufactured]*, having factories at *[insert full address of Manufacturer's factories]*, do hereby authorize *[insert complete name of Bidder]* to submit a Bid the purpose of which is to provide the following Goods, manufactured by us *[insert name and or brief description of the Goods]*, and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with the General Conditions of Contract, with respect to the Goods offered by the above firm.

Signed: *[insert signature(s) of authorized representative(s) of the Manufacturer]*

Name: *[insert complete name(s) of authorized representative(s) of the Manufacturer]*

Title: *[insert title]*

Dated on _____ day of _____, _____ *[insert date of signing]*

1.1 Domestic Preference

If allowed in the BDS, a margin of preference shall be granted to domestic Manufacturer, in accordance with SRO. 827 (I)/2001 dated 03.12.2001, and subject to, the following provisions:

- a) Bidder applying for such preference shall provide, as part of the data for qualification, such information, including percentage of value addition during manufacturing of indigenous product in Pakistan and certification of value addition from Engineering Development Board (EDB) as shall be required to determine whether, according to the classification established by the Procuring agency/Employer, a particular manufacturer or group of manufacturer qualifies for a domestic preference. The bidding documents shall clearly indicate the preference and the method that will be followed in the evaluation and comparison of bids to give effect to such preference.
- b) After bids have been received and reviewed by the Procuring agency/Employer, responsive bids shall be classified into the following groups:
 - i. Group A: bidder eligible for the domestic preference as under:
 - a) Determined value addition by EDB and certificate is attached
 - b) In absence of EDB certificate for value Addition (Minimum Price preference will be applicable as per said SRO)
 - ii. Group B: other bidder.
- c) All evaluated bids in each group shall, as a first evaluation step, be compared to determine the most advantageous bid, and the most advantageous bids in each group shall be further compared with each other. If, as a result of this comparison, a bid from Group A is the most advantageous, it shall be selected for the award. If a bid from Group B is the most advantageous, as a second evaluation step, all bids from Group B shall then be further compared with the most advantageous bid from Group A. For the purpose of this further comparison only, the percentage of price preference of the respective bid price corrected for arithmetical errors, shall be added to the evaluated price offered in each bid from Group B DDP Price. If the bid from Group A is the most advantageous, it shall be selected for award. If not, the

most advantageous bid from Group B based on the first evaluation step shall be awarded the contract



Summary for Installation of APMS

Description	Supply	Installation	GST	PST
Procurement of Supply,Installation,Testing &Commissioning of Assert Performance Management System(APMS) according to revised PPMC spec No.PPMC-DS-01:2026 & its Configuration & Interfacing with AMI system as per schedule of requirement SoR in Attock Circle				
Procurement of Supply,Installation,Testing &Commissioning of Assert Performance Management System(APMS) according to revised PPMC spec No.PPMC-DS-01:2026 & its Configuration & Interfacing with AMI system as per schedule of requirement SoR in Jhelum Circle				
Procurement of Supply,Installation,Testing &Commissioning of Assert Performance Management System(APMS) according to revised PPMC spec No.PPMC-DS-01:2026 & its Configuration & Interfacing with AMI system as per schedule of requirement SoR in Chakwal Circle				
Procurement of Supply,Installation,Testing &Commissioning of Assert Performance Management System(APMS) according to revised PPMC spec No.PPMC-DS-01:2026 & its Configuration & Interfacing with AMI system as per schedule of requirement SoR in Islamabad Circle				
Total				
Grand Total				

Price Schedule for Attock Circle									
#	Description	Supply from Purchaser's Company					Supply outside Purchaser's Company		
		UoM	Qty	Unit rate EXW including inland Transportation upto site without GST	Total Price	GST/PST	Unit rate DDP including inland Transportation upto site without GST	Total Price	GST/PST
1	2	3	4	5	6=4x5)	7=6x rate of tax	8	9=4x8	10=9x rate of tax
Part -A Supply of Material/System Upto Site									
1	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	228		-				
2	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	87		-				
3	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	35		-				
4	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	187		-				
5	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	72		-				
6	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	29		-				
7	Supply AAC WASP Insulated Conductor for installation of LT Busbar (for 100 and 200kVA T/F) (mandatory)	Meter	7,656		-				
8	Supply Spool Insulator for installation of LT Busbar (if required)	Nos.	5,104		-				
9	Supply D-Shackle for Spool Insulator for installation of LT Busbar (if required)	Nos.	5,104		-				
10	Supply of 4 core 120mm ² PVC cable for Connection of LT Transformer terminal to APMS as per order code	Meter	2,304		-				
11	Supply of 4 core 185mm ² PVC cable for Connection of LT Transformer terminal to APMS as per order code	Meter	2,304		-				
12	supply of Allied accessories for for installation of LT Busbar and Terminal connector and Cable Sleeve with breaker etc. (if required)	Jobs	638		-				
13	Supply of Allied accessories for for installation of PVC Cable with Transformer terminal to connector and Cable Sleeve with breaker etc. (if required)	Jobs	638		-				
Subtotal of Part-A					-				
Part -B Installation, testing & Commissioning of 415 Volt Asset Performance Management System (APMS) as per Ordering code of specification PPMC-DS-01:2026 & SOR and its interfacing & configurian with AMI System including insertion of SIMs with communication modules.									
1	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	228		-		not applicable		
2	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	87		-				
3	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	35		-				
4	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	187		-				
5	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	72		-				
6	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	29		-				
7	Replacement of 2-phase or 2-leg Transformer & Transportation of Transformer from Regional store to Site & Dismantled Transformer back to Store (100 KVA Pole/Pad) if required	Job	20		-				
8	Replacement of 2-phase or 2-leg Transformer & Transportation of Transformer from Regional store to Site & Dismantled Transformer back to Store (200 KVA Pole/Pad) if required	Job	20		-				
Subtotal of Part-B					-				
Part -C Summary of Cost									

					-				
	Subtotal of Part A					-			
	Subtotal of Part B					-			
Grand Total without GST/PST					-				
Grand Total with GST/PST					-				



Price Schedule for (Jhelum) Circle									
#	Description	Supply from Purchaser's Company					Supply outside Purchaser's Company		
		UoM	Qty	Unit rate EXW including inland Transportation upto site without GST	Total Price	GST/PST	Unit rate DDP including inland Transportation upto site without GST	Total Price	GST/PST
1	2	3	4	5	6=4x5	7=6x rate of tax	8	9=4x8	10=9x rate of tax
Part -A Supply of Material/System Upto Site									
1	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	228.00		-				
2	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	87.00		-				
3	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	35.00		-				
4	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	187.00		-				
5	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	72.00		-				
6	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	29.00		-				
7	Supply AAC WASP Insulated Conductor for installation of LT Busbar (for 100 and 200kVA T/F) (mandatory)	Meter	7,656.00		-				
8	Supply Spool Insulator for installation of LT Busbar (if required)	Nos.	5,104.00		-				
9	Supply D-Shackle for Spool Insulator for installation of LT Busbar (if required)	Nos.	5,104.00		-				
10	Supply of 4 core 120mm ² PVC cable for Connection of LT Transformer terminal to APMS as per order code	Meter	2,304.00		-				
11	Supply of 4 core 185mm ² PVC cable for Connection of LT Transformer terminal to APMS as per order code	Meter	2,304.00		-				
12	supply of Allied accessories for for installation of LT Busbar and Terminal connector and Cable Sleeve with breaker etc. (if required)	Jobs	638.00		-				
13	Supply of Allied accessories for for installation of PVC Cable with Transformer terminal to connector and Cable Sleeve with breaker etc. (if required)	Jobs	638.00		-				
Subtotal of Part-A					-				
Part -B Installation, testing & Commissioning of 415 Volt Asset Performance Management System (APMS) as per Ordering code of specification PPMC-DS-01:2026 & SOR and its interfacing & configurian with AMI System including insertion of SIMs with communication modules.									
1	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	228.00		-		not applicable		
2	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	87.00		-				
3	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	35.00		-				
4	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	187.00		-				
5	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	72.00		-				
6	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	29.00		-				
7	Replacement of 2-phase or 2-leg Transformer & Transportation of Transformer from Regional store to Site & Dismantled Transformer back to Store (100 KVA Pole/Pad) if required	Job	20.00		-				
8	Replacement of 2-phase or 2-leg Transformer & Transportation of Transformer from Regional store to Site & Dismantled Transformer back to Store (200 KVA Pole/Pad) if required	Job	20.00		-				
Subtotal of Part-B					-				
Part -C Summary of Cost									
	Subtotal of Part A				-				

					-				
	Subtotal of Part B								
	Grand Total without GST/PST				-				
	Grand Total with GST/PST				-				



Price Schedule for (Chakwal) Circle									
#	Description	Supply from Purchaser's Company					Supply outside Purchaser's Company		
		UoM	Qty	Unit rate EXW including inland Transportation upto site without GST	Total Price	GST/PST	Unit rate DDP including inland Transportation upto site without GST	Total Price	GST/PST
1	2	3	4	5	6=4x5	7=6x rate of tax	8	9=4x8	10=9x rate of tax
Part -A Supply of Material/System Upto Site									
1	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	228.00		-				
2	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	87.00		-				
3	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	35.00		-				
4	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	187.00		-				
5	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	72.00		-				
6	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	29.00		-				
7	Supply AAC WASP Insulated Conductor for installation of LT Busbar (for 100 and 200kVA T/F) (mandatory)	Meter	7,656.00		-				
8	Supply Spool Insulator for installation of LT Busbar (if required)	Nos.	5,104.00		-				
9	Supply D-Shackle for Spool Insulator for installation of LT Busbar (if required)	Nos.	5,104.00		-				
10	Supply of 4 core 120mm ² PVC cable for Connection of LT Transformer terminal to APMS as per order code	Meter	2,304.00		-				
11	Supply of 4 core 185mm ² PVC cable for Connection of LT Transformer terminal to APMS as per order code	Meter	2,304.00		-				
12	supply of Allied accessories for for installation of LT Busbar and Terminal connector and Cable Sleeve with breaker etc. (if required)	Jobs	638.00		-				
13	Supply of Allied accessories for for installation of PVC Cable with Transformer terminal to connector and Cable Sleeve with breaker etc. (if required)	Jobs	638.00		-				
Subtotal of Part-A					-				
Part -B Installation, testing & Commissioning of 415 Volt Asset Performance Management System (APMS) as per Ordering code of specification PPMC-DS-01:2026 & SOR and its interfacing & configurian with AMI System including insertion of SIMs with communication modules.									
1	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	228.00		-		not applicable		
2	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	87.00		-				
3	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	35.00		-				
4	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	187.00		-				
5	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	72.00		-				
6	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	29.00		-				
7	Replacement of 2-phase or 2-leg Transformer & Transportation of Transformer from Regional store to Site & Dismantled Transformer back to Store (100 KVA Pole/Pad) if required	Job	20.00		-				
8	Replacement of 2-phase or 2-leg Transformer & Transportation of Transformer from Regional store to Site & Dismantled Transformer back to Store (200 KVA Pole/Pad) if required	Job	20.00		-				
Subtotal of Part-B					-				
Part -C Summary of Cost									

					-				
	Subtotal of Part A				-				
	Subtotal of Part B				-				
Grand Total without GST/PST					-				
Grand Total with GST/PST					-				



Price Schedule for (Islamabad) Circle

#	Description	Supply from Purchaser's Company					Supply outside Purchaser's Company		
		UoM	Qty	Unit rate EXW including inland Transportation upto site without GST	Total Price	GST/PST	Unit rate DDP including inland Transportation upto site without GST	Total Price	GST/PST
1	2	3	4	5	6=4x5	7=6x rate of tax	8	9=4x8	10=9x rate of tax
Part -A Supply of Material/System Upto Site									
1	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	228.00		-				
2	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	87.00		-				
3	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 100kVA DTF	Nos.	35.00		-				
4	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	187.00		-				
5	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	72.00		-				
6	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted 200kVA DTF	Nos.	29.00		-				
7	Supply AAC WASP Insulated Conductor for installation of LT Busbar (for 100 and 200kVA T/F) (mandatory)	Meter	7,656.00		-				
8	Supply Spool Insulator for installation of LT Busbar (if required)	Nos.	5,104.00		-				
9	Supply D-Shackle for Spool Insulator for installation of LT Busbar (if required)	Nos.	5,104.00		-				
10	Supply of 4 core 120mm ² PVC cable for Connection of LT Transformer terminal to APMS as per order code	Meter	2,304.00		-				
11	Supply of 4 core 185mm ² PVC cable for Connection of LT Transformer terminal to APMS as per order code	Meter	2,304.00		-				
12	supply of Allied accessories for for installation of LT Busbar and Terminal connector and Cable Sleeve with breaker etc. (if required)	Jobs	638.00		-				
13	Supply of Allied accessories for for installation of PVC Cable with Transformer terminal to connector and Cable Sleeve with breaker etc. (if required)	Jobs	638.00		-				
14	APMS System as per SoR for monitoring of Events, Harmonics, PF, Temperature, etc interoperable with IESCO HES for entire IESCO Network (11000 license)	Job	1		-				
Subtotal of Part-A					-				
Part -B Installation, testing & Commissioning of 415 Volt Asset Performance Management System (APMS) as per Ordering code of specification PPMC-DS-01:2026 & SOR and its interfacing & configurian with AMI System including insertion of SIMs with communication modules.									
1	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	228.00		-		not applicable		
2	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	87.00		-				
3	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-100 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	35.00		-				
4	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-S-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	187.00		-				
5	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-CB-OTL-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	72.00		-				
6	Supply of 415 Volt Asset Performance Management System (APMS) as per Ordering code APMS-MC-200 of specification PPMC-DS-01:2026 & SOR for Pole Mounted DTF	Nos.	29.00		-				
7	Replacement of 2-phase or 2-leg Transformer & Transportation of Transformer from Regional store to Site & Dismantled Transformer back to Store (100 KVA Pole/Pad) if required	Job	20.00		-				
8	Replacement of 2-phase or 2-leg Transformer & Transportation of Transformer from Regional store to Site & Dismantled Transformer back to Store (200 KVA Pole/Pad) if required	Job	20.00		-				

Subtotal of Part-B					-				
Part -C Summary of Cost									
	Subtotal of Part A				-				
	Subtotal of Part B				-				
Grand Total without GST/PST					-				
Grand Total with GST/PST					-				



**WAPDA
NATIONAL TRANSMISSION AND DESPATCH
COMPANY
SPECIFICATION P-63:2007**



ALUMINIUM STRANDED CONDUCTOR

DESIGN DEPARTMENT

C O N T E N T S

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PRINTING HISTORY

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Revised on 08th August, 2007.

SPECIFICATION P-63:79

ALUMINIUM STRANDED CONDUCTORS

0 FOREWORD

- 0.1 This standard specification has been introduced by WAPDA and lays down specification for aluminium stranded conductors.
- 0.2 This specification is based on IEC recommendation 207 and is subject to revision as and when required.
- 0.3 This specification is intended for procurement of material and does not include provisions of contract.

1 GENERAL

- 1.1 The 500 kV, 220kV and 132 kV buses shall have mechanical strength to withstand stresses arising from symmetrical short circuit currents as follows:

For 500 kV and 132 kV buses= 40 kA

For 220 kV buses = 63 kA
- 1.2 The continuous current rating for main buses shall be not less than 3150 A for 500 kV and 220 kV and 2000 A for 132 kV switchyard under the specified conditions. The continuous current ratings for the overhead conductors to be used for connections of transmission lines and transformers and the conductors for equipment inter-connections shall be not less than the continuous current ratings of the equipment i.e. 3150 A for 500 kV and 2000A for 220 kV and 132 kV switchyards under the specified conditions.
- 1.3 Three bundle all aluminium "Coreopsis" conductor shall be used for main busbars of 500 kV & 220 kV and two bundle all aluminum "Coreopsis" conductor for 132 kV switchyards. High level and low level overhead buses to be used for line/transformer feeder shall use three bundle "Coreopsis" conductor for 500kV and two bundle coreopsis conductor for 220 kV and 132 kV.
- 1.4 Ground connections shall be provided on equipment buses at all the necessary locations for temporary earthing on both sides of the equipment(s) under maintenance. Design, quantity to be supplied and locations of connectors shall be subject to approval by the Engineer.
- 1.5 Different parameters of 500kV and 220kV transmission lines are given in Clause 5.1.

2 SCOPE

- 2.1 This specification covers aluminium stranded conductors made from round aluminium wires, for use as overhead electrical conductors.

3 DEFINITIONS

- 3.1 For the purposes of this specification the following definitions shall apply.

- 3.2 Solid Conductor. A conductor consisting of one circular wire.

- 3.3 Stranded Conductor. A conductor consisting of seven or more aluminium wires of the same nominal diameter twisted together in concentric layers. When the conductor consists of more than one layer, successive layers are twisted in opposite directions.

- 3.4 Diameter. Mean of two measurements at right angles taken at the same cross-section.

- 3.5 Direction of Lay. The direction of lay is defined as right hand or left hand .With right hand lay; the wires shall conform to the direction of the central parts of the letter 'Z' when the conductor is held vertically. With left hand lay, the wires conform to the direction of the central part of the letter 'S' when the conductor is held vertically.

- 3.6 Lay Ratio. Ratio of the axial length of a complete turn of the helix formed by an individual wire in a stranded conductor to the external diameter of the helix.

4 STANDARDS FOR ALUMINIUM CONDUCTOR

- 4.1 Resistivity

The resistivity of aluminium wire depends upon its purity and its physical condition. For the purposes of this specification the maximum value permitted is 0.028264 ohm.sq mm/m at 20° C and this value shall also be used as standard resistivity for the purpose of calculation.

- 4.2 Density

At a temperature of 20°C, the density of hard-drawn aluminium wire is to be taken as 2.703 kg/dm³.

- 4.3 Coefficient of Linear Expansion

The coefficient of linear expansion of hard-drawn aluminium wire is to be taken as 2.703 kg/dm³.

4.4 Constant – mass Temperature Coefficient

At a temperature of 20°C the “Constant Mass” temperature coefficient of resistance, α , of hard drawn aluminium wire, measured between two potential points rigidly fixed wire, measured between two potential points rigidly fixed to the wire, is taken as 0.00403 per centigrade degree.

5 **MATERIAL**

5.1 The conductor shall be constructed of hard-drawn aluminium wire having the mechanical and electrical properties specified herein. The material shall contain not less than 99.5 percent aluminium by weight.

5.2 The mechanical properties of hard drawn aluminium wire shall be in accordance with Table-I given below:

Table- I

Mechanical properties of hard drawn aluminium wire

<u>Nominal wire diameter</u> <u>diameter</u> mm	<u>Minimum Ultimate tensile stress</u> <u>Before stranding After stranding</u>	
	kg/sq mm	kg/sq mm
1.25	20.4	19.4
1.50	19.7	18.7
1.75	19.2	18.2
2.00	18.8	17.9
2.25	18.4	17.5
2.50	18.0	17.1
2.75	17.6	16.7
3.00	17.2	16.3
3.25	16.9	16.0
3.50	16.7	15.9
3.75	16.5	15.7
4.00	16.3	15.5
4.25	16.3	15.5
4.50	16.2	15.4
4.75	16.2	15.4
5.00	16.2	15.4

5.3 For wires of intermediate diameter, the minimum ultimate tensile stress shall be the same as for the next larger diameter.

5.4 The aluminium wires shall be clean, smooth and free from harmful defects prior to being stranded.

6 DIMENSIONS AND CHARACTERISTICS

6.1 Standard Sizes

The dimensions and characteristics of the conductors standardised for use by NTDC/WAPDA and covered by this specification are given in table –II.

Code Word	Nominal Size	Stranding and wire dia	Dia of complete conductor	Calculated area of complete conductor	Ultimate strength	D.C resistance at 20°C	Weight
	Sq mm	No/mm	mm	Sq mm	kg	Ohms/km	Kg/km
Gant	25	7/2.21	6.63	26.85	469	1.0661	73.4
Ant	50	7/3.10	9.30	52.83	847	0.5419	144.4
Wasp	100	7/4.39	13.17	105.95	1633	0.2702	290.1
Arbutus	400	37/3.72	26.06	402.14	6304	0.0717	1108.7
Hawthorn	600	61/3.55	31.95	603.78	8966	0.0479	1668.1
Coreopsis	810.74	61/4.11	36.99	1075.06	13670	0.0356	2241.0

6.1.1 Tolerances

A tolerance of plus or minus one percent with a minimum of 0.025 mm is permitted on the nominal diameter of all the wires. The cross-section of any wire shall not depart from circularity by more than an amount corresponding to a tolerance of 2 percent on the nominal standard diameter.

6.2 Joints

6.2.1 There shall be no joints in any wire of a stranded conductor containing seven wires, except those made in the base rod or wire before final drawing.

6.2.2 In stranded conductors containing more than seven wires, joints in individual wires are permitted, in addition to those made in the base rod or wires before final drawing, but no two such joints shall be less than 15 m apart in the complete stranded conductor. Such joints shall be made by resistance or cold pressure butt welding. They are not required to fulfil the mechanical or electrical requirements for unjointed wires. Joints made by resistance butt welding shall, subsequent to welding, be annealed over a distance of at least 200 mm on each side of the joint.

6.3 Stranding

6.3.1 The wires used in the construction of stranded conductor shall before stranding, satisfy all the relevant requirements of this specification.

- 6.3.2 The lay ratio of different layers shall be within the limits given in the table-III.

Table-III: Lay ratio for aluminium stranded conductors.

L a y R a t i o								
No of wires in conductors	6-wire min	Layer max	12-wire min	Layer max	18-wire min	Layer Max	24-wirw min	Layer max
7	10	14	-	-	-	-	-	-
19	10	16	10	14	-	-	-	-
37	10	17	10	16	10	14	-	-
61	10	17	10	16	10	15	10	14

- 6.3.3 In all constructions the successive layers shall have opposite directions of lay, the outermost layer being right handed. The wires in each layer shall be evenly and closely stranded.

- 6.3.4 In aluminium stranded conductors having multiple layers of wires, the lay ratio of any layer shall not be greater than the lay ratio of the layer immediately beneath it.

6.4 Calculation of Conductor Properties

- 6.4.1 The properties of the conductors shall be calculated in accordance with clause 6.4.2 below.

- 6.4.2 The resistance of any length of the stranded conductor is the resistance of the same length of any wire multiplied by a constant as given in table-IV given below.

Table –IV:

Stranding Constants		
Stranding Constant		
Number of wires in conductor	weight	Resistance
7	7.091	0.1447
19	19.34	0.05357
37	37.74	0.027757
61	62.35	0.01676

- 6.4.3 The weight of each wire in any particular layer of a length of stranded conductor, except the central wire, will be greater than that of an equal length of straight wire by an amount depending on the mean lay ratio of that layer. The total weight of any length of any aluminium stranded conductor is therefore obtained by multiplying the weight of an equal length of straight wire by the appropriate constant given in table-IV above.

- 6.4.4 The strength of a stranded conductor containing not more than 37 wires, in terms of the strength of the individual component wires, may be taken to be 95% of the sum of the strengths of individual aluminium wires before stranding calculated from the value of the minimum ultimate tensile stress given in table-I.

The strength of a stranded conductor containing more than 37 wires may be taken to be 90% of the sum of the strengths of the individual aluminium wires calculated from the value of minimum ultimate tensile stress given in table-I

- 6.4.5 For testing the ultimate tensile strength of a complete stranded conductor, suitable fittings shall be applied to the ends of a sample of conductor which shall be not less than 5 meter long and the assembly shall then be pulled in a suitable tensile testing machine.

7 TEST METHODS

7.1 Tensile Test

- 7.1.1 This test shall be made on aluminium wires prior to and after stranding. The breaking load of the specimen cut from the sample shall be determined by means of a tensile testing machine of which the accuracy can easily be checked and to which adjustments can be made if necessary.
- 7.1.2 When an automatic tensile testing machine is used, the load shall be applied gradually and the rate of separation of jaws of the testing machine shall not be greater than 100 mm per minute.
- 7.1.3 When a hand operated lever testing machine is used, 90% of the specified breaking load shall be applied quickly and the load shall then be increased steadily until the specimen breaks. The time taken in applying the last 10 percent of the load shall be approximately 15 seconds and the total time from first application of load to fracture shall be approximately 20 seconds.
- 7.1.4 The tensile strength shall not be less than the values specified in clause 4.2.

7.2 Wrapping Test

- 7.2.1 The aluminium wire shall be wrapped round a mandrel of diameter equal to the wire diameter to form a close helix of eight turns. Six turns shall then be unwrapped and again closely wrapped.
- 7.2.2 The wire shall not break or show any cracks.

7.3 Resistivity Test

- 7.3.1 The electrical resistance of aluminium wire shall be measured to an accuracy of at least one part in a thousand. The length of the specimen shall be sufficient to give the accuracy required and shall be suitable for the

method of testing used. The resistance shall be measured at a temperature which shall not be less than 10°C and not more than 30°C. The measured resistance shall be corrected to the value at 20°C by means of the formula.

$$R_{20} = R_T \left(\frac{1}{1 + \alpha (T - 20)} \right)$$

Where: T = temperature of measurement in °C
 R_T = resistance at T °C
 R_{20} = resistance at 20 °C
 and α = constant –mass temperature coefficient of resistance (=0.00403).

- 7.3.2 The resistivity at 20 °C shall then be calculated from the resistance at 20 °C. The resistivity at 20 °C shall not exceed the value specified in clause 4.1.

8 TESTS BY MANUFACTURER

- 8.1 The manufacturer shall progressively carry out tests to maintain quality control and to ensure manufacture of conductor in compliance with the specification. Such tests shall include the following, but need not be restricted to them.
- 1) Visual Inspection
 - 2) Verification of Dimensions
 - 3) Tensile Tests
 - 4) Wrapping Test
 - 5) Resistivity Tests
- 8.2 Visual inspection and verification of dimensions shall be carried out as routine tests on wires and complete conductors.
- 8.3 Before the start of manufacture the base rod shall be tested for resistivity. One specimen shall be selected at random out of every 10 coils for test. Material not conforming to the standard shall not be used.
- 8.4 The tensile strength and wrapping test shall be carried out on wire finished to size but before stranding. Samples shall be drawn from not less than 10 percent of the individual lengths of aluminium wire which will be included in any one consignment.
- 8.5 The manufacturer shall maintain a record of all the tests carried out by him for examination by the authorised representative of NTDC/WAPDA.
- 8.6 The manufacturer shall furnish a certificate to the effect that the aluminium stranded conductor manufactured by him conforms in all respects to the requirements of this standard.

9 ACCEPTANCE TESTS

9.1 The following tests shall be carried out on the aluminium stranded conductor for acceptance.

- 1) Visual Inspection
- 2) Verification of dimensions
- 3) Tensile Test
- 4) Wrapping Test
- 5) Resistivity Test

10 ACCEPTANCE AND REJECTION

10.1 The manufacturer shall divide each consignment into lots for inspection. These lots shall be so selected that material in a lot is of reasonably uniform quality and as far as possible, is manufactured at the same time and under the same conditions. The manufacturer shall keep sufficient production records to ensure that this can be done regularly. A lot may contain any number of lengths upto a maximum of 150.

10.2 From each lot, regardless of its size, samples of wires shall be taken at random from 10 lengths of stranded conductor. One sample sufficient to provide one specimen for each test, shall be taken from each strand of the conductor in each of the selected lengths.

10.3 The samples taken shall be subjected to each of the tests prescribed in clause 9. The lot shall be accepted, if for each test, the sample complies with the requirements of clauses 10.4 and 10.5.

10.4 If in any test, at most one specimen fails the sample shall be considered acceptable for that test.

10.5 If two specimens fail in any test, a further sample in accordance with clause 10.2, shall be taken from the lot, and the particular test repeated. If there are no further failures the samples shall be considered acceptable for the test.

10.6 If in any test three or more specimens fail, the entire lot shall be rejected.

10.7 The manufacturer shall afford to the inspector all necessary test facilities and assistance for carrying out the tests. The facilities shall be provided free of charge.

11 PACKING AND MARKING

- 11.1 Aluminium stranded conductor shall be supplied on stranded wooden reels as per fig 1. The reels shall be made from high quality wood and shall be of sound construction, able to withstand the usual rigours of transportation and field construction. The complete periphery of the reels apart from being protected by heavy wooden lagging railed at each end of the reel flanges as per fig. 1, shall also be bound by two steel straps. The wooden reels shall be given two brush coats of 5 percent pentachlorophenol solution in oil before winding of conductor. The conductor shall be wound tightly.
- 11.2 The conductor shall be supplied in lengths specified in fig 1. Each reel shall contain either one or two lengths only as specified. A tolerance of plus or minus 5 percent is permitted on the conductor length. Additionally it shall be permissible to supply not more than 5 percent of the lengths on any one order in random lengths, none of which shall be shorter than one third of the nominal length.
- 11.3 The manufacturer shall provide the following markings on the reels in legible and indelible letters.
- 1) Manufacturer's name and designation
 - 2) Conductor designation
 - 3) Address of the consignee and purchase order number
 - 4) Serial number of the reel
- 11.4 The manufacturer shall stamp the following information on metallic plates which shall be securely nailed to the reel.
- 1) Size and designation of aluminium stranded conductor
 - 2) Net weight, tare weight and gross weight in kg
 - 3) Total length of the conductor on the reel, in meters
 - 4) Serial number of the reel
- 11.5 Both sides of the reel shall have an arrow marking indicating the direction of rolling.
- 11.6 All markings shall appear on both sides of the reel in the positions indicated in figure 1.

Enclose Fig 1b

Broadened Definition of Similar / Comparable Works

- Asset Performance Management Systems (APMS)
- Advanced Metering Infrastructure (AMI)
- SCADA / Distribution Management Systems
- Transformer / Distribution Transformer Monitoring Systems
- Remote Terminal Units (RTUs) and data acquisition systems
- Distribution Automation systems
- Asset Management systems

JV / Consortium Experience

Qualification requirements relating to specific experience may be met collectively by JV/Consortium members, provided that at least one member demonstrates relevant experience in the core activity. Experience of a committed OEM/manufacture or specialist subcontractor may also be considered for the relevant portion of the works, subject to documentary evidence and the Bidder's full contractual responsibility.

Manufacturer Production / Execution Capacity

"The Manufacturer shall demonstrate adequate manufacturing/production and execution capacity to complete the subject order within the stipulated completion period. Capacity shall be assessed on the basis of available production facilities, current commitments, planned production capacity, manpower, testing facilities and relevant documentary evidence. A bidder shall not be disqualified solely because its installed capacity is not twice the combined value of current, pipeline and subject orders, provided adequate capacity to complete the subject contract is satisfactorily demonstrated."

Evidence / Documentary Requirements

- Contract agreement / Purchase Order / Work Order
- Completion certificate or satisfactory performance certificate
- Employer-issued performance certificate, where available
- Documentary evidence of actual scope and value performed
- **For JV/subcontractor experience:** JV agreement, subcontract agreement or other evidence establishing actual participation
- **For manufacturer references:** commissioning/operation or satisfactory performance evidence

The proposed software solution, including all applications, modules, components, interfaces, databases, APIs and associated services, shall comply with all applicable cybersecurity and information-security laws, regulations, policies, standards and guidelines of the Government of Pakistan and National CERT (nCER/ PKCERT), including the applicable requirements and controls of the Pakistan Information Security Framework (PISF), as amended or updated from time to time. The software shall incorporate appropriate security controls throughout its lifecycle, including secure software acquisition and development practices, access control, data protection, vulnerability and patch management, security testing, audit logging, incident response and supply-chain security. The Bidder/Vendor shall provide relevant security and compliance documentation and shall ensure that the proposed solution is free from malicious code, unauthorized access mechanisms, security backdoors and known exploitable vulnerabilities. Where applicable, the software shall be subject to security assessment, screening, vulnerability assessment, penetration testing, audit or validation by the Purchaser or the competent authority prior to deployment and during the contract period.

The Contractor shall be responsible for obtaining, at its own cost, all applicable cybersecurity assessments, screening, evaluation, certification and/or approvals for the proposed software from National CERT (nCER/ PKCERT), PSS and/or any other relevant competent authority, as applicable under the prevailing Government of Pakistan cybersecurity requirements and standards. The Contractor shall facilitate all required technical evaluations, security testing and assessments, address any observations or identified vulnerabilities, and obtain the applicable certificate, clearance, assessment report and/or approval prior to final acceptance and deployment of the software.

References

- * Pakistan Information Security Framework (PISF) 2026 – National CERT (nCER/ PKCERT) — including Essential SSDLC, System & Communication Protection, Identity & Access Management, Data Protection, Incident Response, Supply Chain Management and Audit Controls.
- * CERT Rules, 2023 – Government of Pakistan / National CERT — relevant to cybersecurity requirements and assessment/screening of ICT hardware and software.
- * National CERT – Engagement & Oversight Framework for Audit Activities — applicable where formal cybersecurity audit or compliance assessment is required.
- * National CERT – Cybersecurity Audit Firm Registration Criteria — including applicable IT/OT security standards and PISF compliance requirements.
- * Pakistan National Cyber Security Policy 2021 — listed among the official cybersecurity policies and legislation maintained by PKCERT.

CONSTRUCTION EXPERIENCE

Form EXP - 4.1 General Construction Experience

Bidder's Name: _____

Date: _____

JV Member's Name _____

Bid Reference No. (if any) and title: _____

Page _____ of _____ pages

Starting Year	Ending Year	Contract Identification	Role of Bidder
		Contract name: _____ Brief Description of the Works performed by the Bidder: _____ Amount of contract: _____ Name of EMPLOYER: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Bidder: _____ Amount of contract: _____ Name of EMPLOYER: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Bidder: _____ Amount of contract: _____ Name of EMPLOYER: _____ Address: _____	

Form EXP - 4.2(a)
Specific Construction and Contract Management Experience

Bidder's Name: _____

Date: _____

JV Member's Name _____

Bid Reference No. (if any) and title: _____

Page _____ of _____ pages

Similar Contract No.	Information			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor ☐	Member in JV ☐	Management Contractor ☐	Sub-contractor ☐
Total Contract Amount	PKR equivalent			
If member in a JV or sub-contractor, specify participation in total Contract amount				
EMPLOYER's Name:				
Address:				
Telephone/fax number				
E-mail:				

Form EXP - 4.2(a) (cont.)
Specific Construction and Contract Management Experience (cont.)

Similar Contract No.	Information
Description of the similarity in accordance with Sub-Factor 4.2(a) of Section III:	
1. Amount	
2. Physical size of required works items	
3. Complexity	
4. Methods/Technology	
5. Construction rate for key activities	
6. Other Characteristics	

Form EXP - 4.2(b)
Construction Experience in Key Activities

Bidder's Name: _____

Date: _____

Bidder's JV Member Name: _____

Sub-contractor's Name (if any): _____

Bid Reference No. (if any) and title: _____

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All Sub-contractors for key activities must complete the information and Qualification Criteria and Requirements, Sub-Factor 4.2.

1. Key Activity No One: _____

Information				
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor ☐	Member in JV ☐	Management Contractor ☐	Sub-contractor ☐
Total Contract Amount	PKR equivalent			
Quantity (Volume, number or rate of production, as applicable) performed under the contract per year or part of the year	Total quantity in the contract (i)	Percentage participation (ii)	Actual Quantity Performed (i) x (ii)	
Year 1				
Year 2				
Year 3				
Year 4				
EMPLOYER's Name:				
Address:				
Telephone/fax number				

	Information
E-mail:	

2. Activity No. Two

3.

	Information
Description of the key activities in accordance with Section III:	

Form EXP - 4.2 (c)
Specific Experience in Managing ES aspects

[The following table shall be filled in for contracts performed by the Bidder, and each member of a Joint Venture]

Bidder's Name: *[insert full name]*

Date: *[insert day, month, year]*

Joint Venture Member Name: *[insert full name]*

Bid Reference No. (if any) and title: *[insert ICB/NCB number and title]*

Page *[insert page number]* of *[insert total number]* pages

1. Key Requirement no 1 in accordance with 4.2 (c): _____

Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor ☐	Member in JV ☐	Management Contractor ☐	Subcontractor ☐
Total Contract Amount			PKR	
Details of relevant experience				

2. Key Requirement no 2 in accordance with 4.2 (c): _____
3. Key Requirement no 3 in accordance with 4.2 (c): _____
4. [PA define key requirements]

Contractor's Representative and Key Personnel Schedule

Bidders should provide the names and details of the suitably qualified Contractor's Representative and Key Personnel to perform the Contract. The data on their experience should be supplied using the Form PER-2 below for each candidate.

Contractor' Representative and Key Personnel

1.	Title of position:	
	Name of candidate:	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment: for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>
2.	Title of position:	
	Name of candidate:	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment: for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>
3.	Title of position:	
	Name of candidate:	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment: for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>
4.	Title of position:	
	Name of candidate:	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>

	Time commitment: for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>
5.	Title of position:	
	Name of candidate	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment: for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>
6.	Title of position: <i>[insert title]</i>	
	Name of candidate	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment: for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>

**Form PER-2:
Resume and Declaration
Contractor's Representative and Key Personnel**

Name of Bidder

Position [#1]: <i>[title of position from Form PER-1]</i>		
Personnel information	Name:	Date of birth:
	Address:	E-mail:
	Professional qualifications:	
	Academic qualifications:	
	Language proficiency: <i>[language and levels of speaking, reading and writing skills]</i>	
details		
	Address of Employer:	
	Telephone:	Contact (manager / personnel officer):
	Fax:	
	Job title:	Years with present Employer:

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

Project	Role	Duration of involvement	Relevant experience
<i>[main project details]</i>	<i>[role and responsibilities on the project]</i>	<i>[time in role]</i>	<i>[describe the experience relevant to this position]</i>

Declaration

I, the undersigned [insert either “Contractor’s Representative” or “Key Personnel” as applicable] , certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Bid:

Commitment	Details
Commitment to duration of contract:	<i>[insert period (start and end dates) for which this Contractor’s Representative or Key Personnel is available to work on this contract]</i>
Time commitment:	<i>[insert period (start and end dates) for which this Contractor’s Representative or Key Personnel is available to work on this contract]</i>

I understand that any misrepresentation or omission in this Form may:

- (a) be taken into consideration during Bid evaluation;
- (b) result in my disqualification from participating in the Bid;
- (c) result in my dismissal from the contract.

Name of Contractor’s Representative or Key Personnel: *[insert name]*

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Bidder:

Signature: _____

Date: (day/month/year): _____

Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as specified in Eligibility and Qualification Criteria.

No.	Source of financing	Amount (Eq. PKR)
1		
2		
3		

Past Experience / Contracts

Contracts over <i>[insert amount]</i> during the last three years:				
Procuring Agency	Value	Year	Goods/Services Supplied	Country of Destination



Historical Contract Non-Performance, and Pending Litigation and Litigation History

[The following table shall be filled in for the Applicant and for each member of a Joint Venture]

Applicant's Name: *[insert full name]*

Date: *[insert day, month, year]*

Joint Venture Member Name: *[insert full name]*

IFP No. and title: *[insert IFP number and title]*

Page *[insert page number]* of *[insert total number]* pages

☐ Not debarred due to deviation from commitment of Bid Securing Declaration- ☐ Not debarred due to non-performance			
Year	Non-performed portion of contract	Contract Identification	Total Contract Amount (current value, currency, exchange rate and PKR equivalent)
<i>[insert year]</i>	<i>[insert amount and percentage]</i>	Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Procuring Agency: <i>[insert full name]</i> Address of Procuring Agency: <i>[insert street/city/country]</i> Reason(s) for nonperformance: <i>[indicate main reason(s)]</i>	<i>[insert amount]</i>
Pending Litigation, in accordance with Section III, Qualification Criteria and Requirements			
☐ Pending litigation in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 2.3 as indicated below.			
Year of dispute	Amount in dispute (currency)	Contract Identification	Total Contract Amount (currency), US\$ PKR Equivalent (exchange rate)

<i>[insert year]</i>	<i>[insert amount]</i>	Contract Identification: [indicate complete contract name, number, and any other identification] Name of Procuring Agency: <i>[insert full name]</i> Address of Procuring Agency: <i>[insert street/city/country]</i> Matter in dispute: <i>[indicate main issues in dispute]</i> Party who initiated the dispute: <i>[indicate "Procuring Agency" or "Supplier"]</i> Status of dispute: <i>[Indicate if it is being treated by the Adjudicator, under Arbitration or being dealt with by the Judiciary]</i>	<i>[insert amount]</i>
☐ No consistent history of court/arbitral award decisions in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 2.4. ☐ Consistent history of court/arbitral award decisions in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 2.4 as indicated below.			
Year of award	Outcome as percentage of Net Worth	Contract Identification	Total Contract Amount (currency), PKR Equivalent (exchange rate)
<i>[insert year]</i>	<i>[insert percentage]</i>	Contract Identification: [indicate complete contract name, number, and any other identification] Name of Procuring Agency: <i>[insert full name]</i> Address of Procuring Agency: <i>[insert street/city/country]</i> Matter in dispute: <i>[indicate main issues in dispute]</i> Party who initiated the dispute: <i>[indicate "Procuring Agency" or "Supplier"]</i> Court/ arbitral award decision: <i>[Indicate if the award decision was against the Applicant or any member of a joint venture.]y]</i>	<i>[insert amount]</i>

Current Contract Commitments / Works in Progress

Bidders and each member to a JV should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Current Contract Commitments					
No.	Name of Contract	Employer's Contact Address, Tel, Fax	Value of Outstanding Work [Current Eq. PKR]	Estimated Completion Date	Average Monthly Invoicing Over Last Six Months [Eq. PKR/month]
1					
2					
3					
4					
5					

Financial Situation and Performance

[The following table shall be filled in for the Applicant and for each member of a Joint Venture]

Applicant's Name: [insert full name]

Date: [insert day, month, year]

Joint Venture Member Name: [insert full name]

IFP No. and title: [insert IFP number and title]

Page [insert page number] of [insert total number] pages

1. Financial data

Type of Financial information in (currency)	Historic information for previous [insert number] years, [insert in words] (amount in currency, currency, exchange rate*, PKR equivalent)				
	Year 1	Year 2	Year 3		
Statement of Financial Position (Information from Balance Sheet)					
Total Assets (TA)					
Total Liabilities (TL)					
Total Equity/Net Worth (NW)					
Current Assets (CA)					
Current Liabilities (CL)					
Working Capital (WC)					
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Cash Flow Information					
Cash Flow from Operating Activities					

* Refer ITA 14 for the exchange rate

3. Financial documents

The Applicant and in case of JV, members of JV shall provide copies of financial statements for *[number]* years pursuant Section III, Qualifications Criteria and Requirements. The financial statements shall:

- (a) reflect the financial situation of the Applicant or in case of JV member, and not an affiliated entity (such as parent company or group member).
 - (b) be independently audited or certified in accordance with local legislation.
 - (c) be complete, including all notes to the financial statements.
 - (d) correspond to accounting periods already completed and audited.
- ☐ Attached are copies of financial statements¹ for the *[number]* years required above; and complying with the requirements.

¹ If the most recent set of financial statements is for a period earlier than 12 months from the date of Application, the reason for this should be justified.

Average Annual Turnover (Annual Sales Value)

[The following table shall be filled in for the Applicant and for each member of a Joint Venture]

Applicant's Name: *[insert full name]*

Date: *[insert day, month, year]*

Joint Venture Member Name: *[insert full name]*

IFP No. and title: *[insert IFP number and title]*

Page *[insert page number]* of *[insert total number]* pages

Annual Turnover Data			
Year	Amount Currency	Exchange rate* (If applicable)	PKR equivalent
<i>[indicate calendar year]</i>	<i>[insert amount and indicate currency]</i>		
		Average Annual Turnover **	

* Refer ITA for date and source of exchange rate.

** Total PKR equivalent for all years divided by the total number of years. See Section III, Qualification Criteria and Requirements, ITA.