

Standard Bidding Document

Replacement of OPGW Span on 220kV Sheikhupura-Ravi Transmission
Line
(Works)

National

Single Stage-One Envelope



September 09, 2026

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Table of Contents

REQUEST FOR BIDS	1
Instructions to Bidders	3
Bid Data Sheet	31
Eligibility Criteria	36
Evaluation Criteria	37
Jobs/Lots	37
Work Specifications and Market Rates	39
Scope of Work	41
Price Schedule	42
General Conditions of Contract	44
Special Conditions of Contract	46
Bid Securing Declaration	64
Contract Form	66
DAAB Agreement	69
Retention Money Security Demand Guarantee	1
Integrity Pact	74
Performance Guarantee Form	76
Annexure	79
Tender book	80
Procurement Forms	81
Past Construction Experiences	1

Contractor's Key Personnel Representative and Their Schedules	1
Financial Resources	1
Past Experience and Completed Contracts	1
Historical Contract Non-Performance, and Pending Litigation and Litigation History	1
Current Contracts and Their Progress	1
Financial Capacity and Net Worth Evaluation Form	1
Average Annual Turnover	1
Additional Forms and Documents	89

REQUEST FOR BIDS

PROCUREMENT OF CIVIL WORKS

1. The **National Grid Company of Pakistan, O/o the Director (Field Operation) Lahore-I (General Manager Asset Management National Grid Company (NGC-North))** has reserved Funds for the procurement planned for FY **2026-27**. The **National Grid Company of Pakistan, O/o the Director (Field Operation) Lahore-I (General Manager Asset Management National Grid Company (NGC-North))** intends to apply part of the proceeds of this Fund to cover eligible payments under the contract for the **"Replacement of OPGW Span on 220kV Sheikhpura-Ravi Transmission Line"** with the reference of **"P116245"**.

2. The **National Grid Company of Pakistan, O/o the Director (Field Operation) Lahore-I (General Manager Asset Management National Grid Company (NGC-North))** invites electronic Bids from eligible Bidders for procurement of Works **(Replacement of OPGW Span on 220kV Sheikhpura-Ravi Transmission Line)** described in the bidding documents on **EPADS v2.0**.

3. **Single Stage-One 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 . 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/116245>** 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 **Wednesday, September 30, 2026 12:00 PM**. E-bids will be opened by using **EPADS v2.0** on the same day at **Wednesday, September 30, 2026 12:30 PM**. 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>.

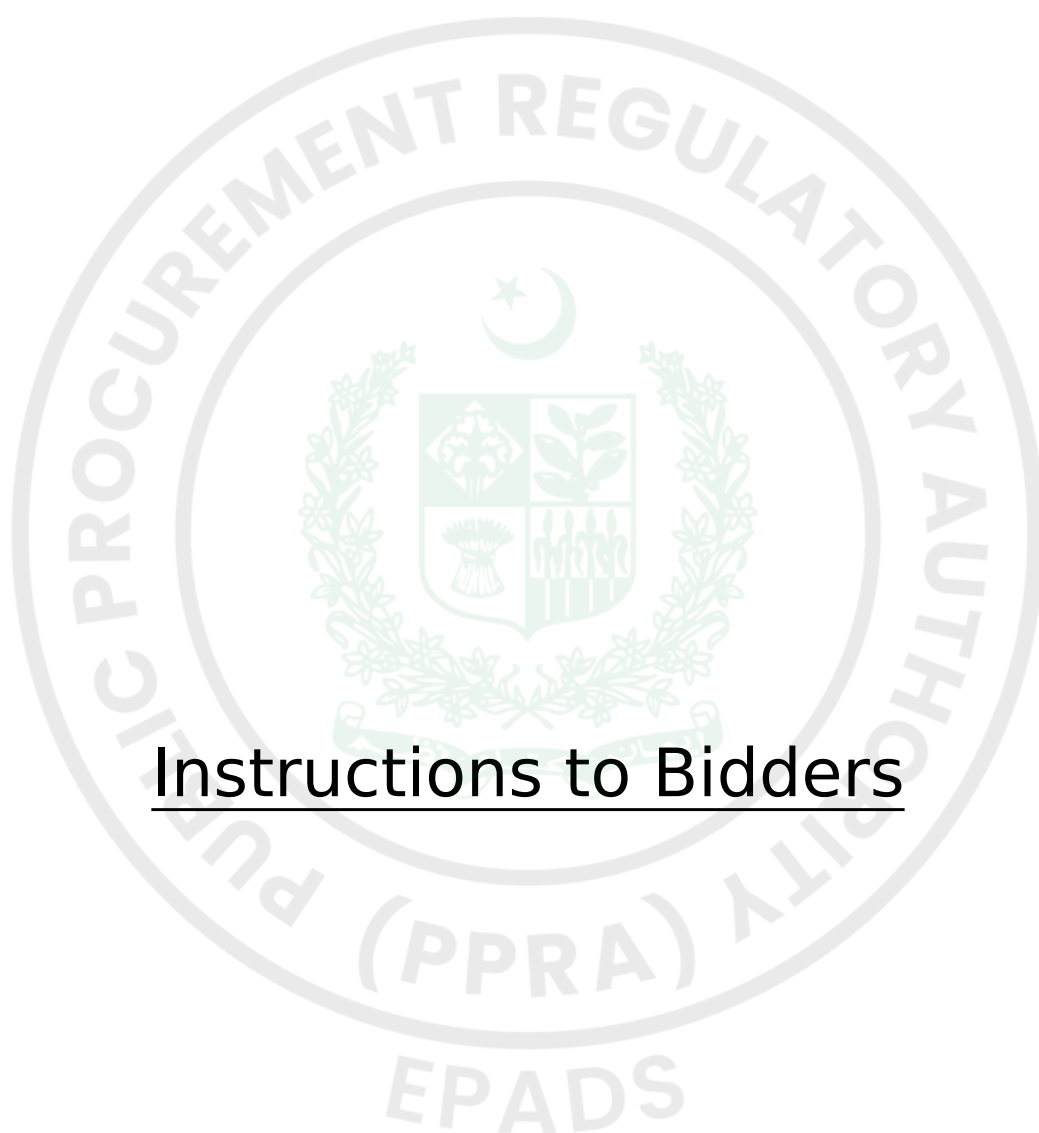
In terms of Rules 48 of Public Procurement Rules, 2004 Grievance Redressal Committee (GRC) is notified for the subject procurement and notification copy is available on the procuring agency's website and on Authority's website at (www.ppra.org.pk).

National Grid Company of Pakistan, O/o the Director (Field Operation) Lahore-I
(General Manager Asset Management National Grid Company (NGC-North)),
Director

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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

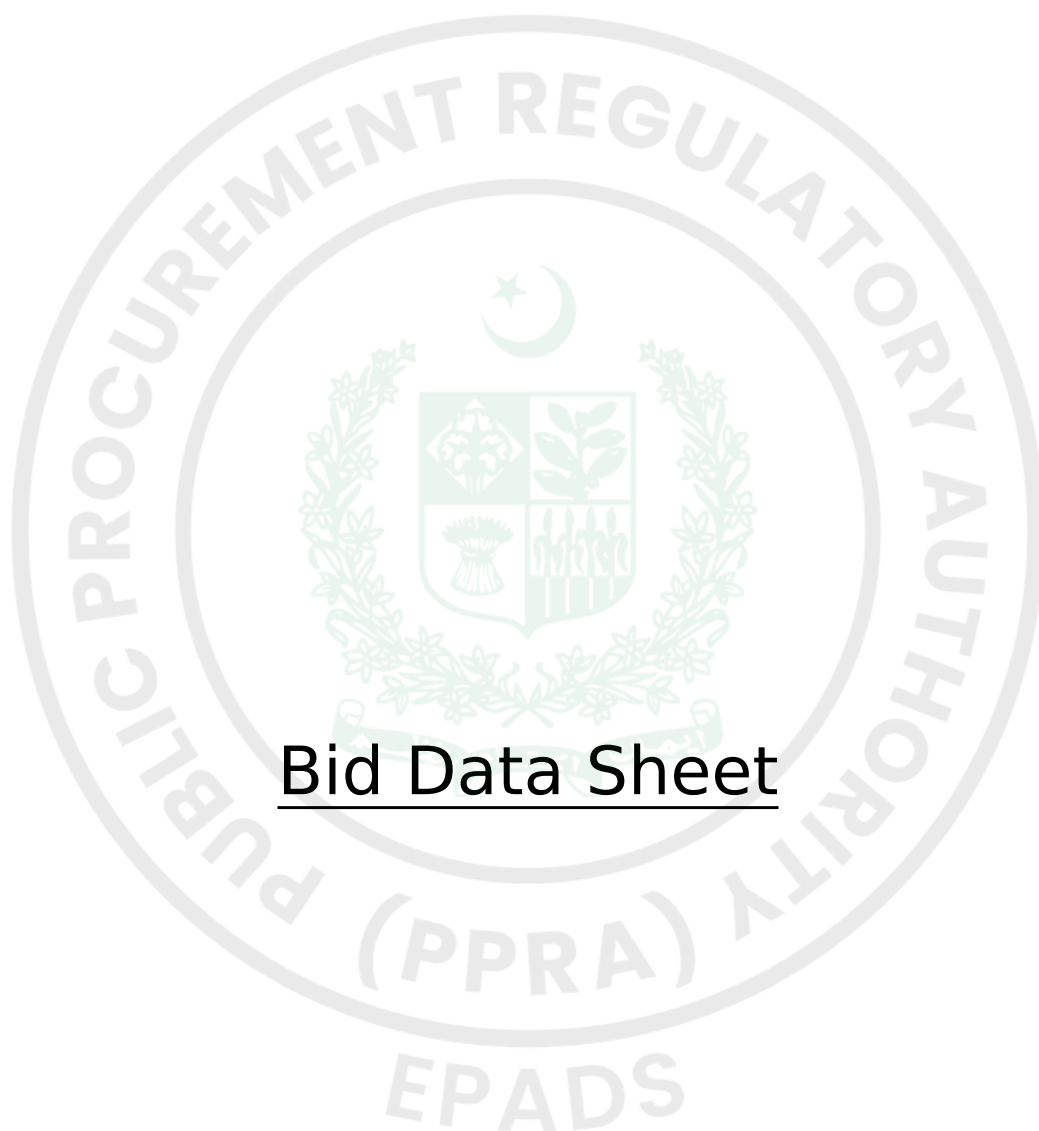
45. Grievance Redressal

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: **National Grid Company of Pakistan, O/o the Director (Field Operation) Lahore-I (General Manager Asset Management National Grid Company (NGC-North))**

The subject of procurement is: **Replacement of OPGW Span on 220kV Sheikhpura-Ravi Transmission Line**

Period for completion of the works **10 Days**

Commencement date execution of the works: **7 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: **P116245**

ITB Number3.1

JV/Consortium or Association Allowed: **No**

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

B. Bidding Documents

ITB Number6.4

The Bidders may seek clarifications through **EPADS v2.0: Last Clarification Date: Friday, September 25, 2026**

C. Preparation of Bids

ITB Number8.1

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

No

ITB Number9.4 (b)

Other procurement specific documentation requirements are:

The audited Financial “Standalone” Statements (Balance Sheet along with Notes, Profit & Loss Accounts and Cash Flow Statement) audited by Chartered Accountant for the last three (03) years shall be submitted by the Bidder. The audited Financial Report issued for year 2024 and onwards should have UDIN as per ICAP letter circular No. 12/2024 dated 12.09.2024

All documents must be clear, legibly scanned PDFs

ITB Number12.4

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

ITB Number12.6

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 **180 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, Call at Deposit, Demand Draft**

D. Submission of Bids

ITB Number19.1

The deadline for Bid submission is:**Wednesday, September 30, 2026 12:00 PM**

Address for submission of Original Bid Security:**O/o the Director (Field Operation) Lahore-I 220KV Grid Station, NGC, New Kot Lakhpat, Lahore City, Lahore (District), Lahore Division (Division), Punjab (Province).**

ITB Number21.1

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

Day : **Wednesday**

Date: **September 30, 2026**

Time : **12:30 PM**

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:**No**

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:**Pay Order,Call at Deposit,Demand Draft**



Eligibility Criteria

Bidder's Type	Required Registration
Individual / Individual Consultant	NADRA CITIZENSHIP (CNIC/NICOP)
Sole Proprietorship	FBR (NTN)
Partnership Firm	FBR (GSTN)
Company (Private Limited)	PEC
Company (Public Limited)	
Company (Holding Company)	
Company (Limited by Guarantee)	
State Owned Enterprise (Private Limited)	
State Owned Enterprise (Public Limited)	

Evaluation Criteria

Least Cost Based Selection (LCBS)

Jobs/Lots

Lot Title : Replacement of OPGW Span on 220kV Sheikhpura-Ravi Transmission Line

Bid Security : 75000 PKR

Job	Delivery Schedule	Quantity
Transportation & installation of OPGW including installation of drop down lengths for joint boxes at the towers along with Allied hardware material including hardware assemblies, joint boxes accessories, dampers etc complete in all respect as per WAP	Address: Site & O/o the Director (Field Operation) Lahore-I 220KV Grid Station, NGC, New Kot Lakhpat, Lahore City, Lahore (District), Lahore Division (Division), Punjab (Province). Schedule: 17 Days Quantity: 01/job	1/job
Installation of New Joint Boxes OPGW to OPGW (A-Type) along-with testing of all 24 No. Fibers.	Address: Site & O/o the Director (Field Operation) Lahore-I 220KV Grid Station, NGC, New Kot Lakhpat, Lahore City, Lahore (District), Lahore Division (Division), Punjab (Province). Schedule: 17 Days Quantity: 02/job	2/job

Job	Delivery Schedule	Quantity
Dismantling of existing OPGW from 220kV CCT along with allied hardware including Shifting and proper stacking of material at designated NGC warehouse.	Address: Site & O/o the Director (Field Operation) Lahore-I 220KV Grid Station, NGC, New Kot Lakhpat, Lahore City, Lahore (District), Lahore Division (Division), Punjab (Province). Schedule: 17 Days Quantity: 01/job	1/job
Testing and Commissioning of OPGW (end to end) as per technical specifications	Address: Site & O/o the Director (Field Operation) Lahore-I 220KV Grid Station, NGC, New Kot Lakhpat, Lahore City, Lahore (District), Lahore Division (Division), Punjab (Province). Schedule: 17 Days Quantity: 01/job	1/job

Work Specifications and Market Rates

Lot Title: Replacement of OPGW Span on 220kV Sheikhpura-Ravi Transmission Line

Specifications / Requirements:

Sr. No	Ref. No.	Description	Unit	Qty	Rate		Amount
1	A-1	Transportation & installation of OPGW including installation of drop down lengths for joint boxes at the towers along with Allied hardware material including hardware assemblies, joint boxes accessories, dampers etc complete in all respect as per WAPDA/NGC specification & approved drawings from tower no. 14A to tower no. 14B on 220kV Sheikhpura - Ravi Transmission Line (Total 01 No. span)	Job	1	-	-	650000
2	A-2	Installation of New Joint Boxes OPGW to OPGW (A-Type) along-with testing of all 24 No. Fibers.	Job	2	-	-	400000
3	B-1	Dismantling of existing OPGW from 220kV CCT along with allied hardware including Shifting and proper stacking of material at designated NGC warehouse.	Job	1	-	-	300000
4	C-1	Testing and Commissioning of OPGW (end to end) as per technical specifications	Job	1	-	-	150000

Sr. No	Ref. No.	Description	Unit	Qty	Rate		Amount
						GRAND TOTAL:	Rs1,500,000.00



Scope of Work

Description	Unit	Qty	Rate	Amount
Transportation & installation of OPGW including installation of drop down lengths for joint boxes at the towers along with Allied hardware material including hardware assemblies, joint boxes accessories, dampers etc complete in all respect as per WAPDA/NGC specification & approved drawings from tower no. 14A to tower no. 14B on 220kV Sheikhupura - Ravi Transmission Line (Total 01 No. span)	Job	1	-	-
Installation of New Joint Boxes OPGW to OPGW (A-Type) along-with testing of all 24 No. Fibers.	Job	2	-	-
Dismantling of existing OPGW from 220kV CCT along with allied hardware including Shifting and proper stacking of material at designated NGC warehouse.	Job	1	-	-
Testing and Commissioning of OPGW (end to end) as per technical specifications	Job	1	-	-

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

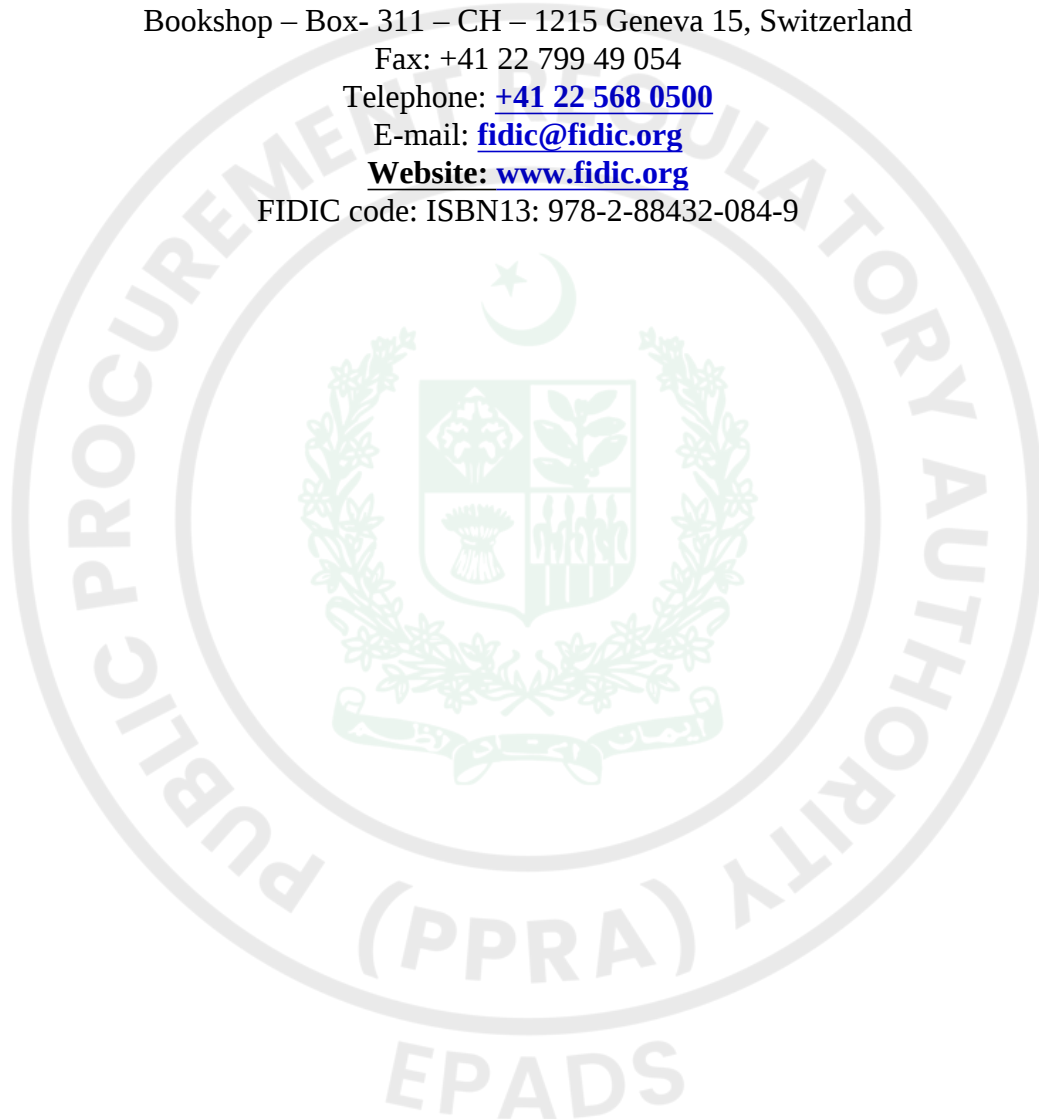
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Telephone: [+41 22 568 0500](tel:+41225680500)

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): **365 Days**

Sub-Clause 1.1.31

Employer's name & address: **National Grid Company of Pakistan, O/o the Director (Field Operation) Lahore-I (General Manager Asset Management National Grid Company (NGC-North)), Director O/o the Director (Field Operation) Lahore-I 220KV Grid Station, NGC, New Kot Lakhpat, Lahore City, Lahore (District), Lahore Division (Division), Punjab (Province).**

Sub-Clause 1.1.35

Engineer's name & address: **Hafiz Muhammad Salman Saeed**

220KV Grid Station NGC NKLP, Chungi Amr Sidhu, Lahore

Sub-Clause 1.1.84

Time for Completion: **17 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: **O/o the Director (Field Operation) Lahore-I 220KV Grid Station, NGC, New Kot Lakhpat, Lahore City, Lahore (District), Lahore Division (Division), Punjab (Province).**

Address of Engineer for Communications:

220KV Grid Station NGC NKLP, Chungi Amr Sidhu, Lahore

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: **20** days after Commencement Date

Sub-Clause 2.4

Employer's financial arrangements:

Through Allocated 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: **Pay Order, Call at Deposit, Demand Draft**

Sub-Clause 4.2.1

List of Insurance Companies:

NA just Bank Guarantee as mentioned above

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: **1**

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 **Not Allowed**

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: **1**

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”**

Sub-Clause 14.5(c)(i)

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

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: **30 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: **1**

[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 Will be borne by Contractor as mentioned in BD

The Amount of Insurance Required for Damage to Property is Will be borne by Contractor as mentioned in BD 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 1

[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

As per Grievance Committee Members

- 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: **Lahore-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 includingBillof Quantities;
- (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) *[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 or of ratings 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
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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 heads namely; "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 (+)
1001 to no limit	AA

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.: **P116245**

To: **National Grid Company of Pakistan, O/o the Director (Field Operation) Lahore-I (General Manager Asset Management National Grid Company (NGC-North)), Director O/o the Director (Field Operation) Lahore-I 220KV Grid Station, NGC, New Kot Lakhpat, Lahore City, Lahore (District), Lahore Division (Division), Punjab (Province).**

We, the undersigned, declare that:

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

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

- (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 **National Grid Company of Pakistan, O/o the Director (Field Operation) Lahore-I (General Manager Asset Management National Grid Company (NGC-North)), Director O/o the Director (Field Operation) Lahore-I 220KV Grid Station, NGC, New Kot Lakhpat, Lahore City, Lahore (District), Lahore Division (Division), Punjab (Province).** (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., **Replacement of OPGW Span on 220kV Sheikhpura-Ravi Transmission Line (P116245)** 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 Replacement of OPGW Span on 220kV Sheikhpura-Ravi Transmission Line

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

Name and contact details of the Employer **National Grid Company of Pakistan, O/o the Director (Field Operation) Lahore-I (General Manager Asset Management National Grid Company (NGC-North)), Director**

O/o the Director (Field Operation) Lahore-I 220KV Grid Station, NGC, New Kot Lakhpat, Lahore City, Lahore (District), Lahore Division (Division), Punjab (Province).

+92-335-740-1612

salman.saeed@ntdc.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 **National Grid Company of Pakistan, O/o the Director (Field Operation) Lahore-I (General Manager Asset Management National Grid Company (NGC-North)), Director O/o the Director (Field Operation) Lahore-I 220KV Grid Station, NGC, New Kot Lakhpat, Lahore City, Lahore (District), Lahore Division (Division), Punjab (Province).** (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 **Replacement of OPGW Span on 220kV Sheikhpura-Ravi Transmission Line (P116245)**

_____ (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 Clause 11, 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

Tender book

Tender book includes all detailed Technical as well as Financial Requirements which may not have been included in the previous sections but mandatory for this project

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Tender book** (page number: 90)





Procurement Forms

Past Construction Experiences

Form QF-2: Construction Experience

Note: To be filled in accordance with criteria described in clause IB3.1 (b) Section-II of the bidding documents

(For a period of Last 10 Years)

Name of the Project:

Order Placed by (full address of Employer)	Order No. and date	Description of Works	Value of order	Date of completion as per contract	Date of actual completion	Remarks indicating reasons for late completion, if any	Has the project been running satisfactorily? (Attach a certificate from the Employer)

Signature and Seal of the Bidder.....

Place:

Date:

See Form Under Additional Forms and Documents: **Past Construction Experiences** (page number: 295)

Contractor's Key Personnel Representative and Their Schedules

The Bidder shall have the personnel for the key positions to be deployed for meeting the following requirements: (Information to be submitted in Appendix-G to Bid given in Section-III of the Bidding Documents)

Positions	Relevant Experience	Construction	No. of Personnel
Project Manager	08		01
Electrical Engineers	04		01
The above personnel shall be graduate engineers or equivalent.			

See Form Under Additional Forms and Documents: **Contractor's Key Personnel Representative and Their Schedules** (page number: 301)

Financial Resources

Form QF-7: Financial Resources

Specify proposed sources of financing, such as liquid assets, lines of credit, and other financial means, available to meet the total construction cash flow demands of the subject contract.

Financial Resources		
Sr. No.	Source of Financing	Amount
1.		
2.		
3.		
4.		

Signature and Seal of Bidder:

See Form Under Additional Forms and Documents: **Financial Resources** (page number: 305)

Past Experience and Completed Contracts

1. The bidder as a main contractor (as single entity or as JV partner*) must have substantially completed construction contract(s) comprising of detailed survey, sub-soil investigations, construction of tower conventional foundations, erection of towers, stringing, testing & commissioning of **500kV/220kV voltage bundled transmission lines of at least 02km strung by controlled tension method during last ten (10) years.** *If the Bidder has executed these contract(s) as a JV partner, he shall have carried out all the activities mentioned here before.
2. Such transmission lines must have been operating successfully for at least two (02) years prior to deadline for submission of bids.
3. In case the bid is submitted by a joint venture under this bidding process, lead partners and each JV partner shall independently meet the above experience criteria.
4. The Bidder shall submit with the Bid evidence in this regard including inter alia copies (with English translation) of the contract agreement(s), substantial completion certificate(s) and Defects Liability Certificate for the contract(s).
5. The bidder shall have his own twin bundle tension stringing equipment along with associated T&P and critical equipment duly supported with documentary evidence/catalogues/drawings for undertaking such like works in good working condition

See Form Under Additional Forms and Documents: **Past Experience and Completed Contracts** (page number: 306)

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

Form QF-9: Pending Litigation

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

Pending Litigation					
Year	Name of Other Party(s)	Matter of Dispute	Litigation where (Court/ arbitration)	Amount involved	Value of pending claim as a %age of net worth

Signature and Seal of the bidder:

See Form Under Additional Forms and Documents: **Historical Contract Non-Performance, and Pending Litigation and Litigation History** (page number: 307)

Current Contracts and Their Progress

Form QF-4: Current Contract Commitments

Bidders 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.

Sr. No.	Particulars of works executed	Contract No. & Date	Name of Contract placing Authority	Ordered Value (PKR)	Value of balance work (PKR)
1	2	3	4	5	6
2					
3					
4					
5					
6					
7					

Signature & Seal of the bidder:

See Form Under Additional Forms and Documents: **Current Contracts and Their Progress** (page number: 309)

Financial Capacity and Net Worth Evaluation Form

Form QF-5: Financial Data

Financial Data for Previous 3 Years			
Particular			
Total Assets			
Total Liabilities			
Net Worth			
Current Assets			
Current Liabilities			
Information from Income Statement			
Total Revenues			
Profits Before Taxes			
Profits After Taxes			
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 complete conditions mentioned in Form QF-5			

See Form Under Additional Forms and Documents: **Financial Capacity and Net Worth Evaluation Form** (page number: 310)

Average Annual Turnover

The Bidder's Income & Expenditure/Profit and Loss Accounts should show minimum average annual turnover for the last three years not less than **5 million PKR**. The Average Annual Turnover may include turnover of affiliates and subsidiaries to the extent of shareholding percentage of the Bidding company provided the turnover is accrued from similar business activity as the Bidding company. (Information to be submitted in prescribed Form QF-6 of Appendix-N to Bid given in Section-III of the Bidding Documents)

See Form Under Additional Forms and Documents: **Average Annual Turnover** (page number: 312)







Additional Forms and Documents

TENDER DOCUMENT NO. T-01-2026-27

REPLACEMENT OF OPGW SPAN ON 220kV SHEIKHUPURA-RAVI TRANSMISSION LINE

(Single Stage Single Envelope Procedure)

(National Competitive Bidding)



PREPARED BY:

**O/O DIRECTOR (FIELD OPERATIONS) NGC AREA LAHORE-1
220KV GRID STATION NGC NKLP LAHORE**

**NATIONAL GRID COMPANY (NGC) OF
PAKISTAN**

September, 2026

TABLE OF CONTENTS
FOR
CONTRACT NO. T-01-2026-27

**REPLACEMENT OF OPGW SPAN ON 220KV
SHEIKHUPURA-RAVI TRANSMISSION LINE**

Section No.	Description	Page No.
I	Invitation For Bids	IFB 1
II	Instructions To Bidders	ITB 1-14
III	Bid Data Sheet	BDS 1-24
IV	Form of Bid & Appendices To Bid	A 1-51
V	General Conditions of Contract	GCC-1
VI	Special Conditions of Contract	SCC 1-17
VII	Specifications - Special Provisions	SP 1-14
VIII	Specifications - Technical Provisions	TP 1-59
IX	Bill of Quantities	BQ 1-2
X	SOP for Blacklisting of Contractors	1-13



NATIONAL GRID COMPANY (NGC) OF PAKISTAN LTD

(Formerly NTDC)

DIRECTOR (FIELD OPERATIONS) NGCP NKLP, LAHORE-I

INVITATION FOR BID

1. National Grid Company (NGC) of Pakistan (formerly NTDC), “The Purchaser”, is responsible for development and control of power transmission system in the country, invites electronic bids on E-PADS Version-2 for execution of below mentioned works through “Single Stage Single Envelope Procedure” (SSSE) on National Competitive Bidding (NCB) basis from eligible firms registered with Income Tax and Sales Tax Departments and who are on Active Tax payers List of the Federal Board of Revenue (detailed terms & conditions, types and quantities mentioned in the bidding document).

Tender No.	NAME OF WORK
T-01-2026-27	Replacement of OPGW Span on 220kV Sheikhupura-Ravi Transmission Line

2. Bidding Documents, containing detailed terms and conditions, etc. can be accessed through E-PAK Acquisition and Disposal System (E-PADS) Version-2 at (<https://pa.epads.gov.pk>). Interested eligible bidders are requested to register themselves on E-PADS and submit their bid on E-PADS before the date & time of submission of Bids. Manual bids shall not be accepted, in any case.
3. This advertisement is also available on PPRA and NGC websites (www.ppra.org.pk & www.ntdc.com.pk). All eligible bidders need to prepare their bids according to the instructions given in Bidding Document and submit their bids electronically through E-PAK Acquisition and Disposal System (E-PADS) up to 30.09.2026 at 12:00 hrs. The bids will be opened on the same day at 12:30 hrs through E-PADS in the office of Director (Field Operations) North, NGC Area Lahore-1 at below mentioned address.
O/o Director (FO) NGC Lahore-1
220kV Grid Station NGC Lahore
Telephone: 0335-7401612
4. All Bids must be accompanied by a Bid Security equal to an amount mentioned in bidding document, in the form of CDR or Pay Order from a Bank in Pakistan. The Bid Security must be submitted in original to this office on or before the date and time of submission of bids on E-PADS.
5. The NGC reserves the right to reject all bids and to annul bidding process at any stage prior to contract award as defined in Clause 33(1) of Public Procurement Rules 2004.
6. The bidder should not be blacklisted from NGC, DISCO or any Government organization at the time of bidding.

Director (Field Operations)
North NGC, Area Lahore-I

SECTION II**INSTRUCTIONS TO BIDDERS****A. GENERAL****IB.1 Scope of Bid**

- 1.1 The Employer as defined in the Bidding Data hereinafter called “the Employer” wishes to receive bids for the construction and completion of works as described in these Bidding Documents, and summarized in the Bidding Data hereinafter referred to as the “Works”.
- 1.2 The successful bidder will be expected to complete the Works within the time specified in Appendix-A to Bid.

IB.2 Source of Funds

- 2.1 The Employer has applied for/received a loan/credit from the source (s) indicated in the Bidding Data in various currencies towards the cost of the project specified in the Bidding Data and it is intended that part of the proceeds of this loan/credit will be applied to eligible payments under the Contract for which these Bidding Documents are issued.

IB.3 Eligible Bidders

- 3.1 This Invitation for Bids is open to all bidders meeting the following requirements:
 - a. Duly licensed by the Pakistan Engineering Council (PEC) in the category relevant to the value of the Works.
 - b. Duly prequalified/enlisted with the Employer.
- 3.2 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, consortium, or association. In the case of a joint venture, consortium, or association, 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, consortium, or association 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, consortium, or association during the Bidding process, and in case of award of contract, during the execution of contract.
- 3.3 A Bidder may be ineligible if –
 - (a) he is declared bankrupt or, in the case of company or firm, insolvent;
 - (b) 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;

- (c) legal proceedings are instituted against such Bidder involving an order suspending payments and which may result, in accordance with the national laws, in a declaration of bankruptcy or in any other situation entailing the total or partial loss of the right to administer and dispose of the property;
- (d) the Bidder is convicted, by a final judgment, of any offence involving professional conduct;
- (e) the Bidder is blacklisted and hence debarred due to involvement in corrupt and fraudulent practices, or performance failure or due to breach of bid securing declaration.
- (f) The firm, supplier and contractor is blacklisted or debarred by a foreign country, international organization, or other foreign institutions for the period defined by them.

IB.4 One Bid per Bidder

- 4.1 (a) Each bidder shall upload only one bid on E-PADS in same bidding process either by himself, or as a partner in a joint venture. A bidder who uploads or participates in more than one bid (other than alternatives pursuant to Clause IB.16) will be disqualified.
- (b) No bidder can be a sub-contractor while submitting a Bid individually or as a member of a joint venture in the same Bidding process.

IB.5 Cost of Bidding

- 5.1 The bidders shall bear all costs associated with the preparation and submission of their bids and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

IB.6 Site Visit

- 6.1 The bidders are advised to visit and examine the Site of Works and its surroundings and obtain for themselves on their own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction and dismantling Works. All cost in this respect shall be at the bidder's own expense.
- 6.2 The bidders and any of their personnel or agents will be granted permission by the Employer to enter upon his premises and lands for the purpose of such inspection, but only upon the express condition that the bidders, their personnel and agents, will release and indemnify the Employer, his personnel and agents 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 such inspection.

B. BIDDING DOCUMENTS

IB.7 Contents of Bidding Documents

- 7.1 The Bidding Documents, in addition to invitation for bids, are those stated below and should be read in conjunction with any Addenda issued in accordance with Clause IB.9.
 - 1. Instructions to Bidders.
 - 2. Bidding Data.
 - 3. General Conditions of Contract, Part-I (GCC).

4. Particular Conditions of Contract, Part-II (PCC).
 5. Specifications – Special Provisions.
 6. Specifications - Technical Provisions.
 7. Form of Bid & Appendices to Bid.
 8. Bill of Quantities
 9. Form of Bid Security.
 10. Form of Contract Agreement.
 11. Forms of Performance Security and Mobilization Advance Guarantee/Bond.
 12. Drawings. (If applicable)
- 7.2 The bidders are expected to examine carefully the contents of all the above documents. Failure to comply with the requirements of bid submission will be at the Bidder's own risk. Pursuant to Clause IB.26, bids which are not substantially responsive to the requirements of the Bidding Documents will be rejected.
- 7.3 The Procuring Agency is not responsible for the completeness of the Bidding Documents and their addenda, if they were not obtained directly from the Procuring Agency or the signed pdf version downloaded from the website of the Procuring Agency/ E-PADS. However, Procuring Agency shall place both the pdf and same editable version to facilitate the bidder for filling the forms.
- 7.4 The Bidder is expected to examine all instructions, forms, terms and specifications 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.

IB.8 Clarification of Bidding Documents

- 8.1 Any prospective bidder requiring any clarification (s) in respect of the Bidding Documents may notify the Employer in writing at the Employer's address and through E-PADS indicated in the Invitation for Bids. The Procuring Agency will within three (3) working days after receiving the request for clarification, respond in writing or in electronic form to any request for clarification provided that such request is received not later than three (03) days prior to the deadline for the submission of Bids on E-PADS.

Copies of the Employer's response will be forwarded to all participants in bid, including a description of the enquiry but without identifying its source.

IB.9 Amendment of Bidding Documents

- 9.1 At any time prior to the deadline for submission of bids, the Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective bidder, modify the Bidding Documents on E-PADS by issuing addendum.
- 9.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub-Clause 7.1 hereof and shall be communicated in writing/ through E-PADS to all purchasers of the Bidding Documents. Prospective bidders shall acknowledge receipt of each addendum in writing to the Employer.
- 9.3 To afford prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may extend the deadline for submission of bids in accordance with Clause IB.20

C. PREPARATION OF BIDS

IB.10 Language of Bid

- 10.1 The bid and all correspondence and documents related to the bid exchanged by a bidder and the Employer shall be in the bid language stipulated in the Bidding Data and Particular Conditions of Contract. Supporting documents and printed literature furnished by the bidders may be in any other language provided the same are accompanied by an accurate translation of the relevant parts in the bid language, in which case, for purposes of evaluation of the bid, the translation in bid language shall prevail.

IB.11 Documents Accompanying the Bid

- 11.1 Each bidder shall:

- (a) submit a power of attorney authorizing the signatory of the bid to act for and on behalf of the bidder; (as per requirement of E-Pad)
- (b) update the information indicated and listed in the Bidding Data and previously submitted with the application for prequalification, and continue to meet the minimum criteria set out in the prequalification documents which as a minimum, would include the following:
 - (i) Evidence of access to financial resources along with average annual construction turnover;
 - (ii) Financial predictions for the current year and the two following years including the effect of known commitments;
 - (iii) Work commitments since prequalification;
 - (iv) Current litigation information; and
 - (v) Availability of critical equipment.

and
- (c) furnish a technical proposal (as per requirement of E-Pad) taking into account the various Appendices to Bid specially the following:

Appendix-E to Bid	Proposed Construction Schedule
Appendix-F to Bid	Method of Performing the Work
Appendix-G to Bid	List of Major Equipment
Appendix-M to Bid	Organization Chart for Supervisory Staff
And other pertinent information such as mobilization programme etc.	

- 11.2 Bids submitted by a joint venture of two (2) or more firms shall comply with the following requirements:

- (a) the bid and in case of a successful bid, the Form of Contract Agreement shall be signed so as to be legally binding on all partners;
- (b) one of the joint venture partners shall be nominated as being in charge; and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the joint venture partners;
- (c) the partner-in-charge shall always be duly authorized to deal with the Employer regarding all matters related with and/or incidental to the execution of Works as per the terms and Conditions of Contract and in this regard to incur any and all liabilities, receive instructions, give binding undertakings and receive payments on behalf of the joint venture;
- (d) all partners of the joint venture shall at all times and under all circumstances be liable jointly and severally for the execution of the Contract in accordance with

- the Contract terms and a statement to this effect shall be included in the authorization mentioned under Sub-Para(b) above as well as in the Form of Bid and in the Form of Contract Agreement (in case of a successful bid); and
- (e) a copy of the agreement entered into by the joint venture partners shall be submitted with the bid stating the conditions under which it will function, its period of duration, the persons authorized to represent and obligate it and which persons will be directly responsible for due performance of the Contract and can give valid receipts on behalf of the joint venture, the proportionate participation of the several firms forming the joint venture, and any other information necessary to permit a full appraisal of its functioning. No amendments / modifications whatsoever in the joint venture agreement shall be agreed to between the joint venture partners without prior written consent of the Employer.

- 11.3 Bidders shall also submit proposals of work methods and schedule, in sufficient detail to demonstrate the adequacy of the Bidders' proposals to meet the technical specifications and the completion time referred to in Sub-Clause 1.2 hereof.
- 11.4 The Bidder shall fill the Form of Bid furnished in the Bidding Documents. The Bid Form must be completed without any alterations to its format and no substitute shall be accepted.

IB.12 Bid Prices

- 12.1 Unless stated otherwise in the Bidding Documents, the Contract shall be for the whole of the Works as described in Sub-Clause 1.1 hereof, based on the unit rates and / or prices submitted by the bidder.
- 12.2 The bidders shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by a bidder will not be paid for by the Employer when executed and shall be deemed covered by rates and prices for other items in the Bill of Quantities.
- 12.3 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 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 a bidder.

Additional / reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed / deducted as per Sub-Clause 70.2 of the General Conditions of Contract Part-I.

- 12.4 The rates and prices quoted by the bidders are subject to adjustment during the performance of the Contract in accordance with the provisions of Clause 70 of the Conditions of Contract. The bidders shall furnish the prescribed information for the price adjustment formulae in Appendix-C to Bid, and shall submit with their bids such other supporting information as required under the said Clause.
- 12.5 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.

IB.13 Currencies of Bid and Payment

- 13.1 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 supplied from outside the Employer's country (referred to as the "Foreign Currency Requirements") shall indicate the same in Appendix-B to Bid. 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.
- 13.2 The rates of exchange to be used by the bidder for currency conversion shall be the TT&OD Selling Rates published or authorized by the State Bank of Pakistan prevailing on the date 28 days prior to the deadline for submission of bids.

For the purpose of payments, the exchange rates used in bid preparation shall apply for the duration of the Contract.

IB.14 Bid Validity

- 14.1 Bids shall remain valid for the period stipulated in the Bidding Data after the Date of Bid Opening specified in Clause IB.23.
- 14.2 In exceptional circumstances, prior to expiry of the original bid validity period, the Employer may request that the bidders extend the period of validity for a specified additional period which shall in no case be more than the original bid validity period. The request and the responses thereto shall be made in writing. A bidder may refuse the request without forfeiting his Bid Security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his Bid Security for the period of the extension, and in compliance with Clause IB.15 in all respects.

IB.15 Bid Security

- 15.1 Each bidder shall furnish, as part of his bid, a Bid Security in the amount stipulated in the Bidding Data in Pak Rupees or an equivalent amount in a freely convertible currency.
- 15.2 The Bid Security shall be, at the option of the bidder, in the form of Deposit at Call or a Bank Guarantee issued by a Scheduled Bank in Pakistan or from a foreign bank duly counter guaranteed by a Scheduled Bank in Pakistan in favour of the Employer valid for a period 28 days beyond the Bid Validity date.
- 15.3 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.
- 15.4 The bid securities of unsuccessful bidders will be returned as promptly as possible, but not later than 28 days after the expiration of the period of Bid Validity.
- 15.5 The Bid Security of the successful bidder will be returned when the bidder has furnished the required Performance Security and signed the Contract Agreement.

15.6 The Bid Security may be forfeited:

- (a) if the bidder withdraws his bid except as provided in Sub-Clause 22.1;
- (b) if the bidder does not accept the correction of his Bid Price pursuant to Sub-Clause 27.2 hereof; or
- (c) In the case of successful bidder, if he fails within the specified time limit to:
 - (i) furnish the required Performance Security; or
 - (ii) sign the Contract Agreement.

IB.16 Alternate Proposals by Bidder

- 16.1 Should any bidder consider that he can offer any advantages to the Employer by a modification to the designs, specifications or other conditions, he may, in addition to his bid to be submitted in strict compliance with the Bidding Documents, submit any Alternate Proposal(s) containing (a) relevant design calculations; (b) technical specifications; (c) proposed construction methodology; and (d) any other relevant details / conditions, provided always that the total sum entered on the Form of Bid shall be that which represents complete compliance with the Bidding Documents.
- 16.2 Alternate Proposal(s), if any, of the lowest evaluated responsive bidder only may be considered by the Employer as the basis for the award of Contract to such bidder.

IB.17 Pre-Bid Meeting (Not Applicable)

- 17.1 The Employer may, on his own motion or at the request of any prospective bidder(s), hold a pre-bid meeting to clarify issues and to answer any questions on matters related to the Bidding Documents. The date, time and venue of pre-bid meeting, if convened, is as stipulated in the Bidding Data. All prospective bidders or their authorized representatives shall be invited to attend such a pre-bid meeting.
- 17.2 The bidders are requested to submit questions, if any, in writing so as to reach the Employer not later than seven (7) days before the proposed pre-bid meeting.
- 17.3 Minutes of the pre-bid meeting, including the text of the questions raised and the replies given, will be transmitted without delay to all prospective bidders. Any modification of the Bidding Documents listed in Sub-Clause 7.1 hereof which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause IB.9 and not through the minutes of the pre-bid meeting.
- 17.4 Absence at the pre-bid meeting will not be a cause for disqualification of a bidder.

IB.18 Format and Signing of Bid

- 18.1 Bidders are particularly directed that the amount entered on the Form of Bid shall

be for performing the Contract strictly in accordance with the Bidding Documents.

- 18.2 All appendices to Bid are to be properly completed and signed.
- 18.3 No alteration is to be made in the Form of Bid nor in the Appendices thereto except in filling up the blanks as directed. If any such alterations be made or if these instructions be not fully complied with, the bid may be rejected.
- 18.4 Each bidder shall prepare by filling out the forms completely and without alterations, specified in the Bidding Data, of the documents comprising the bid as described in Clause IB.7 and upload the scanned version of duly filled, signed and stamped on each page of bid.
- 18.5 The bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the bidder pursuant to Sub- Clause 11.1(a) hereof. All pages of the bid shall be initialed and stamped by the person or persons signing the bid, authorized to sign on behalf of the Bidder bid before uploading on EPADS. The scanned form of "ORIGINAL" Signed Bid will be uploaded by each Bidder on EPADS.
- 18.6 The bid shall contain no alterations, omissions or additions, except to comply with instructions issued by the Employer, or as are necessary to correct errors made by the bidder, in which case such corrections shall be initialed by the person or persons signing the bid.
- 18.7 Bidders shall indicate in the space provided in the Form of Bid their full and proper addresses at which notices may be legally served on them and to which all correspondence in connection with their bids and the Contract is to be sent.
- 18.8 Bidders should retain a copy of the Bidding Documents as their file copy.

D. SUBMISSION OF BIDS

IB.19 Sealing and Marking of Bids

- 19.1 Bidder shall upload the bid on E-PADS as per the requirement of PPRA's E-PAD portal and bidding document requirements. The technical & financial bids must be submitted/ uploaded on E-PADS in respective section, before the closing date & time of bid submission.
- 19.2 In case of Single Stage Single Envelope Procedure, The Bid shall comprise two parts submitted simultaneously in one file on E-PADS, including both the Technical Proposal and the other Financial Proposal. Each Bidder shall submit his bid as under:
 - a) Bidder shall prepare his TECHNICAL PROPOSAL and FINANCIAL PROPOSAL collectively as one file which will be uploaded on E-PADS before closing date & time of bid submission.

IB.20 Deadline for Submission of Bids

- 20.1 (a) Bids must be submitted on E-PADS no later than the time and date stipulated in the Bidding Data.
- (b) Bids with charges payable will not be accepted, nor will arrangements be undertaken to collect the bids from any delivery point other than that specified above. Bidders shall bear all expenses incurred in the preparation and delivery of bids. No claims will be entertained for refund of such expenses.
- 20.2 The Employer may, at his discretion, extend the deadline for submission of bids by issuing an amendment in accordance with Clause IB.9, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

IB.21 Late Bids

- 21.1 (a) Any bid uploaded by the bidder after the deadline or in hard copy for submission of bids prescribed in Clause IB.20 will not be accepted at any cost.

IB.22 Modification, Substitution and Withdrawal of Bids

- 22.1 Any bidder may modify, substitute or withdraw his bid after bid submission provided that the modification, substitution or written notice of withdrawal is received by the Employer prior to the deadline for submission of bids. (As per Provisions of E-PADS)
- 22.2 The modification, substitution, or notice for withdrawal of any bid shall be prepared, sealed, marked and delivered in accordance with the provisions of Clause IB.19 with the outer and inner envelopes additionally marked “MODIFICATION”, “SUBSTITUTION” or “WITHDRAWAL” as appropriate. (As per Provisions of E-PADS)
- 22.3 No bid may be modified by a bidder after the deadline for submission of bids except in accordance with Sub-Clauses 22.1 and 27.2. (As per Provisions of E-PADS)
- 22.4 Withdrawal of a bid during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in the Form of Bid may result in forfeiture of the Bid Security in pursuance to Clause IB.15. (As per Provisions of E-PADS)

E. BID OPENING AND EVALUATION

IB.23 Bid Opening

- 23.1 The Employer will open the bids through E-PADS only, including withdrawals, substitution and modifications made pursuant to Clause IB.22, in the presence of bidders’ representatives who choose to attend, at the time, date and location stipulated in the Bidding Data. The bidders’ representatives who are present shall sign a register evidencing their attendance.

- 23.2 Envelopes marked “MODIFICATION”, “SUBSTITUTION” or “WITHDRAWAL” shall be opened and read out first (as per provisions of E-PADS). Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause IB.22 shall not be opened.
- 23.3 The bidder’s name, total Bid Price and price of any Alternate Proposal(s), any discounts, bid modifications, substitution and withdrawals, the presence or absence of Bid Security, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening of bids.
- 23.4 Employer shall prepare minutes of the bid opening, including the information disclosed to those present in accordance with the Sub-Clause 23.3.
- 23.5 In case of Single Stage Single Envelope Procedure, the Procuring Agency will open both, the Technical Proposals & Financial Proposals on E-PADS simultaneously in public at the address, date and time specified in the BDS in the presence of Bidders’ designated representatives who choose to attend and other parties with a legitimate interest in the Bid proceedings.
- 23.6 The Technical & Financial Proposals on E-PADS shall be opened at same time, and the following read out and recorded: (a) the name of the Bidder; (b) the presence of a Bid Security, if required; and (c) Any other details as the Procuring Agency may consider appropriate.
- 23.7 Bidders are advised to send in a representative with the knowledge of the content of the Bid who shall verify the information read out from the submitted documents. Failure to send a representative or to point out any un-read information by the sent Bidder’s representative shall indemnify the Procuring Agency against any claim or failure to read out the correct information contained in the Bidder’s Bid.
- 23.8 The Procuring Agency shall prepare minutes of the Bid opening. The record of the Bid opening shall include, as a minimum: the name of the Bidder, the Bid price if applicable, including any discounts and alternative offers and the presence or absence of a Bid Security or Bid Securing Declaration.
- 23.9 In case of Single Stage Single Envelop Bidding Procedure, evaluation of technical and financial proposals will be carried out simultaneously and work will be awarded after approval from competent authority.

IB.24 Process to be Confidential

- 24.1 Information relating to the examination, clarification, evaluation and comparison of bid and recommendations for the award of a contract shall not be disclosed to bidders or any other person not officially concerned with such process before the announcement of bid evaluation report which shall be done at least ten (10) days prior to issue of Letter of Acceptance. The announcement to all Bidders will include table(s) comprising read out prices, discounted prices, price adjustments made, final evaluated prices and recommendations against all the bids evaluated. Any effort by a bidder to influence the Employer’s processing of bids or award decisions may result in the rejection of such bidder’s bid. Whereas any bidder feeling aggrieved may lodge a written complaint not later than seven (07) days after the announcement of the bid evaluation report; however mere fact of lodging a complaint shall not warrant suspension of the procurement process.

IB.25 Clarification of Bids

- 25.1 To assist in the examination, evaluation and comparison of bids, the Employer may, at his discretion, ask any bidder for clarification of his bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids in accordance with Clause IB.28.

IB.26 Examination of Bids and Determination of Responsiveness

- 26.1 Prior to the detailed evaluation of bids, the Employer will determine whether each bid is substantially responsive to the requirements of the Bidding Documents.
- 26.2 A substantially responsive bid is one which (i) meets the eligibility criteria; (ii) has been properly signed; (iii) is accompanied by the required Bid Security; and (iv) conforms to all the terms, conditions and specifications of the Bidding Documents, without material deviation or reservation. A material deviation or reservation is one (i) which affect in any substantial way the scope, quality or performance of the Works; (ii) which limits in any substantial way, inconsistent with the Bidding Documents, the Employer's rights or the bidder's obligations under the Contract; or (iii) adoption/rectification whereof would affect unfairly the competitive position of other bidders presenting substantially responsive bids.
- 26.3 If a bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

IB.27 Correction of Errors

- 27.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:
- (a) where there is a discrepancy between the amounts in figures and in words, the amount in words will govern; and
 - (b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern, unless in the opinion of the Employer there is an obviously gross misplacement of the decimal point in the unit rate, in which case the line item total as quoted will govern and the unit rate will be corrected.
 - (c) 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.
- 27.2 The amount stated in the Form of Bid will be adjusted by the 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 Bid Price, his Bid will be rejected, and the Bid Security shall be forfeited in accordance with Sub- Clause 15.6(b) hereof.

IB.28 Evaluation and Comparison of Bids

- 28.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause IB.26.
- 28.2 In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:
- (a) making any correction for errors pursuant to Clause IB.27;
 - (b) excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities, but including competitively priced Daywork; and
 - (c) making an appropriate adjustment for any other acceptable variation or deviation.
- 28.3 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.
- 28.4 If the Bid of the successful bidder is seriously unbalanced in relation to the Employer's estimate of the cost of work to be performed under the Contract, 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, the Employer may require that the amount of the Performance Security set forth in Clause IB.32 be increased at the expense of the successful bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful bidder under the Contract.
- 28.5 In evaluating the Technical Proposal of each Bid, the Procuring Agency shall use the criteria and methodologies listed in the BDS and in terms of Statement of Requirements and Technical Specifications. No other evaluation criteria or methodologies shall be permitted.

F. AWARD OF CONTRACT**IB.29 Award**

- 29.1 Subject to Clauses IB.30 and IB.34, the Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive to the Bidding Documents and who has offered the lowest evaluated Bid Price, provided that such bidder has been determined to be eligible in accordance with the provisions of Clause IB.3 and qualify pursuant to Sub-Clause IB 29.2.
- 29.2 The Employer, at any stage of the bid evaluation, having credible reasons for or *prima facie* evidence of any defect in supplier's or contractor's capacities, may require the suppliers or contractors to provide information concerning their professional, technical, financial, legal or managerial competence whether already pre-qualified or not:

Provided that such qualification shall only be laid down after recording reasons therefor in writing. They shall form part of the records of that bid evaluation report.

IB.30 Employer's Right to Accept any Bid and to Reject any or all Bids

- 30.1 Notwithstanding Clause IB.29, the Employer reserves the right to accept or reject any Bid, and to annul the bidding process and reject all bids, at any time prior to award of Contract, without thereby incurring any liability to the affected bidders or any obligation except that the grounds for rejection of all bids shall upon request be communicated to any bidder who submitted a bid, without justification of grounds. Rejection of all bids shall be notified to all bidders promptly.
- 30.2 Notice of the rejection of all Bids shall be given promptly to all Bidders that have submitted Bids.

IB.31 Notification of Award

- 31.1 Prior to expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder in writing ("Letter of Acceptance") that his Bid has been accepted. This letter shall name the sum which the Employer will pay the Contractor in consideration of the execution and completion of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Conditions of Contract called the "Contract Price").
- 31.2 No Negotiation with the bidder having evaluated as lowest responsive or any other bidder shall be permitted, however, Employer may have clarification meetings to get clarify any item in the bid evaluation report.
- 31.3 The notification of award and its acceptance by the bidder will constitute the formation of the Contract, binding the Employer and the bidder till signing of the formal Contract Agreement.
- 31.4 Upon furnishing by the successful bidder of a Performance Security, the Employer will promptly notify the other bidders that their Bids have been unsuccessful and return their bid securities.
- 31.5 Where no complaints have been lodged, the Bidder whose Bid has been accepted will be notified of the award by the Procuring Agency prior to expiration of the Bid Validity period in writing or electronic forms that provide record of the content of communication. The Letter of Acceptance will state the sum that the Procuring Agency will pay the successful Bidder in consideration for the execution of the scope of works as prescribed by the Contract.

IB.32 Performance Security

- 32.1 The successful bidder shall furnish to the Employer a Performance Security in the form and the amount stipulated in the Bidding Data and the Conditions of Contract within a period of 14 days after the receipt of Letter of Acceptance.
- 32.2 Failure of the successful bidder to comply with the requirements of Sub-Clause IB.32.1 or Clauses IB.33 or IB.35 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.
- 32.3 If the Performance Security (or 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:

- a) A bank guarantee,
- b) an irrevocable letter of credit issued by a reputable bank, or in the form provided in the Bidding Documents or another form acceptable to the Procuring Agency; or
- c) A cash deposit receipt issued by any reputable scheduled bank of Pakistan.
- d) Performance Guarantee in the form of Insurance Guarantee issued by an Insurance firm having AA rating

The cost of complying with the requirements of this Sub-Clause shall be borne by the Supplier.

IB.33 Signing of Contract Agreement

- 33.1 Within 14 days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the Employer will send the successful bidder the Contract Agreement in the form provided in the Bidding Documents, incorporating all agreements between the parties.
- 33.2 The formal Agreement between the Employer and the successful bidder shall be executed within 14 days of the receipt of the Contract Agreement by the successful bidder from the Employer.

IB.34 General Performance of the Bidders

The Employer reserves the right to obtain information regarding performance of the bidders on their previously awarded contracts/works. The Employer may in case of consistent poor performance of any Bidder as reported by the employers of the previously awarded contracts, inter alia, reject his bid and/or refer the case to the Pakistan Engineering Council (PEC). Upon such reference, PEC in accordance with its rules, procedures and relevant laws of the land take such action as may be deemed appropriate under the circumstances of the case including black listing of such Bidder and debarring him from participation in future bidding for similar works.

IB.35 Integrity Pact

The Bidder shall sign and stamp the Integrity Pact provided at Appendix-O to Bid in the Bidding Documents for all Federal Government procurement contracts exceeding Rupees ten million. Failure to provide such Integrity Pact shall make the bidder non-responsive.

IB.36 Instructions not Part of Contract

Bids shall be prepared and submitted in accordance with these Instructions which are provided to assist bidders in preparing their bids, and do not constitute part of the Bid or the Contract Documents.

BID DATA SHEET

The following specific data for the Works to be bided shall complement, amend, or supplement the provisions in the Instructions to Bidders. Wherever there is a conflict, the provisions herein shall prevail over those in the Instructions to Bidders.

IB 1.1	Name and address of the Employer: Director (Field Operations) North NGC Area Lahore-1 220kV Grid Station, New Kotlakhpat Lahore Telephone No. 0335-7401612 E-mail address: tech.amnlhr@ntdc.com.pk
IB 1.1	The bidding is open to National Competitive Bidding (NCB).
IB 1.1	The name of the NCB is: <u>Replacement of OPGW Span on 220kV Sheikhpura-Ravi Transmission Line</u> The identification number of the NCB is: T-01-2026-27
IB 2.1	Source of Funding: NGC's own resources
IB 3.1 (a)	The existing sub clause 3.1(a) is deleted and replaced with following: The Invitation for Bids is open to all bidders in their sole capacity or as joint venture meeting the following requirements: i) The Bidder shall be duly licensed by the Pakistan Engineering Council (PEC) minimum in the category C-5 with EE-05 or had applied for renewal of license before submission of its bid. In case of Joint Venture, all the partners shall be duly licensed by PEC and the sum total of the limit of construction cost permitted by the categories of the individual licensees shall not be less than limit of construction cost permitted by the category required here above. ii) Only those Firms/Companies/Contractors will be eligible to bid who are Active Taxpayers List (ATL) for both Income Tax & Sales Tax and Provincial revenue authorities/boards as the case may be. iii) Foreign Firms/Companies/ Contractors, if applicable in this tender, if required as per law of the country will get them registered from relevant tax authorities after award of contract. iv) All payments (including advance) will be subject to withholding taxes as per Income Tax Ordinates, 2001/international Tax Treaty & Sales Tax Act. 1990, further payments shall made only to those entities appearing in Active Tax payer List (ATL) for both Income Tax & Sales Tax.

	v) Performance Guarantee will be exclusive of indirect Taxes The Bidder shall not be blacklisted by NGC/WAPDA/DISCOs/any Government/Public department/Donor Agencies at the time of submission of bids. The Bidder should provide details of previous black listing, if any. An affidavit is to be provided by the Bidder that the Bidder is not black listed by NGC/WAPDA/DISCOs/any Government/Public department/Donor Agencies at the time of submission of bids. Further, the bidder shall submit an undertaking along with his bid that he has read and accepts the provisions of NGC Policy for Blacklisting of Contractors (copy of policy attached with the bidding documents). Non-submission of this undertaking may result in the rejection of the bid. The undertaking will subsequently become part of the Contract Agreement as well.
IB 3.1(b)	Delete IB 3.1(b) and replace it with the following. Qualification of the Bidder To be qualified for award of a contract, the Bidder shall meet the qualification criteria delineated herein below: 1. <u>Construction Experience:</u> i) The bidder as a main contractor (as single entity or as JV partner*) must have substantially completed construction contract(s) comprising of detailed survey, sub-soil investigations, construction of tower conventional foundations, erection of towers, stringing, testing & commissioning of 500kV/220kV voltage bundled transmission lines of at least 02km strung by controlled tension method during last ten (10) years. *If the Bidder has executed these contract(s) as a JV partner, he shall have carried out all the activities mentioned here before. ii) Such transmission lines must have been operating successfully for at least two (02) years prior to deadline for submission of bids. iii) In case the bid is submitted by a joint venture under this bidding process, lead partners and each JV partner shall independently meet the above experience criteria. iv) The Bidder shall submit with the Bid evidence in this regard including inter alia copies (with English translation) of the contract agreement(s), substantial completion certificate(s) and Defects Liability Certificate for the contract(s). v) The bidder shall have his own twin bundle tension stringing equipment along with associated T&P and critical equipment duly supported with

documentary evidence/catalogues/drawings for undertaking such like works in good working condition. Alternatively, if not so, the bidder will identify the confirmed source of the said machinery, T&P etc. along with documentary evidence/catalogues/drawings and shall provide necessary guarantee/surety that he will arrange the said equipment in good working condition through its own resources prior to start of stringing activity. The aforementioned documentary evidence shall be submitted with the bid.

2. Key Personnel:

The Bidder shall have the personnel for the key positions to be deployed for meeting the following requirements: (Information to be submitted in Appendix-G to Bid given in Section-III of the Bidding Documents)

Positions	Relevant Construction Experience	No. of Personnel
Project Manager	08	01
Electrical Engineers	04	01

The above personnel shall be graduate engineers or equivalent.

Bidder's Financial Capability:

The Employer will take into account the following criteria to verify the financial qualification of the Bidder.

- i. The audited Financial "Standalone" Statements (Balance Sheet along with Notes, Profit & Loss Accounts and Cash Flow Statement) audited by Chartered Accountant for the last three (03) years shall be submitted by the Bidder. The audited Financial Report issued for year 2024 and onwards should have UDIN as per ICAP letter circular No. 12/2024 dated 12.09.2024. The Bidder's Financial Statements for the last three years of the audited accounts should show that it has positive "NET WORTH" calculated as a difference between total assets and total liabilities (Information to be submitted in prescribed Form QF-5 of Appendix-N to Bid given in Section-III of the Bidding Documents). In case of JV, each JV partner shall meet the aforementioned criteria.

The Bidder's Income & Expenditure/Profit and Loss Accounts should show minimum average annual turnover for the last three years not less than **5 million PKR**. The Average Annual Turnover may include turnover of affiliates and subsidiaries to the extent of shareholding percentage of the Bidding company provided the turnover is accrued from similar business activity as the Bidding company. (Information to be submitted in prescribed Form QF-6 of Appendix-N to Bid given in

Section-III of the Bidding Documents).

In case of JV, all the JV partners shall combinedly meet the requisite criteria with the lead partner and other partner(s) meeting not less than 40% and 25% respectively of the said criteria.

- ii. The Bidder must demonstrate access to, or availability of, financial resources such as liquid assets, lines of credit, and other financial means to meet the total cash flow demands of this contract which is being considered equal to **2.5 Million PKR plus 25% of the Bidder's commitments for running contracts**. (Information to be submitted in prescribed Form QF-7 of Appendix-P to Bid given in Section-III of the Bidding Documents).

In case of JV, all the JV partners shall combinedly meet the requisite criteria with the lead partner and other partner(s) meeting not less than 40% and 25% respectively of the said criteria.

The Bidder shall provide his current work commitments in form QF-4 of Appendix-P to Bid given in Section-III of the Bidding Documents.

The bidder shall provide bank certificate for his lines of credit on the prescribed Form QF-8 of Appendix-P to Bid given in Section-III of the Bidding Documents.

4. Bidder's Litigation History

Bidders are required to submit details of all litigation, arbitration and other claims whether pending, threatened or resolved in the last five years. The Employer may disqualify bidder in the event that the total amount of pending or threatened litigation, arbitration or other claims represents fifty percent (50%) of the Bidder's net worth. Details in this regard should be submitted in the prescribed Form QF-9 given in Appendix-P of Section-III of Bidding Document.

Construction Experience and Financial Capability of sub-contractors, subsidiaries or parent/sister/affiliate companies shall not be considered for qualification of the Bidder.

The Qualification of the Bidders will be based on meeting the pass/fail criteria as demonstrated by the Bidders' responses in the respective Appendices.

The above stated requirements are the minimum and the Employer reserves the right to request for any additional information. The Employer also reserves the right to reject the proposal of any Bidder, if in the opinion of the Employer the qualification details are incomplete, ambiguous or the Bidder is found not qualified to satisfactorily perform the Contract.

The above stated Appendices should be completed as per prescribed format and submitted along with required attachments. The missing or incomplete

	information/documents may render the bid substantially non-responsive. In this regard, the Employer does not have an obligation to request any document/certificates.
IB 3.2	The following sub clause is added after 3.1: A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in this bidding process if, including but not limited to: (i) they have controlling shareholders in common; or (ii) they receive or have received any direct or indirect subsidy from any of them; or (iii) they have the same legal representative for purposes of this bid; or (iv) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to material information about or improperly influence the bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or (v) A Bidder or any affiliated entity, participated as a consultant in the preparation of the design or technical specifications of the plant and services that are the subject of the bid.
IB 6.1	The Bidder shall inspect the site, examine and obtain all information required and satisfy himself regarding matters and things such as access to site, communication, transport, right of way, the type and number of equipment and facilities required for the satisfactory completion of work, the quantity of various sections of the work, the availability of local labor, availability and rates of materials, local working conditions, uncertainties of weather, obstructions and hindrances that may arise etc., which may affect the work or cost thereof, before submission of his bid. Ignorance of site conditions shall not be accepted by the Employer as basis for any claim for compensation. The submission of a bid by the bidder will be construed as evidence that such an examination was made and any later claims/disputes in regard to rates quoted shall not be entertained or considered by the Employer.
IB 7.2	The Bidders should ensure that they have received the Bidding Documents including Addenda (if any) complete in all respects through E-PADS. The Employer accepts no responsibility for any Bidder lacking a complete set of Bidding Documents including Addenda (if any).
IB 8.1	The Sub-Clause 8.1 is amended to the following extent: No request for clarification will be entertained which will be received later than 14 days prior to the date fixed for submission of Bids through E-PADS. The Purchaser's response will be made not later than 7 days prior to the date fixed for submission of Bids through E-PADS. Further, the mere request for clarification from the bidders shall not be a ground for seeking extension in the deadline for submission of Bids.

IB 10.1	The bid with all accompanying documents and all communications in relation to or concerning the bidding Process shall be in English language and strictly on the forms provided in the bidding Documents. In case any of these Documents is in another language, it must be accompanied by an accurate translation of the relevant passages in English, in which case, for all purposes of interpretation of the bid, the translation in English shall prevail. Any portions of Bids that are not in English may not be evaluated. Failure to comply with this may disqualify a bid.
IB 11.1	Documents Comprising the Bid Delete the text of this Sub-Clause and substitute with the following: The Bid submitted on E-PADS by the Bidder shall be prepared in two (02) separate parts and should be uploaded on E-PADS as one file, including both technical and financial proposals comprising the following documents in the respective envelope: I. Technical Bid a) Duly filled-in Form of Technical Bid with following Appendices to Bid: i) Appendix-A to Bid Special Stipulations ii) Appendix-E to Bid Proposed Work Schedule iii) Appendix-F to Bid Method of Performing the Work iv) Appendix-G to Bid Proposed Personnel v) Appendix-H to Bid List of Major Equipment-Related Items vi) Appendix-I to Bid Construction Camp and Housing Facilities vii) Appendix-J to Bid Organizational Chart of the Supervisory Staff and Labor viii) Appendix-K to Bid List of Sub-Contractors ix) Appendix-L to Bid Source of Materials x) Appendix-N to Bid Deviations xi) Appendix-O to Bid Integrity Pact (N/A) xii) Appendix-P to Bid Bidder's Qualification Forms b) Bid security of amounting to 5% of Quoted Bid (this must be submitted in original, in favor of "Executive Engineer Telecommunication" in the office of Director (Field Operations) North NGC Area Lahore-1 before the closing date and time of bid submission on E-PADS.) c) Undertaking by the Bidder in respect of submission of required Bid Security as per Appendix-Q to Bid; d) Written Power of Attorney, duly notarized, authorizing the signatory of the bid to act for and on behalf of the Bidder; e) Copies of Original Documents defining the constitution or legal status, place of registration and principal place of business of the bidder and JV

	partners; f) An affidavit that the Bidder has not been blacklisted pursuant to Sub-Clause 3.1(iv); g) An Affidavit that the Bidder has read and accepts NGC's SOP for blacklisting of Contractors pursuant to Sub-Clause 3.1(iv); h) PEC license pursuant to Sub-Clause 3.1(i); and i) Any other document required to be submitted in accordance with these Bidding Documents. II. Price Bid a) Duly filled-in Form of Price Bid with following Appendices to Bid: xiii) Appendix-B to Bid Foreign Currency Requirements (Not Used) xiv) Appendix-D to Bid Bill of Quantities xv) Appendix-M to Bid Estimated Progress Payments b) Any other document required to be submitted in accordance with these Bidding Documents.
IB 11.2	Following is added at the end of Sub-Clause IB.11.2: “(f) The maximum J.V. partners shall not be more than three (03).”
IB 12.5	Add the following new Sub-Clause IB 12.5: The Bidder shall quote Provincial Sales Tax (PST) in a separate column given in Bill of Quantities (BOQ) of Section-III to Bid.
IB 12.6	Add the following new Sub-Clause IB 12.6: The cost of the material for this line/project would be 20 million PKR approx. for calculating insurance charges.
IB 13	Clause IB.13 is substituted with the following: “The unit rates and prices shall be quoted by the Bidder entirely in Pak Rupees. All payments under the contract shall be made in Pak Rupees only. Bidders expecting to incur expenditures in currency(ies) other than Pak Rupees shall manage foreign currency(ies) at their own arrangement. The exchange risk in this regard, if any, shall be deemed to be included in unit rates and prices quoted by the Bidder.”
IB 14.1	The period for Bid validity shall be minimum One Hundred and Eighty (180) days after the date of Bid opening through E-PADS.
IB 15.1	The amount of Bid Security shall not be less than 5% of Quoted Bid Price to be submitted in original before closing date and time of bid uploading.

IB 15.2	Sub-Clause IB.15.2 is substituted with the following: “The Bid Security shall be, at the option of the Bidder, in the form of Deposit at Call or a Guarantee issued by a Scheduled Bank in Pakistan or from a foreign bank duly counter guaranteed by a Scheduled Bank in Pakistan in favor of the Employer on the prescribed Form annexed to these Documents valid for a period 28 days beyond the Bid Validity date. The Bid Security of Joint Venture shall be in the name of Joint Venture submitting the Bid. For avoidance of doubt, a Bid Security issued by a foreign bank but not counter guaranteed by a Scheduled Bank in Pakistan shall not be acceptable and rejected as non-responsive.”
IB 15.6	The following is added at the end of Sub-Clause IB.15.6: “(d) If the Bidder is found involved in corrupt and fraudulent practices.”
IB 17.1	No Pre-bid meeting will be held.
IB 18.4	Sub-Clause 18.4 is substituted with the following: “Each Bidder shall prepare by filling out the forms completely and without alterations one original set of the Technical Bid and one original set of the Price Bid as described in IB. 11 and clearly mark each “ORIGINAL - TECHNICAL BID” and “ORIGINAL - PRICE BID”. In addition, the Bidder shall submit two (02) copies each of the Technical Bid and the Price Bid, clearly marked as “COPY NO... - TECHNICAL BID” and “COPY NO.... - PRICE BID”. In the event of any discrepancy between the original and the copies, the original shall prevail. (Not Applicable, as technical & financial bids will be uploaded by the bidder on E-PADS collectively as one file) The Bidders are also required to provide an electronic version (in USB Drive) of the technical bid and price bid in PDF format scanned from the Original bid and Price Schedules in MS Excel format. Electronic version of Technical and Price bids should be submitted separately in their respective envelopes. Electronic version of Price bid and price schedules should be placed in financial envelope which shall remain sealed until financial bid opening. Non-submission of the electronic version of the Bids shall not be a reason for rejection of Bid. (N/A)
IB.19.1	Sub-Clause 19.1 is substituted by the following: “The Technical Bid and Price Bid (comprising the relevant documents as stated under Sub-Clause IB.11) shall be prepared separately. The ORIGINAL and each COPY of Technical Bid shall be sealed in one envelope marked as such. Similarly, the ORIGINAL and each COPY of the Price Bid shall be sealed in another envelope and marked as such. Price Bid shall be sealed in a separate envelope. The outer envelope comprising both ‘Technical Bid’ and ‘Price Bid’ shall be addressed/identified as given in Sub-Clause 19.2 hereof.” (Not Applicable)

IB 19.2 (a)	Employer's address for the purpose of Bid submission: Director (Field Operations) North NGC Area Lahore-1 220kV Grid Station, New Kotlakhpat Lahore Telephone No. 0335-7401612 E-mail address: tech.amnlhr@ntdc.com.pk
IB 19.2 (b)	Name of the Project: <u>Replacement of OPGW Spans on 220kV Sheikhpura-Ravi Transmission Line</u> Identification No.: T-01-2026-27
IB 19.2 (c)	Para (c) of Sub-Clause 19.2 is substituted by the following: The outer envelopes and the inner envelopes containing the Technical Bid shall bear a warning not to open before the time and date for the opening of Technical Bids, in accordance with IB 23.1. The envelopes containing the Price Bid shall bear a warning not to open until advised by the Purchaser in accordance with IB 23.2. (Not Applicable)
IB 20.1 (a)	Deadline for Submission of bid on E-PADS: Date: 30.09.2026 Time: 12:00 HRS
IB 20.1 (c)	Bids shall be submitted through E-PADS only. Hard copy submission, if any, shall be optional. In the event of any discrepancy, the contents of the bid submitted on E-PADS shall be considered final and binding. Hard form of bids will not be accepted if the bid is not uploaded on E-PADS by bidder.
IB 20.1	Add the following new Para (e) at the end of Sub-Clause: “(e) Bids submitted through fax or email shall not be considered.”
IB.23 23.1	Bid Opening: Sub-Clause IB.23.1 is substituted by the following: The Employer shall open the Technical Bids through E-PADS only in public at the address, on the date, and time specified herein in the presence of Bidder’s designated representatives who choose to attend. The Bidders’ representatives who are present shall sign a register evidencing their attendance. Time: 12:00 HRS Date: 30.09.2026 Address: Office of Director (Field Operations) NGC North Area Lahore-1 (NKLP Grid)
23.2	The Price Bids will remain unopened on E-PADS section and will be held in custody of the Employer until the time of opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the Employer.

23.3	First, envelopes marked "WITHDRAWAL" shall be opened, read out, and recorded, and the envelope containing the corresponding bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out and recorded at bid opening. (As per provisions of E-PADS)
23.4	Next, outer envelopes marked "SUBSTITUTION" shall be opened. The inner envelopes containing the Substitution Technical Bid and/or Substitution Price Bid shall be exchanged for the corresponding envelopes being substituted, which are to be returned to the Bidder unopened. Only the Substitution Technical Bid, if any, shall be opened, read out, and recorded. Substitution Price Bid will remain unopened in accordance with IB 23.2. No envelope shall be substituted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out and recorded at bid opening. (As per provisions of E-PADS)
23.5	Next, outer envelopes marked "MODIFICATION" shall be opened. No Technical Bid and/or Price Bid shall be modified unless the corresponding modification notice contains a valid authorization to request the modification and is read out and recorded at the opening of Technical Bids. Only the Technical Bids, both Original as well as Modification are to be opened, read out, and recorded at the opening. Price Bids, both Original as well as Modification, will remain unopened in accordance with IB 23.2. (As per provisions of E-PADS)
23.6	All other sections of E-PADS holding the Technical Bids, except the Bids rejected pursuant to Sub-Clause IB.23.2, shall be opened one at a time, and the following read out and recorded (a) the name of the Bidder; (b) whether there is a modification or substitution; (c) the presence of an undertaking by the Bidder in respect of submission of required Bid Security; and (d) any other details as the Employer may consider appropriate. Only Technical Bids and alternative Technical Bids (if allowed under Sub-Clause IB.16 hereof) read out and recorded at bid opening shall be considered for evaluation. Unless otherwise specified in the BDS, the Form of Technical Bid is to be initialed by the nominated representatives of the Employer attending the bid opening. No Bid shall be rejected at the opening of Technical Bids except for late bids, in accordance with IB.21.1.
23.7	The Employer shall prepare a record of the opening of Technical Bids that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, modification, or alternative offer; and the presence or absence of an undertaking of Bid Security. A copy of the record shall be distributed to all Bidders.

23.8	At the end of the evaluation of the Technical Bids, the Employer will invite bidders who have submitted substantially responsive Technical Bids and who have been determined as being qualified for award to attend the opening of the Price Bids through E-PADS. The date, time, and location of the opening of Price Bids will be advised in writing by the Employer. Bidders shall be given reasonable notice of the opening of Price Bids through E-PADS.
23.9	The Employer will notify Bidders in writing who have been rejected on the grounds of being substantially non-responsive to the requirements of the Bidding Documents and return their Price Bids unopened.
23.10	The Employer shall conduct the opening of Price Bids of all Bidders through E-PADS, who submitted substantially responsive Technical Bids, in the presence of Bidders' representatives who choose to attend at the address, on the date, and time specified by the Employer. The Bidder's representatives who are present shall be requested to sign a register evidencing their attendance.
23.11	All sections of E-PADS containing Price Bids shall be opened one at a time and the following read out and recorded (a) the name of the Bidder; (b) whether there is a modification or substitution; (c) the Bid Prices, including any discounts, cross discounts and alternative offers; (d) the presence of Bid Security; and (e) any other details as the Employer may consider appropriate. Only Price Bids, discounts, cross discounts and alternative offers (if allowed under Sub-Clause IB.16 hereof) read out and recorded during the opening of Price Bids shall be considered for evaluation. Unless otherwise specified in the Bidding Data, the Form of Price Bid and Price Schedules are to be initialed by nominated representatives of the Employer attending the bid opening.
23.12	The Employer shall prepare a record of the opening of Price Bids that shall include, as a minimum: the name of the Bidder, the Bid Price (per lot if applicable), any discounts, cross discounts, any alternative offers and presence of Bid Security. A copy of the record shall be distributed to all Bidders present at the time of Bid opening.

IB 24.2	Add the following new Sub Clause after IB 24.1: 24.2 Bidders and their respective agents, suppliers, sub-contractors, representatives and anyone else on behalf of the bidder will not communicate or attempt to communicate directly or indirectly with the Employer, including any employees, directors, officers, agents or representatives of any of them during any part of the Competitive Bidding Process, except as expressly directed or permitted by the Employer. Bidders will also not engage in any form of political or other lobbying whatsoever with respect to their Bids, or otherwise attempt to influence the outcome of the Competitive Bidding Process. In the event of any such communications or lobbying, Employer may at any time reject any Bid by that Bidder without further consideration.
IB 25.1	Add the following at the end of Sub-Clause 25.1: The Employer may, at his discretion, ask any Bidder for confirmation/submission of missing information to clarify its Bid. However, the Employer does not have an obligation to request any additional information or clarification with respect to missing or deficient information in a Bid. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered.
IB 25.2	Add the following new Sub-Clause: If a Bidder does not provide clarifications of its Bid by the date and time set in the Employer's request for clarification, its Bid may be rejected.
IB 26.1	Sub-Clause 26.1 is substituted by the following: "The Employer will determine whether Bid is substantially responsive to the requirements of the Bidding Documents."

IB 26.2	Sub-Clause 26.2 is substituted by the following: “A substantially responsive Technical Bid is one which (i) meets the eligibility criteria; (ii) has been properly signed; (iii) meets the qualification criteria delineated at Sub-Clause IB.3A hereof; and (iv) conforms to all the terms, conditions and specifications of the Bidding Documents, without material deviation or reservation. A substantially responsive Price Bid is one which (i) has been properly signed; (ii) is accompanied by the required Bid Security submitted in original before the date & time of bid opening; and (iii) conforms to all the terms, conditions and specifications of the Bidding Documents, without material deviation or reservation. A material deviation or reservation is one (i) which affect in any substantial way the scope, quality or performance of the Works; (ii) which limits in any substantial way, inconsistent with the Bidding Documents, the Employer’s rights or the Bidder’s obligations under the Contract; or (iii) adoption/rectification whereof would affect unfairly the competitive position of other Bidders presenting substantially responsive bids. Any minor informality or non-conformity or irregularity in a Bid which does not constitute a material deviation may be waived by the Employer, provided such waiver does not prejudice or affect the relative ranking of any Bidder.”
IB 26.4	Following Sub-Clauses are added at the end of Sub-Clause 26.3: The Employer may reject any Bid as non-responsive if found materially incomplete, obscure, irregular or omits any material information required to be submitted by the Bidding Documents.
IB 27.3	Following Sub Clause is added after Sub Clause 27.2: If as a result of arithmetic correction, the Bid Price is increased substantially, the Bidder may be asked to increase the amount of its Bid Security accordingly by submitting its amendment within fifteen (15) days from issuing date of such notification. If the Bidder fails to provide the requisite amendment of the Bid Security within the stipulated period, his Bid will be held substantially non-responsive and will be rejected.
IB 28.1	Following Para is added at the end of the Sub-Clause 28.1: “The Works will be evaluated and compared on Lot basis (if applicable).”
IB 28.2	Following Para is added after the Para (c) of IB. 28.2: (d) applying cross discount in case of combination of Lots to arrive at least cost combination

IB 28.4	Following is added at the end of Sub-clause IB 28.4: “or the employer may require the successful Bidder to balance his bid.”
IB 28.5	Following new Sub Clause is added after IB 28.4: The Employer will evaluate the Bids, including all clarifications, additional information, modifications and negotiated changes, by applying the Eligibility and Qualification Criteria. Without limiting the particular criteria, the Employer may take into account the following in the Evaluation of Bids: i. Non-performance by a Bidder on previous contracts with Employer or others; ii. The quality of a Bidder’s performance on previous contracts with Employer or others; iii. Anticipated or ongoing claims with or in connection with a Bidder; iv. Any security of safety concerns which Employer may have in respect of a Bidder or its facilities, subcontractors or suppliers; v. The results of any interview with a Bidder or supplied references: or vi. Any knowledge of or experience with a Bidder or its principals, directions, officers and employees. The Employer may independently verify any information (including conducting credit, reference and other checks with respect to a Bidder) and consider such findings in its evaluation. Employer is not required to inform Bidders of how Bids were ranked in the evaluation process.
IB 28.6	Add the following new Sub-Clause IB 12.5: The Employer’s evaluation of a Bid will exclude and not take into Provincial sales Tax (PST).
IB 29.1	Add the words “for the respective Lot(s)” after the words “evaluated Bid Price” in 3rd line of this Sub-Clause. Add the following at the end of this Sub-Clause, if applicable: “Provided further in case a Bidder is determined to be the lowest evaluated substantially responsive in more than one Lot, the aggregate requirements delineated under Sub-Clause IB.3 hereof shall apply.” (if any)

IB 29.2	Following text is added at the end of Sub Clause 29.2 The Employer reserves the right to assess the capacity and capability of the Bidder, to successfully execute the scope of work covered under the Bidding Documents within stipulated completion period. This assessment may interalia include for (i) document verification; (ii) details of work executed, work in hand, anticipated in future; (iii) details of tools & plant; (iv) availability of requisite key personnel (v) financial resources; (vi) details of quality system in place; (vii) past experience and performance; (viii) customer feedback (ix) Bank's feedback etc.
IB 30.1	The Employer reserves the right to reject any bid on the following accounts, apart from those mentioned in the bidding documents: i. Bid is not uploaded by the due date and time specified. ii. Cost of the bidding documents is not remitted. iii. Bid is not accompanied by Bid security as specified in the document; Bid security is inadequate; Bid guarantee is not in the specified format. iv. Bid does not cover the complete scope of work. v. Bid does not contain all required particulars as per Schedules & Forms prescribed in the bidding documents. vi. Deviations, conditionality or reservations have been introduced to any part of the bidding documents which may not be acceptable to the Employer in its sole discretion. vii. Bidder does not respond promptly and thoroughly to the request for supplementary information required for the evaluation of his Bid. viii. Bid does not meet minimum acceptable standards of completeness, consistency and detail. ix. Bid received from any Black listed Firm / Contractor. If at any time it is found that a material misrepresentation of facts is made or uncovered; the information submitted by the bidder concerning his qualification was false and materially inaccurate or incomplete. If the bidder is the Lead Member of a consortium, then the entire consortium may be disqualified/ rejected.
IB 32.1	The Bidder shall furnish an unconditional Performance Security, equal to ten percent (10%) of the amount mentioned in Letter of Acceptance in the form prescribed in the conditions of Contract.
IB 33	Text of Clause IB.33 is deleted and substituted as follows: Within fourteen (14) days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the successful bidder shall depute its representative duly authorized for formal signing of the Contract Agreement, Form of which is provided in the Bidding Documents.

Annexure - 1 to Bidding Data Sheet

FORMAT FOR POWER OF ATTORNEY FOR SIGNING OF BID**POWER OF ATTORNEY**

Know all men by these presents, we _____ (name and address of the registered office of the Bidder) do hereby constitute, appoint and authorize Mr. / Ms. _____ R/o _____ (name and address of residence) who is presently employed with us and holding the position of _____, as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to the bid of the (please state the name and address of the bidder) for Bidding Document No. T-01-2026-27: REPLACEMENT OF OPGW SPANS ON 220KV SHEIKHUPURA-RAVI TRANSMISSION LINE (the "tender"), including signing and submission of all documents and providing information / responses to National Grid Company of Pakistan (NGC), representing us in all matters in connection with our bid for the said tender.

We hereby agree to ratify all acts, deeds and things done by our said attorney pursuant to this Power of Attorney and agree that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

(Signature)

(Name, Title, Email ID and Address)

Accepted

.....(Signature)

(Name, Title, Email ID and Address of the Attorney)

ACKNOWLEDGMENT

Before me, a Notary Public for and in the City of _____, this _____ of _____ 2020 personally came and appeared:

NAME

IDENTIFICATION DOCUMENT

Known to me to be the same person/s who executed the foregoing Special Power of Attorney in favor of _____, and acknowledged to me the same is/are his/her/their free and voluntary act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my notarial seal, the date and place above written.

NOTARY PUBLIC

Annexure - 2 to Bidding Data Sheet

A. FORM OF UNDERTAKING BY THE JOINT VENTURE PARTNERS**(On Company's Letter Head)**

THIS JOINT DEED OF UNDERTAKING executed on this..... day of..... Two Thousand andby..... a company incorporated under the laws of and having its Registered Office at..... (hereinafter called the "Party No.1" which expression shall include its successors, executors and permitted assigns) and M/s.....a company incorporated under the laws of..... and having its Registered Office at..... (hereinafter called the "Party No.2" which expression shall include its successors, executors and permitted assigns) and M/s..... a Company incorporated under the laws of..... and having its Registered Office at..... (hereinafter called the "Party No.3" which expression shall include its successors, executors and permitted assigns) for the purpose of making a bid and entering into a contract [hereinafter called the "Contract"_(in case of award)] against the Identification No.....for associated with of (hereinafter called the "**Employer**").

WHEREAS the Party No.1, Party No.2 and Party No.3 have entered into an Agreement dated..... AND WHEREAS the Employer invited bids for the design, manufacture, Supply of Equipment Materials stipulated in the bidding documents under associated with

AND WHEREAS Clause 2, Section-ITB and 'Qualification & Evaluation Requirement of the Bidder'(clause 13, 24 & 26 of ITB), and technical provisions forming part of the bidding documents, inter-alia, stipulates that an Undertaking of two or more qualified partners, meeting the requirements of 'Qualification & Evaluation Requirement of the Bidder', as applicable may bid, provided, the Joint Venture fulfills all other requirements under Clause 2, 13, 24 & 26 of ITB and in such a case, the Letter of Bids (Bid Form) shall be signed by the Partner –In Charge so as to legally bind all the Partners of the Joint Venture, who will be jointly and severally liable to perform the Contract and all obligations hereunder.

The above clause further states that this Undertaking shall be attached to the bid and the Contract performance guarantee will be as per the format enclosed with the bidding document without any restrictions or liability for either party.

AND WHEREAS the bid is being submitted to the Employer vide proposal No.....dated..... by Party No.1 based on this Undertaking between all the parties; under these presents and the bid in accordance with the requirements of Clause 2, 13, 24 & 26 (Section-ITB) has been signed by all the parties.

NOW THIS UNDERTAKING WITNESSETH AS UNDER:

In consideration of the above premises and agreements all the parties of this Deed of Undertaking do hereby declare and undertake:

1. In requirement of the award of the Contract by the Employer to the Joint Venture Partners, we, the Parties do hereby undertake that M/s..... the Party No.1, shall act as Lead Partner and further declare and confirm that we the parties to the Joint Venture shall jointly and severally be bound unto the Employer for the successful performance of the Contract and shall be fully responsible for the design, manufacture, Supply, and successful performance of the equipment in accordance with the Contract:
2. In case of any breach or default of the said Contract by any of the parties to the Joint Venture, the party(s) do hereby undertake to be fully responsible for the successful performance of the Contract and to carry out all the obligations and responsibilities under the Contract in accordance with the requirements of the Contract.
3. Further, if the Employer suffers any loss or damage on account of any breach in the Contract or any shortfall in the performance of the equipment in meeting the performances guaranteed as per the specification in terms of the Contract, the Party(s) of these presents undertake to promptly make good such loss or damages caused to the Employer, on its demand without any demur. It shall not be necessary or obligatory for the Employer to proceed against Lead Partner to these presents before proceeding against or dealing with the other Party(s), the Employer can proceed against any of the parties who shall be jointly and severally liable for the performance and all other liabilities/obligations under the Contract to the Employer.
4. The financial liability of the Parties of this Deed of Undertaking to the Employer, with respect to any of the claims arising out of the performance or non-performance of the obligations set forth in this Deed of Undertaking, read in conjunction with the relevant conditions of the Contract shall, however not be limited in any way so as to restrict or limit the liabilities or obligations of any of the Parties of this Deed of Undertaking.
5. It is expressly understood and agreed between the Parties to this Undertaking that the responsibilities and obligations of each of the Parties shall be as delineated in Annexure attached with this undertaking. It is further undertaken by the parties that the above sharing of responsibilities and obligations shall not in any way be a limitation of joint and several responsibilities of the Parties under the Contract.
6. It is also understood that this Undertaking is provided for the purposes of undertaking joint and several liabilities of the partners to the Joint Venture for submission of the bid and performance of the Contract if awarded and that this Undertaking shall not be deemed to give rise to any additional liabilities or obligations, in any manner or any law, on any of the Parties to this Undertaking or on the Joint Venture, other than the express provisions of the Contract.

7. This Undertaking shall be construed and interpreted in accordance with the provisions of the Contract.
8. In case of an award of a Contract, we the parties to this Deed of Undertaking do hereby agree that we shall be jointly and severally responsible for furnishing a Contract performance security from a bank in favor of the Employer in the currency/currencies of the Contract.
9. It is further agreed that this Deed of Undertaking shall be irrevocable and shall form an integral part of the bid and shall continue to be enforceable till the Employer discharges the same or upon the completion of the Contract in accordance with its provisions, whichever is earlier. It shall be effective from the date first mentioned above for all purposes and intents.

IN WITNESS WHEREOF, the Parties to this Deed of Undertaking have through their authorized representatives executed these presents and affixed Common Seals of their companies, on the day, month and year first mentioned above.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director's Resolution dated

For Lead Partner (Party No.-1)
For and on behalf of M/s
.....

Name

Designation

Signature

(Signature of the authorized
representative)

WITNESS :

I.

II.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director's Resolution dated

For Party No.-2
For and on behalf of M/s.....

(Signature of the authorized
representative)

Name

Designation

Signature

WITNESS :

I.

II.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director's Resolution dated

For Party No.-3
For and on behalf of M/s.
.....

Name

Designation

Signature

(Signature of the authorized
representative)

WITNESS :

I.

II.

Notes:

1. In the event that the successful Bidder is a joint venture formed of two or more companies, the Employer requires that the parties to the joint venture accept joint and several liabilities for all obligations under the Contract.
2. The maximum number of J.V partners is three (03).

Annexure - 3 to Bidding Data Sheet

B. FORM OF LETTER OF INTENT BY JV PARTNERS TO ENTER INTO JV AGREEMENT

THIS LETTER OF INTENT signed on this..... day of..... Two Thousand andby..... a company incorporate under the laws of and having its Registered Office at..... (hereinafter called the "Party No.1" which expression shall include its successors, executors and permitted assigns) and M/s.....a company incorporated under the laws of..... and having its Registered Office at..... (hereinafter called the "Party No.2" which expression shall include its successors, executors and permitted assigns) and M/s. a Company incorporated under the laws of and having its Registered Office at..... (hereinafter called the "Party No.3" which expression shall include its successors, executors and permitted assigns) for the purpose of making a bid and entering into a contract [hereinafter called the "Contract" {in case of award}] against the Specification No.....for associated with of (hereinafter called the "**Employer**").

WHEREAS the Party No.1, Party No.2 and Party No.3 intend to enter into a Joint Venture Agreement

AND WHEREAS the Employer invited bids as per the above mentioned Specification for the design, manufacture, Supply of Equipment Materials stipulated in the bidding documents under associated with

AND WHEREAS Clause 2, Section-ITB and 'Qualification & Evaluation Requirement of the Bidder'(clause 13, 24 & 26 of ITB), and technical provisions forming part of the bidding documents, inter-alia, stipulates that two or more qualified partners, meeting the requirements of Clause 2, Section-ITB and 'Qualification & Evaluation Requirement of the Bidder'(clause 13, 24 & 26 of ITB), as applicable may bid, provided, they submit a Letter of Intent to enter into Joint Venture Agreement and the Joint Venture Partners fulfill all other requirements under Clause 2, Section-ITB and 'Qualification & Evaluation Requirement of the Bidder'(clause 13, 24 & 26 of ITB), and technical provisions forming part of the bidding documents and in such a case, the Letter of Bid (Bid Form) shall be signed by all the proposed partners so as to legally bind all the Partners of the Joint Venture, who will be jointly and severally liable to perform the Contract by entering into Joint Venture Agreement as per proforma specified in this Section IV. Bidding Forms of the Bidding Documents which will be legally binding on all partners and all obligations hereunder.

The above clause further states that this Letter of Intent shall be attached to the bid and the Contract performance guarantee will be as per the format enclosed with the bidding document without any restrictions or liability for either party.

AND WHEREAS the bid is being submitted to the Employer vide proposal No.....dated..... by Party No.1 based on this Letter of Intent between all the parties; under these presents and the bid in accordance with the requirements of Clause 4.1, Section-ITB and

‘Qualification Requirement of the Bidder’, Section-Evaluation and Qualification Criteria, has been signed by all the parties.

NOW THIS UNDERTAKING WITNESSED AS UNDER:

In consideration of the above premises and agreements all the parties of this Letter of Intent do hereby declare and undertake:

1. In requirement of the award of the Contract by the Employer to the Joint Venture Partners, we, the Parties do hereby undertake that M/s..... the Party No.1, shall act as Lead Partner and further declare and confirm that we the parties to the Joint Venture shall jointly and severally be bound unto the Employer for the successful performance of the Contract and shall be fully responsible for the design, manufacture, Supply, and successful performance of the equipment in accordance with the Contract for which we shall enter into Joint Venture Agreement as per proforma specified in this Section IV. Bidding Forms of the Bidding Documents which will be legally binding on all partners:
2. If the Contract is awarded to Joint Venture then in case of any breach or default of the said Contract by any of the parties to the Joint Venture, the party(s) will be fully responsible for the successful performance of the Contract and to carry out all the obligations and responsibilities under the Contract in accordance with the requirements of the Contract.
3. Further, if the Employer suffers any loss or damage on account of any breach in the Contract or any shortfall in the performance of the equipment in meeting the performances guaranteed as per the specification in terms of the Contract, the Party(s) of these presents will promptly make good such loss or damages caused to the Employer, on its demand without any demur. It shall not be necessary or obligatory for the Employer to proceed against Lead Partner to these presents before proceeding against or dealing with the other Party(s), the Employer can proceed against any of the parties who shall be jointly and severally liable for the performance and all other liabilities/obligations under the Contract to the Employer.
4. The financial liability of the Parties of the Deed of Undertaking to the Employer in the event of award of Contract on the Joint Venture, with respect to any of the claims rising out of the performance or non-performance of the obligations set forth in the Deed of Undertaking, read in conjunction with the relevant conditions of the Contract shall, however not be limited in any way so as to restrict or limit the liabilities or obligations of any of the Parties of the Deed of Undertaking.
5. It is expressly understood and agreed between the Parties to this Letter of Intent that the responsibilities and obligations of each of the Parties shall be as delineated in Annexure attached with this Letter of Intent. It is further undertaken by the parties that the above sharing of responsibilities and obligations shall not in any

way be a limitation of joint and several responsibilities of the Parties under the Contract in the event of award on Joint Venture.

6. It is also understood that this Letter of Intent is provided for the purposes of undertaking joint and several liabilities of the partners to the Joint Venture for submission of the bid and performance of the Contract if awarded and that this Letter of Intent shall not be deemed to give rise to any additional liabilities or obligations, in any manner or any law, on any of the Parties to this Letter of Intent or on the Joint Venture, other than the express provisions of the Contract.
7. This Letter of Intent shall be construed and interpreted in accordance with the provisions of the Contract.
8. In case of an award of a Contract, we the parties to this Letter of Intent do hereby agree that we shall enter into Joint Venture Agreement as per proforma specified in this Section IV. Bidding Forms of the Bidding Documents which will be legally binding on all partners and we shall be jointly and severally responsible for furnishing a Contract performance security from a bank in favor of the Employer in the currency/currencies of the Contract.
9. It is further agreed that this Letter of Intent shall be irrevocable and shall form an integral part of the bid. It shall be effective from the date first mentioned above for all purposes and intents.

IN WITNESS WHEREOF, the Parties to this Letter of Intent have through their authorized representatives executed these presents and affixed Common Seals of their companies, on the day, month and year first mentioned above.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director's Resolution dated

For Lead Partner (Party No.-1)
For and on behalf of M/s
.....

Name
Designation

(Signature of the authorized
representative)

Signature

WITNESS :

I.

II.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director's Resolution dated

For Party No.-2
For and on behalf of M/s.....

Name

(Signature of the authorized
representative)

Designation

Signature

WITNESS :

I.

II.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director's Resolution dated

For Party No.-3
For and on behalf of M/s.
.....

Name

(Signature of the authorized
representative)

Designation

Signature

WITNESS :

I.

II.

Notes:

1. In the event that the successful Bidder is a joint venture formed of two or more companies, the Employer requires that the parties to the joint venture accept joint and several liabilities for all obligations under the Contract.
2. The maximum number of J.V. partners is three (3).

**Section –IV: FORM OF TECHNICAL AND PRICE BID AND
APPENDICES TO BID FOR TENDER NO. T-01-2026-27**

Sr. No.	Description	Page No.
1.	Form of Technical Bid	A-1 to A-2
2.	Form of Financial Bid	A-3 to A-4
Appendices to Bid		
3.	Appendix A to Bid: Special Stipulations	A-5
4.	Appendix B to Bid: Foreign Currency Requirements	A-6
5.	Appendix C to Bid: Price Adjustment	A-7 to A-9
6.	Appendix D to Bid: Bill of Quantities	A-10 to A-12
7.	Appendix E to Bid: Proposed Construction Schedule	A-16 to A-17
8.	Appendix F to Bid: Method of Performing Works	A-18
9.	Appendix G to Bid: Proposed Personnel	A-19 to A-20
10.	Appendix H to Bid: Equipment	A-21 to A-22
11.	Appendix I to Bid: Construction Camp and Housing Facilities	A-23
12.	Appendix J to Bid: Organization Chart for Supervisory Staff	A-24
13.	Appendix K to Bid: List of Subcontractors	A-25
14.	Appendix L to Bid: Source of Material	A-26
15.	Appendix M to Bid: Estimated Progress Payments	A-27
16.	Appendix N to Bid: Deviations	A-28 to A-29
17.	Appendix O to Bid: Integrity Pact	A-30 to A-31

18.	Appendix P to Bid: Bidder's Qualification Forms		
	QF-1	General Information	A-33
	QF-2	Construction Experience	A-34
	QF-3	Performance Certificate	A-35
	QF-4	Current Contract Commitments	A-36
	QF-5	Financial Data	A-37
	QF-6	Annual Turnover Data	A-38
	QF-7	Financial Resources	A-39
	QF-8	Bank Certificate	A-40
	QF-9	Pending Litigation	A-41
19.	Appendix Q to Bid: Undertaking of bid security		A-42
20.	Standard Forms		
	I	Bid Security (Bank Guarantee)	A-44 to A-45
	II	Form of Performance Security	A-46 to A-47
	III	Form of Contract Agreement	A-48 to A-49
	IV	Mobilization Advance Guarantee/Bond	A-50 to A-51

Form of Technical Bid

Bid Reference No. _____

(Name of Contract/Works)

To:

We, the undersigned, declare that:

- (a) We have examined the Bidding Documents including Instructions to Bidders, Bidding Data, Conditions of Contract, Contract Data, Specifications, Drawings, if any, Schedule of Prices and Addenda Nos. _____ in accordance with Instructions to Bidders (IB) 9 for the execution of the above-named Works, we, the undersigned, being a company doing business under the name of _____ and address _____ and being duly incorporated under the laws of Pakistan hereby offer to execute and complete such Works and remedy any defects therein in conformity with the said Documents including Addenda.
- (b) Our Bid consisting of the Technical Bid and the Price Bid shall be valid for a period of days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (c) As security for due performance of the under takings and obligations of our bid, we submit here with a Bid security, in the amount specified in Bidding Data Sheet, which is valid (at least) 28 days beyond validity of Bid itself.
- (d) We undertake, if our Bid is accepted, to commence the Works and to deliver and complete the Works comprised in the Contract within the time(s) stated in Contract Data.
- (e) We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process, other than alternative offers submitted in accordance with IB16 (as applicable).
- (f) We agree to permit Employer or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by

auditors. This permission is extended for verification of any information provided in our Technical Bid which comprises all documents enclosed herewith in accordance with IB.11.1 of the Bidding Data Sheet.

Name.....

In the capacity of.....

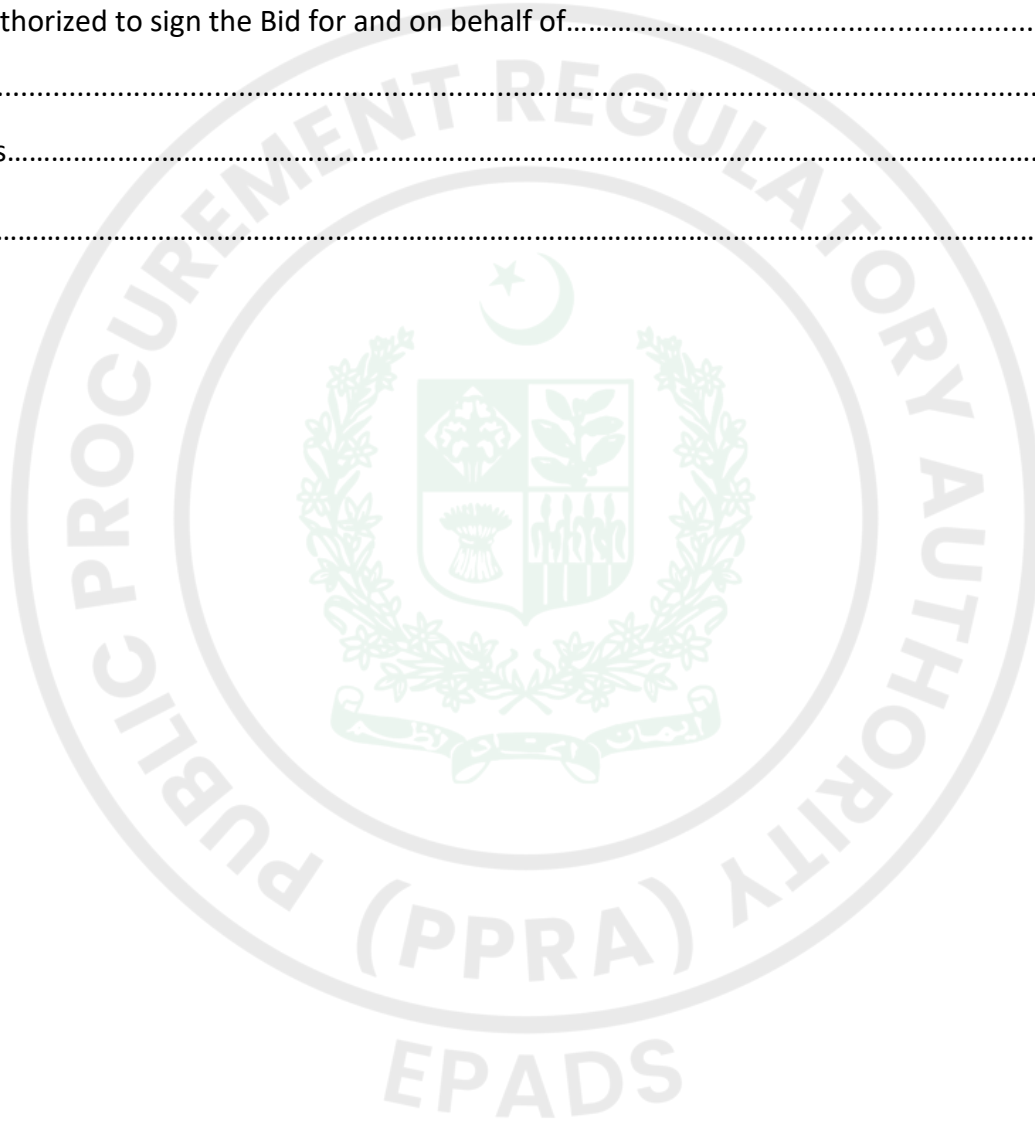
Signed.....

Duly authorized to sign the Bid for and on behalf of.....

Date.....

Address.....

Email.....



Form of Price Bid

Bid Reference No. _____

(Name of Contract/Works)

To:

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (IB)9;
- (b) The total price of our Bid, excluding any discounts offered including Addenda thereto for the Total Bid Price of Rupees

(Rupees _____)

or such other sum as may be ascertained in accordance with the said Documents.

- (c) The discounts offered and the methodology for their application is: _____
- (d) Our Bid shall be valid for a period of days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (e) If our Bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents;
- (f) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed and we do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other bidder for the Works.
- (g) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (h) We agree to permit Employer or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them

audited by auditors. This permission is extended for verification of any information provided in our Technical Bid which comprises all documents enclosed herewith in accordance with IB.11.1 of the Bidding Data Sheet.

- (i) If awarded the contract, the person named below shall act as Contractor's Representative.
- (j) We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons making a bid for the Works.

Name.....

....

In the capacity
of.....

Signed.....

....

Duly authorized to sign the Bid for and on behalf
of.....

Date.....

..

Address.....

...

Email.....

Appendix-A to Bid**SPECIAL STIPULATIONS****Clause****Conditions of Contract**

1.	Engineer's Authority to issue Variation in emergency	2.1	2% of the Contract Price stated in the Letter of Acceptance.
2.	Law Applicable	5.1(b)	The law to be applied is the law of Islamic Republic of Pakistan.
3.	Amount of Performance Security	10.1	10% of Contract Price stated in the Letter of Acceptance.
4.	Time for Furnishing Programme	14.1	Within 07 days from the date of receipt of Letter of Acceptance.
5.	Minimum amount of third-party Insurance	23.2	Rs. 100,000 per occurrence with number of occurrences unlimited.
6.	Time for Commencement	41.1	Within 7 days from the date of receipt of the letter of acceptance.
7.	Time for Completion	43.1, 48.2	10-Days from the date of receipt of Letter of Acceptance. If shutdown will be required by bidder for execution of works, then commencement date will start from the date of approved shutdown from ISMO.
8.	a) Amount of Liquidated Damages	47.1	0.05% for each day of delay in completion of the Works subject to a maximum of 10% of Contract Price stated in the Letter of Acceptance.
	b) Amount of Bonus	47.3	Not Applicable
9.	Defects Liability Period	49.1	180 days from the effective date of Taking Over Certificate.
10.	Percentage of Retention Money	60.2	10% of the amount of Interim Payment Certificate.
11.	Limit of Retention Money	60.2	10% of Contract Price stated in the Letter of Acceptance.
12.	Minimum amount of Interim Payment Certificates (Running Bills)	60.2	20% (at least) more than the amount of all applicable retentions and deductions on the said bill.
13.	Time of Payment from delivery of Engineer's Interim Payment Certificate to the Employer.	60.10	As per NGC's policy
14.	Mobilization Advance (Interest Free)	60.12	Not Applicable

Appendix-B To Bid**FOREIGN CURRENCY REQUIREMENTS (Not Used)**

1. The Bidder may indicate here in below his requirements of foreign currency (if any), with reference to various inputs to the Works.
2. Foreign Currency Requirement as percentage of the Bid Price excluding Provisional Sums _____%.
3. Table of Exchange Rates

Unit of Currency	Equivalent in Pak. Rupees
Australian Dollar	-----
Euro	-----
Japanese Yen	-----
U.K. Pound	-----
U.S. Dollars	-----
-----	-----
-----	-----

Appendix-C to Bid

PRICE ADJUSTMENT (Not Applicable)**Price Adjustment Formula for BOQ item 2 (foundations) and “additional work (items 6, 7, 8, 14 & 15)”**

Prices payable to the Contractor, in accordance with the Contract, shall be subject to adjustment during performance of the Contract to reflect changes in the cost of civil works' inputs viz. skilled & unskilled labor, reinforcing steel bars, cement, petrol and diesel, in accordance with the formula given here below, for any increase or decrease in the costs of the following:

- (a) Rate of wages of skilled or unskilled labour.
- (b) Petrol and Diesel Fuel
- (c) Cement
- (d) Reinforcing Steel Bars

Not Applicable

No increase in the price of each of the above-mentioned components will be allowed beyond the scheduled completion period of Civil Works if the price increase is because of reasons attributable to the Contractor. The escalation for each component shall be according to the scheduled completion of that item provided that extension is granted.

For the avoidance of doubt, the price adjustment regarding Civil Works carried out later than the Scheduled period, shall continue to be paid at the revised rate of the constituent prevailing as on the date of its scheduled completion. For each claim, the Contractor shall submit invoice from each source of supply.

The increase or decrease in the amount payable by Employer to the Contractor shall be calculated on the basis of the following formula:

$$A1 = A/100 \left(30 + 20 \frac{UL1}{UL} + 14 \frac{L1}{L} + 5 \frac{P1}{P} + 11 \frac{D1}{D} + 15 \frac{S1}{S} + 5 \frac{C1}{C} \right)$$

Where

A1 = Revised amount for payment.

A = is the amount payable to the Contractor at the rates entered in Price Schedules, for the work executed after the date of change in the rates or prices of labour or materials mentioned in this section.

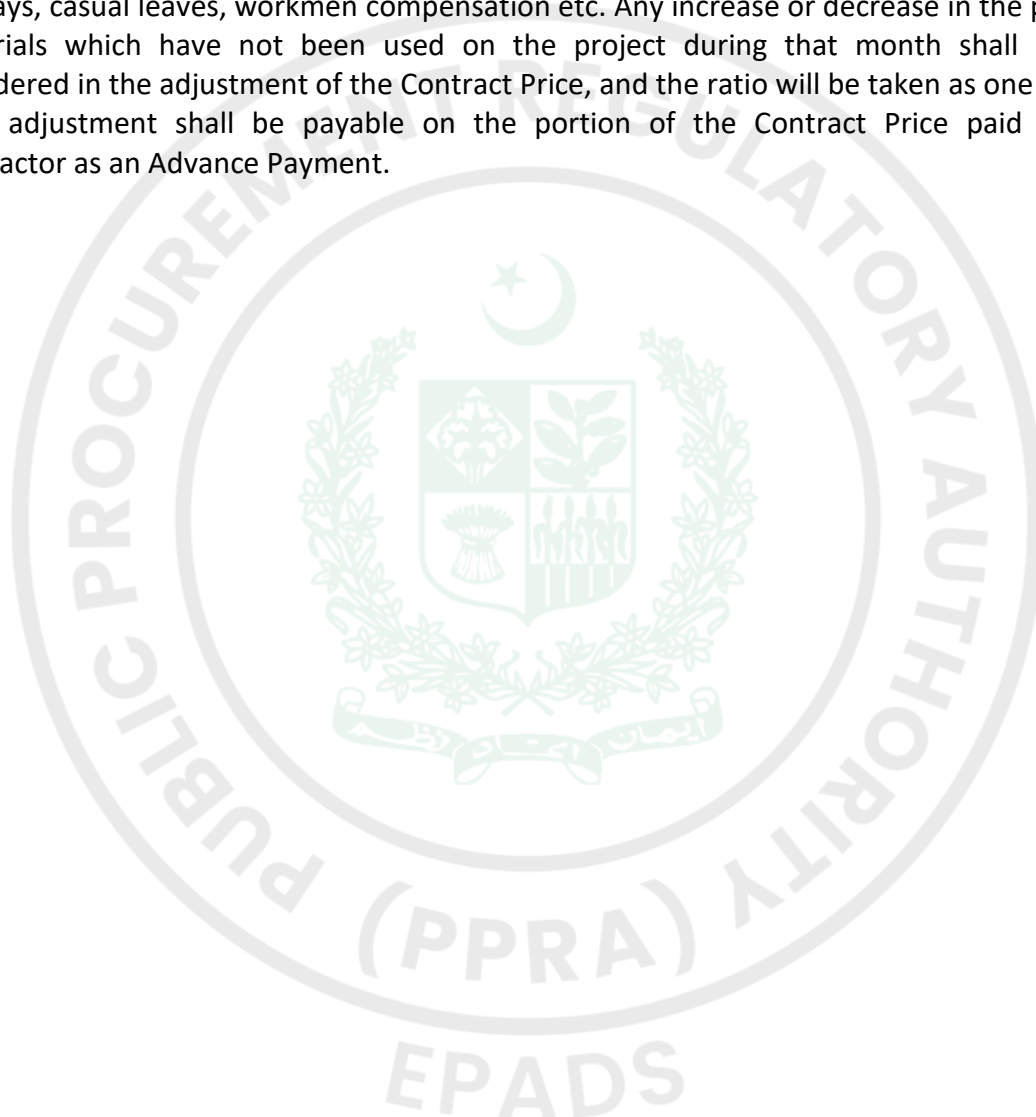
UL = is the basic minimum monthly wage rate for unskilled labour (PKR per month) twenty eight (28) days prior to the date of Bid opening as stated in Table 11.12 (Intercity Prices of Construction Input Items and Labour Wages) of Monthly Statistical Bulletin for the Karachi City, published by the Federal Bureau of Statistics (FBS), Statistics Division, Government of Pakistan.

- UL1 = is the revised minimum monthly wage rate for unskilled labour (PKR per month) twenty-eight (28) days prior to the start of the execution month as stated in Table 11.12 (Intercity Prices of Construction Input Items and Labour Wages) of Monthly Statistical Bulletin for the Karachi City, published by the FBS, Statistics Division, Government of Pakistan.
- L = is the basic minimum monthly wage rate for skilled labour (mason) (PKR per month) twenty-eight (28) days prior to the date of Bid opening as stated in Table 11.12 (Intercity Prices of Construction Input Items and Labour Wages) of Monthly Statistical Bulletin for the Karachi City, published by the FBS, Statistics Division, Government of Pakistan.
- L1 = is the revised minimum monthly wage rate for skilled labour (mason) (PKR per month) twenty-eight (28) days prior to start of execution month as stated in Table 11.12 (Intercity Prices of Construction Input Items and Labour Wages) of Monthly Statistical Bulletin for the Karachi City, published by the FBS, Statistics Division, Government of Pakistan.
- P = is the basic rate of premium motor gasoline (for sale through retail outlets), maximum Ex-Depot Sales Price (PKR per liter), twenty-eight (28) days prior to the date of Bid opening as notified by Pakistan State Oil (PSO) Limited.
- P1 = is the revised rate of premium motor gasoline (for sale through retail outlets), maximum Ex-Depot Sales Price (PKR per liter), twenty-eight (28) days prior to execution month as notified by Pakistan State Oil (PSO) Limited.
- D = is the basic rate of high-speed diesel oil (HSD) maximum Ex-Depot Sales Price (PKR per liter), twenty-eight (28) days prior to the date of Bid opening as notified by Pakistan State Oil (PSO) Limited.
- D1 = is the revised rate of high-speed diesel oil (HSD) maximum Ex-Depot Sales Price (PKR per liter), twenty-eight (28) days prior to execution month as notified by Pakistan State Oil (PSO) Limited.
- S = is the basic rate of reinforcing steel ½ inch round MS bars (PKR per metric ton), twenty-eight (28) days prior to the date of Bid opening, as stated in Table 11.10 (Intercity Wholesale Prices of Selected Commodities) Monthly Statistical Bulletin for the Karachi City, published by the FBS, Statistics Division, Government of Pakistan.
- S1 = is the revised rate of reinforcing steel ½ inch round MS bars (PKR per metric ton), twenty-eight (28) days prior to the start of execution month, as stated in Table 11.10 (Intercity Wholesale Prices of Selected Commodities) of Monthly Statistical Bulletin for the Karachi City, published by the FBS, Statistics Division, Government of Pakistan.
- C = is the basic rate of Ordinary Portland Cement (PKR per bag), twenty-eight (28) days prior to the date of Bid opening as stated in Table 11.12 (Intercity Prices of Construction Input Items and Labour Wages) of Monthly Statistical Bulletin for the Karachi City, published by the FBS, Statistics Division, Government of Pakistan.

C1 = is the revised rate of Ordinary Portland Cement (PKR per bag), twenty-eight (28) days prior to the start of execution month as stated in Table 11.12 (Intercity Prices of Construction Input Items and Labour Wages) of Monthly Statistical Bulletin for the Karachi City, published by the FBS, Statistics Division, Government of Pakistan.

30 = is the fixed percentage coefficient.

In determining the amount of any increase or decrease to the Contract Price pursuant to this section, no account shall be taken of any fluctuation as a result of Government Orders or otherwise in the cost of benefits i.e. bonus, gratuity, education, group insurance, paid holidays, casual leaves, workmen compensation etc. Any increase or decrease in the price of materials which have not been used on the project during that month shall not be considered in the adjustment of the Contract Price, and the ratio will be taken as one (1). No price adjustment shall be payable on the portion of the Contract Price paid to the Contractor as an Advance Payment.



Appendix-D to Bid**BILL OF QUANTITIES****A. Preamble****General**

1. The Schedule of Quantities shall be read in conjunction with the Conditions of Contract, Specifications and Drawings. The Schedules do not generally give a full description of the Services to be performed under each item. Bidders shall be deemed to have read the Technical Specifications and other sections of the Bidding Documents and reviewed the Drawings to ascertain the full scope of the requirements included in each item prior to filling in the rates and prices. The entered rates and prices shall be deemed to include for the full scope as aforesaid, including overheads and profit.
2. If bidders are unclear or uncertain as to the scope of any item, they shall seek clarification in accordance with IB 8 prior to submitting their bids.
3. The quantities given in the Schedule of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work executed and measured by the Contractor and verified by the Engineer and valued at the rates and prices entered in the priced Schedule of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix in accordance with provisions of the Contract.
4. The rates and prices entered in the priced Schedule of Quantities shall, except insofar as it is otherwise provided under the Contract include all costs of Contractor's plant, labor, supervision, materials, execution, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract. Furthermore, all duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 28 days prior to deadline for submission of Bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder.
5. A rate or price shall be entered against each item in the priced Schedule of Quantities, whether quantities are stated or not. The cost of items against which the Contractor will have failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Schedule of Quantities.
6. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Schedule of Quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of the Works.
7. General directions and description of work and materials are not necessarily repeated nor summarized in the Schedule of Quantities. References to the relevant sections of the Bidding Documents shall be made before entering prices against each item in the priced Schedule of Quantities.

8. Provisional sums if included and so designated in the Schedule of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer in accordance with Conditions of Contract.

Units & Abbreviations

9. Units of measurement, symbols and abbreviations expressed in the Bidding Documents shall comply with the System International Unites (SI Units).
10. The following abbreviations shall be used in the Price Schedules:

Abbreviation

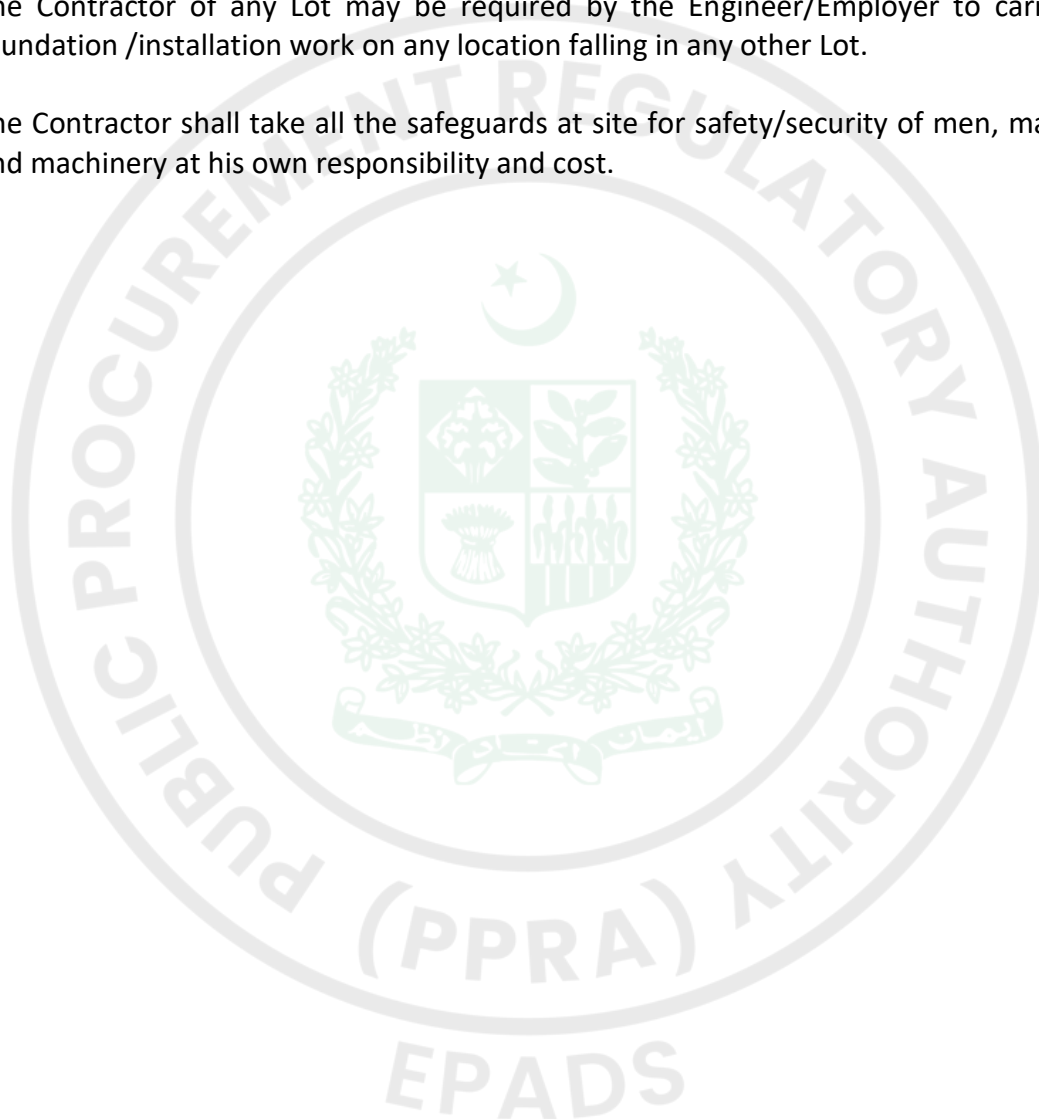
Pakistani Rupees	PKR
Number	No.
Kilometre	km
Kilogram	kg
Cubic Meter	Cu.m
Provisional Sums	PS
Percent	%
Quantity	Qty

Pricing

11. Prices shall be filled in indelible ink, and any alterations necessary due to errors, etc., shall be initialed by the Bidder.
12. As specified in the Bid Data Sheet prices shall be subject to adjustment in accordance with the corresponding Appendix-E to Price Bid (Price Adjustment) to the Contract Agreement.
13. For each item, bidders shall complete each appropriate column in the respective Schedules, giving the price breakdown as indicated in the Schedules. Prices given in the Schedules against each item shall be for the scope covered by that item as detailed in Section 6 (Employer's Requirements), Technical Specifications, Drawings or elsewhere in the Bidding Documents.
14. The TOTAL for each Schedule and TOTAL of the Grand Summary shall be deemed to be the total price for executing and completing the Facilities in accordance with the Contract, whether or not each individual item has been priced.
15. When requested by the Employer for the purposes of making payments or part payments, valuing variations or evaluating claims, or for such other purposes as the Employer may reasonably require, the Contractor shall provide the Employer with a breakdown of any composite or lump sum items included in the Schedules.
16. Except as otherwise expressly provided under the Conditions of Contract, the unit rates and lump sum amounts entered in the Price Schedules will be the rates at which the Contractor will be paid, and shall be deemed to include for the full scope and all costs incurred by the Contractor in the performance of the Facilities, the provision of services

including his overheads, income tax, super tax, other indirect costs, profits and costs of accepting the general risks, liabilities and obligations set forth or implied in the Contract, except for such costs which are specified as reimbursable under the Contract.

17. Arithmetic errors will be corrected by the Employer as per ITB 31.
18. Price of any other item not specifically covered in the Price Schedules but is required for the completion, commissioning and operation of the overhead transmission line shall be deemed to be included in the Schedule of Quantities.
19. The Contractor of any Lot may be required by the Engineer/Employer to carry out foundation /installation work on any location falling in any other Lot.
20. The Contractor shall take all the safeguards at site for safety/security of men, material and machinery at his own responsibility and cost.



Bill of Quantities for Replacement of OPGW span on 220kV Sheikhupura-Ravi Transmission Line

BOQ FOR REPLACEMENT OF DAMAGED OPGW OF SPAN FROM TOWER NO. 14A TO TOWER NO. 14B OF 220KV SHEIKHUPURA-RAVI TRANSMISSION LINE

Item No.	Description	Unit of Measure	Quantity	Unit Rate	Total	Provincial Sales Tax (@16%)	Total Price Inclusive of Provincial Sales Tax
				PKR	PKR	PKR	PKR
1	2	3	4	5	6 = 4x5	7	8 = 6+7
A	<u>Stringing of OPGW</u>						
1	Transportation & installation of OPGW including installation of drop down lengths for joint boxes at the towers along with Allied hardware material including hardware assemblies, joint boxes accessories, dampers etc complete in all respect as per WAPDA/NGC specification & approved drawings from tower no. 14A to tower no. 14B on 220kV Sheikhupura - Ravi Transmission Line (Total 01 No. span)	Lumpsum	01				
2	Installation of New Joint Boxes OPGW to OPGW (A-Type) along-with testing of all 24 No. Fibers.	Lumpsum	02				
	Total of Item A:						
B	<u>Dismantling Work</u>			-			
1	Dismantling of existing OPGW from 220kV CCT along with allied hardware including Shifting and proper stacking of material at designated NGC warehouse.	Lumpsum	1				
	Total of Item B:						
C	<u>Testing and Commissioning</u>						
1	Testing and Commissioning of OPGW (end to end) as per technical specifications	Lumpsum	1				
	Total of Item C:						

	Total of Item A				
	Total of Item B				
	Total of Item C				
	Sub Total = (A+B+C)				
	Grand Total				

Notes:

1	Price of any other item specifically not covered in the Bill of Quantities but is required for the completion and satisfactory operation of the overhead line shall be deemed to be included in the Bill of Quantities.
2	If the Bidder failed to enter the rate of PST, the same shall be deemed to be included in unit price of the items. If the bidder explicitly mentions that the price is without PST, the bid shall be rejected.
3	Contractor has to shift the installation material from the NGC designated warehouse/store to site of work.
4	The Contractor shall be responsible for proper handling of the all material to be transported, dismantled and to be installed at site of work. Contractor has to shift the dismantled tower material from the site to NGC designated warehouse/store.
5	The Contractor shall take all safeguards at site for safety/security of men, material and machinery at his own responsibility and cost until the completion of works as per Scope/ BoQ.
6	In case of arithmetic error between total price and sum of product of line item unit rate and quantity of item, the later should prevail.

Appendix-E to Bid
Sheet 1 of 2

PROPOSED CONSTRUCTION SCHEDULE

Pursuant to Sub-Clause 43.1 of the General Conditions of Contract, the Works shall be completed on or before the date stated in Appendix-A to Bid. The Bidder shall provide as Appendix-E to Bid, the Construction Schedule in the bar chart (CPM, PERT or any other to be specified herein) showing the sequence of work items and the period of time during which he proposes to complete the Works including the activities like mobilization, survey for staking, Civil Works (Foundations), Dismantling & Erection of Towers, Dismantling & Stringing, OPGW Splicing, testing and commissioning of Works to be executed under the Contract. It shall include but not limited to the following:

Sr. No.	Description of Work	Period in days from the effective date of contract
1.	Establishment of site office	
2.	Construction of foundation of Towers (N/A) a) Commencement b) Completion	
3.	Stringing Works along with installation of new joint boxes and associated hardware a) Commencement b) Completion	
4.	Dismantling of Towers (N/A) a) Commencement b) Completion	
5.	Dismantling of Existing OPGW Cable & associated hardware etc. a) Commencement b) Completion	
6.	Returning of dismantled material to designated NGC Store/ Warehouse a) Commencement b) Completion	
7.	Testing & Commissioning a) Commencement b) Completion	

To provide the accumulative effective of the activities per month, the bidder shall also provide the graph/ chart as following:

Sr. No.	Description	Days				
1.	Signing of contract	2	4	6	8	10
2.	Effective Date					
3.	Mobilization					
4.	Civil Works (Foundations) (N/A)					
5.	Erection of Towers (N/A)					
6.	Dismantling of existing OPGW cable & associated hardware etc.					
7.	Stringing Works along with installation of new joint boxes and associated hardware					
8.	Returning of dismantled material to designated NGC Store/ Warehouse					
9.	Testing & commissioning					

The proposed program of Works shall base on the Schedule of Implementation (10 days) as per Bidding Documents.

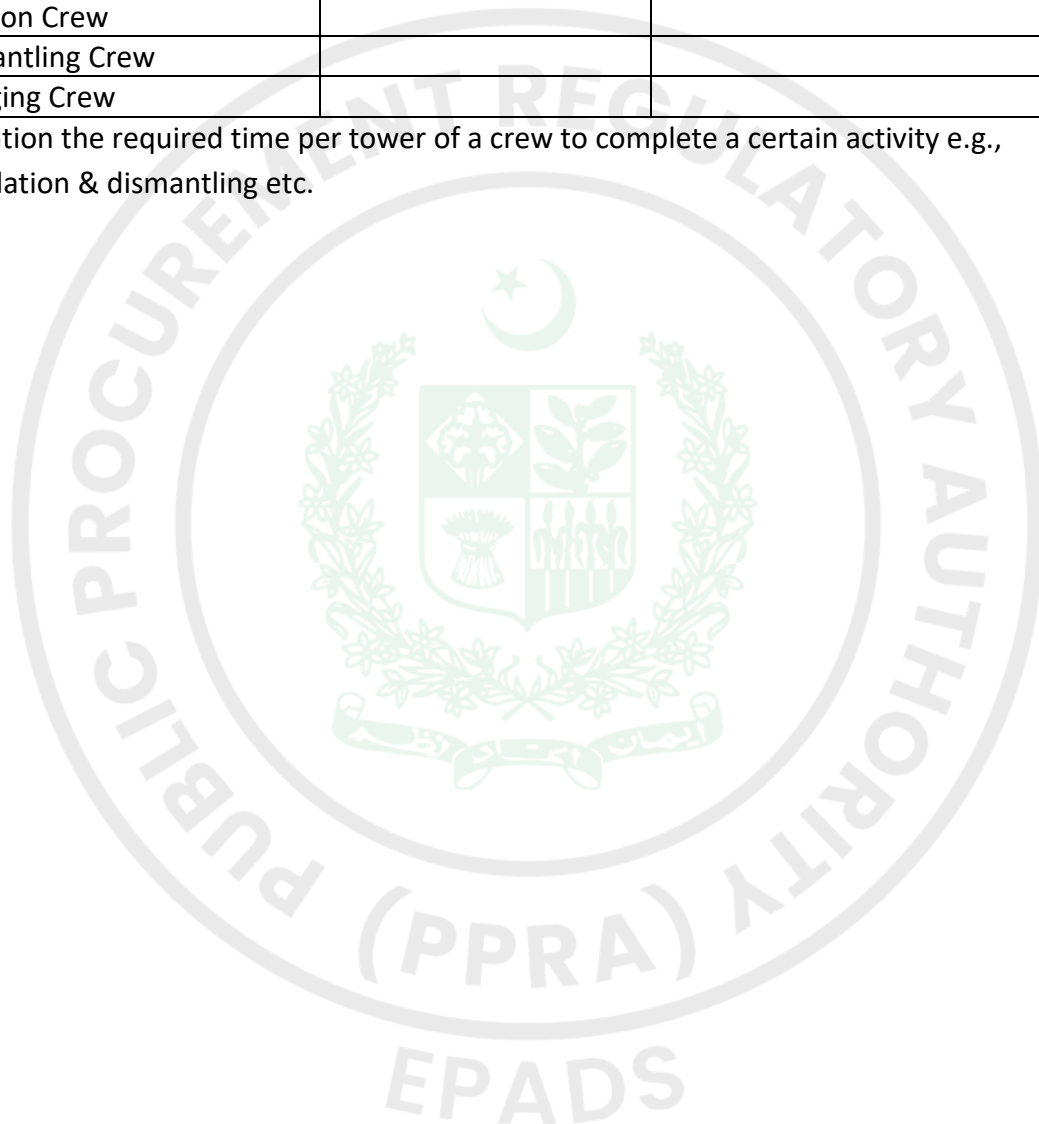


Appendix-E to Bid
Sheet 2 of 2

Note: The bidder shall also indicate the construction crews employed to achieve the completion target for the following:

Type of Crews	No. of Crew employed	Expected Progress/month/crew*
Foundation Crew		
Piling Crew (If Applicable)		
Erection Crew		
Dismantling Crew		
Stringing Crew		

*Mention the required time per tower of a crew to complete a certain activity e.g., foundation & dismantling etc.



Appendix-F to Bid**METHOD OF PERFORMING THE WORK**

The Bidder is required to submit a narrative outlining the method of performing the Work. The narrative should indicate in detail and include but not be limited to:

1. Organization Chart indicating head office and field office personnel involved in management and supervision, engineering, equipment maintenance and purchasing.
2. Mobilization in Pakistan, the type of facilities including personnel accommodation, office accommodation, provision for maintenance and for storage, communications, security and other services to be used.
3. The method of executing the Works, the procedures for installation of equipment and machinery and transportation of equipment and materials to the site.
4. Quality control / Quality assurance measures to be adopted including procedures to be followed for carrying out all tests required under specifications.

Appendix-G to Bid**Personnel****Form PER – 1: Proposed Personnel**

Bidders should provide the names of suitably qualified personnel to meet the specified requirements for each of the positions listed in Section 2. The data on their experience should be supplied using the Form below for each candidate.

1.	Title of position
	Name
2.	Title of position*
	Name
3.	Title of position*
	Name
4.	Title of position*
	Name
5.	Title of position*
	Name

Form PER – 2: Resume of Proposed Personnel

The Bidder shall provide all the information requested below. Fields with asterisk (*) shall be used for evaluation.

Position*		
Personnel information	Name	Date of birth
	Professional qualifications	
Present employment	Name of employer	
	Address of employer	
	Telephone	Contact (manager / personnel officer)
	Fax	E-mail
	Job title	Years with present employer

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

From*	To*	Company, Project, Position and Relevant Technical and Management Experience*

Appendix-H to Bid**EQUIPMENT****Form EQ – 1: List of Major Equipment – Related Items**

The Bidder will provide on Sheet 2 of this Appendix a list of all major equipment and related items, under separate heading for items owned, to be purchased or to be arranged on lease by him to carry out the Works. The information shall include make, type, capacity, and anticipated period of utilization for all equipment which shall be in sufficient detail to demonstrate fully that the equipment will meet all requirements of the Specifications. The list of major equipment for construction works of the project should be addressed under the following categories:

- a) Right of way
- b) Survey for staking
- c) Foundation work (If applicable)
 - i) For dry foundation crew
 - ii) For crew working in water logged area (If applicable)
- d) Pile work/Pile Caps with Beams (If applicable)
- e) Dismantling of Towers
- f) Dismantling of Existing Conductor, Shield wire & associated hardware etc.
- g) Conductor & Shield wire Stringing
- h) Any other

Form EQ – 2: List of Major Equipment (whichever applicable)

Owned Purchased or Leased	Description of Unit (Make, Model, Year)	Capacity HP Rating	Condition	Present Location or Source	Date of Delivery at Site	Period of Work on Project
1	2	3	4	5	6	7
A) Right of way a. Owned b. To be Purchased c. To be arranged on Lease						
B) Survey for staking a. Owned b. To be Purchased c. To be arranged on Lease						
C) Foundation work* a. Owned b. To be Purchased c. To be arranged on Lease						
D) Pile work/Pile Caps with Beams (If Applicable) a. Owned b. To be Purchased c. To be arranged on Lease						
E) Dismantling of Towers (N/A) a. Owned b. To be Purchased c. To be arranged on Lease						
F) Dismantling of Existing OPGW Cable & associated hardware etc. a. Owned b. To be Purchased c. To be arranged on Lease						
G) OPGW stringing a. Owned b. To be Purchased c. To be arranged on Lease						

* Foundation work will involve both dry type foundation and water logged foundation equipment.

Appendix-I to Bid**CONSTRUCTION CAMP AND HOUSING FACILITIES**

The Contractor in accordance with Clause 34 of the Conditions of Contract shall provide description of his construction camp's facilities and staff housing requirements.

The Contractor shall be responsible for pumps, electrical power, water and electrical distribution systems, and sewerage system including all fittings, pipes and other items necessary for servicing the Contractor's construction camp.

The Bidder shall list or explain his plans for providing these facilities for the service of the Contract as follows:

- i. Site Preparation (clearing, land preparation, etc.).
2. Provision of Services.
 - a) Power (expected power load, etc.).
 - b) Water (required amount and system proposed).
 - c) Sanitation (sewage disposal system, etc.).
3. Construction of Facilities
 - a) Contractor's Office. Workshop and Work Areas (areas required and proposed layout, type of construction of buildings, etc.).
 - b) Warehouses and Storage Areas (area required, type of construction and layout).
 - c) Housing and Staff Facilities (Plans for housing for proposed staff, layout, type of construction, etc.).
4. Construction Equipment Assembly and Preparation (detailed plans for carrying out this activity).
5. Other Items Proposed (Security services, etc.).
6. Detail of testing Lab with testing equipment etc.

**ORGANIZATION CHART
FOR THE
SUPERVISORY STAFF AND LABOR**



Appendix-K to Bid**LIST OF SUBCONTRACTORS**

I/We intend to subcontract the following parts of the Work to subcontractors. In my/our opinion, the subcontractors named hereunder are reliable and competent to perform that part of the work for which each is listed.

Enclosed are documentation outlining experience of subcontractors, the curriculum vitae and experience of their key personnel who will be assigned to the Contract, equipment to be supplied by them, size, location and type of contracts carried out in the past.

Part of Works (Give Details)	Subcontractor (With Complete Address)
1	2

Appendix-L to Bid

**SOURCES OF MATERIAL
LIST OF MATERIALS LIKE CEMENT, REINFORCING STEEL**

The bidder shall list in this Schedule the names of materials forming part of tower foundations such as cement, reinforcing steel which he intends to procure in connection with this Contract along with the names and complete addresses of the sources.

Name of Goods/Material/ Equipment	Name of Factory	Address

Use additional sheets if required.

Appendix-M To Bid**ESTIMATED PROGRESS PAYMENTS**

Bidder's estimate of the value of work which would be executed by him during each of the periods stated below, based on his Program of Works and the Rates in the Schedule of Prices,

Period	Amounts (Rs.)
1 st Month	
2 nd Month	
Total Bid Price	

Initials of Signatory to Bid:

Appendix-N to Bid**DEVIATIONS****Form D1-Deviations from Contractual Conditions**

Deviations if any, which the bidder has taken to the Contractual Conditions in preparation of his bid, must be listed below.

Sr. No.	Clause No. /Section No.	Deviations
---------	-------------------------	------------

Note: Attach additional sheets, if necessary.

Form D2-Deviations from Technical Conditions

Deviations if any, which the bidder has taken to the Technical Provisions in preparation of his bid, must be listed below.

Sr. No.	Clause No. /Section No.	Deviations
---------	-------------------------	------------



Note: Attach additional sheets, if necessary.

Appendix-O to Bid**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 No. _____ Dated _____

Contract Value: _____

Contract Title: _____

[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 (GoP) or any administrative subdivision or agency thereof or any other entity owned or controlled by 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, fees 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 consultation 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, representation or warranty.

[name of Supplier] accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts 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 rights 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 Buyer:

Signature:

[Seal]

Name of Seller/Supplier:

Signature:

[Seal]



BIDDER'S QUALIFICATION FORMS

QF-1	General Information
QF-2	Construction Experience
QF-3	Performance Certificate
QF-4	Current Contract Commitments
QF-5	Financial Data
QF-6	Annual Turnover Data
QF-7	Financial Resources
QF-8	Bank Certificate
QF-9	Pending Litigation

Note:-

1. These forms shall be filled up and furnished by the Bidder and its Joint Venture partner(s), if any.
2. If necessary, additional sheets may be added to the forms. Each page of each form should be clearly marked in the right top corner as follows: Form QF1, page 1; Form QF1, page 2, etc.
3. Some forms will require attachments. Such attachments should be clearly marked as follows: Attachment 1 to Form QF1, Attachment 2 to Form QF1, etc.

Form QF-1: General Information

Bidder and its Joint Venture Partner(s) and/or Subcontractors are requested to complete the information in this form. Nationally information of Bidders should also be provided.

1.	Name of Bidder	
2.	Head office address	
3.	Local office address (if any)	
4.	Telephone	Contract
5.	Facsimile	e-mail
6.	Place of incorporation/registration	Year of incorporation/registration
7.	Main lines of Business	
	1.	Since:
	2.	Since:
	3.	Since:
	4.	Since:

Note:

Copies of following credentials shall be attached:

- (a) Copy of incorporation/registration certificate
- (b) Organization chart
- (c) PEC registration certificate in the appropriate category

Signature and Seal of Bidder:

Form QF-2: Construction Experience

Note: To be filled in accordance with criteria described in clause IB3.1 (b) Section-II of the bidding documents

(For a period of Last 10 Years)

Name of the Project:

Order Placed by (full address of Employer)	Order No. and date	Description of Works	Value of order	Date of completion as per contract	Date of actual completion	Remarks indicating reasons for late completion , if any	Has the project been running satisfactorily ? (Attach a certificate from the Employer)	Contact person along with Telephone No., Fax No. and email address

Signature and Seal of the Bidder.....

Place:

Date:

Form QF-3: Performance Certificate

(To be issued on the Letter Head of Issuing Authority)

It is to certify that M/s. _____ has conducted the following works against mentioned project.

Sr.No.	Contract No. & Date	Designation & address of order placing authority/User	Name of Project	Description of Works	Date of Completion	Work Performance

The above services/Works have been performed against our Project and their performance is found satisfactory.

Date of issuing _____

Signature of issuing authority with seal
Name and designation of issuing authority
Address along with Email, Phone No. and
Fax of issuing authority

Note:

- i. In case of those bidders who have provided services to NGC shall furnish the details of such works in the above Performa which shall be signed by their authorized signatory along with seal and certificate is not required from the Employer in this respect.
- ii. **In case the performance certificate is not verifiable through the given contact address and email, the bid may be rejected.**

Form QF-4: Current Contract Commitments

Bidders 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.

Sr. No.	Particulars of works executed	Contract No. & Date	Name of Contract placing Authority	Ordered Value (PKR)	Value of balance work (PKR)
1	2	3	4	5	6
2					
3					
4					
5					
6					
7					

Signature & Seal of the bidder:

Form QF-5: Financial Data

Financial Data for Previous 3 Years			
Particular			
Total Assets			
Total Liabilities			
Net Worth			
Current Assets			
Current Liabilities			
Information from Income Statement			
Total Revenues			
Profits Before Taxes			
Profits After Taxes			
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 Bidder 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).			

Signature and Seal of the bidder:

Form QF-6: Annual Turnover Data

Name of Bidder/Joint Venture Partner:

Bidder and its Joint Venture Partner(s) are requested to complete the information in this form separately. The information supplied should be the annual turnover of the Bidder, in terms of the amounts billed to clients for each year for work in progress or completed. In case of a joint venture, a copy of the Joint Venture Agreement must be attached. The Average Annual Turnover may include turnover of affiliates and subsidiaries to the extent of shareholding percentage of the Bidding company provided the turnover is accrued from similar business activity as the Bidding company. Average Annual Turnover will be considered on "Net Sales" i.e. without Sales tax, discounts etc.

Use a separate sheet for bidder and its Joint Venture partner(s).

Annual turnover data for the following last three fiscal years			
Year	Amount Currency	Exchange Rate	Equivalent Amount (in the currency of Bid)
Average Annual Turnover			

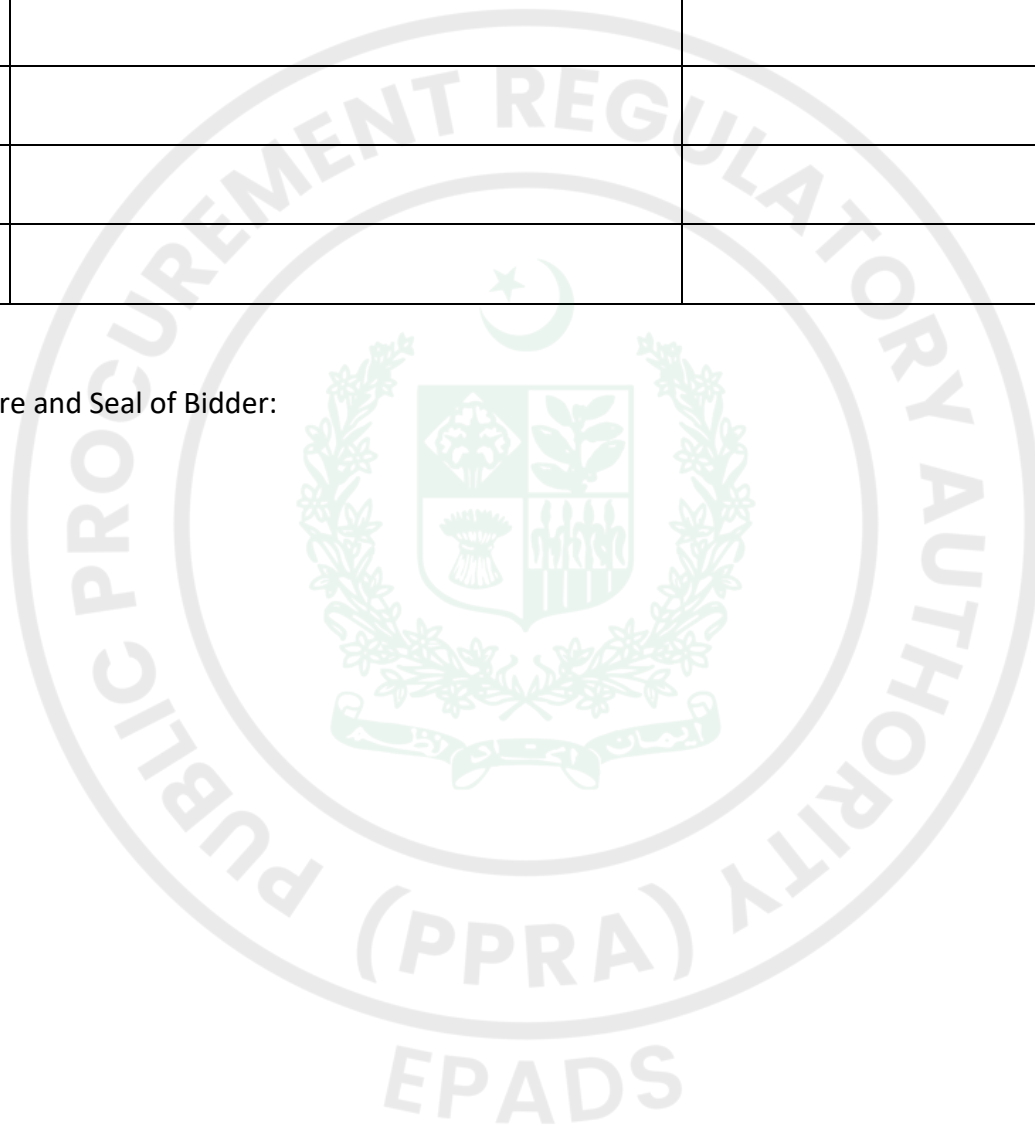
Signature and Seal of Bidder:

Form QF-7: Financial Resources

Specify proposed sources of financing, such as liquid assets, lines of credit, and other financial means, available to meet the total construction cash flow demands of the subject contract.

Financial Resources		
Sr. No.	Source of Financing	Amount
1.		
2.		
3.		
4.		

Signature and Seal of Bidder:



Form QF-8: Bank Certificate

This is to certify that M/s..... is a reputed company with a good financial standing.

If the contract for the work, namely,..... is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs..... to meet their working capital requirements for executing the above contract.

Signature of Senior Bank Manager: _____

Name of the Senior Bank Manager: _____

Address of the Bank: _____

Stamp of the Bank

Note: Certificate should be on the letter head of the bank.

▪ **Change the text as follows for Joint Venture:**

This is to certify that M/s..... who has formed a JV with M/s.....and M/s.....for participating in this bid, is a reputed company with a good financial standing.

If the contract for the work, namely,..... is awarded to the above Joint Venture, we shall be able to provide overdraft/credit facilities to the extent of Rs..... to M/s..... to meet the working capital requirements for executing the above contract.

[This should be given by each of the JV members in proportion to their financial participation.]

Form QF-9: Pending Litigation

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

Pending Litigation					
Year	Name of Other Party(s)	Matter of Dispute	Litigation where (Court/ arbitration)	Amount involved	Value of pending claim as a %age of net worth

Signature and Seal of the bidder:

UNDERTAKING OF BID SECURITY
(To be Submitted on a Non-Judicial Stamp Paper)

We _____ (name of Bidder) undertake that Bid Security in accordance with Clause IB-19 of the bidding document is enclosed with our Price bid.

Signature and Seal of the Bidder:





STANDARD FORMS

BID SECURITY (Bank Guarantee)

Security Executed on _____
(Date)

Name of Surety (Bank) with Address: _____
(Scheduled Bank in Pakistan)

Name of Principal (Bidder) with Address _____

Penal Sum of Security Rupees. _____ (Rs. _____)

Bid Reference No. _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bid and at the request of the said Principal (Bidder) we, the Surety above named, are held and firmly bound unto **Chief Engineer (AM) North , National Grid Company of Pakistan Ltd (NGC)** (hereinafter called the 'Employer') in the sum stated above for the payment of which sum well and truly to be made, 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 Bidder has submitted the accompanying Bid dated _____ for Bid No. _____ for _____ (Particulars of Bid) to the said Employer; and

WHEREAS, the Employer has required as a condition for considering said Bid that the Bidder furnishes a Bid Security in the above said sum from a Scheduled Bank in Pakistan or from a foreign bank duly counter-guaranteed by a Scheduled Bank in Pakistan, to the Employer, conditioned as under:

- (1) that the Bid Security shall remain in force up to and including the date 28 days after the deadline for validity of bids as stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Surety is hereby waived;
- (2) that the Bid Security of unsuccessful Bidders will be returned by the Employer after expiry of its validity or upon signing of the Contract Agreement; and
- (3) that in the event of failure of the successful Bidder to execute the proposed Contract Agreement for such work and furnish the required Performance Security, the entire said sum be paid immediately to the said Employer pursuant to Clause 15.6 of the Instruction to Bidders for the successful Bidder's failure to perform.

NOW THEREFORE, if the successful Bidder shall, within the period specified therefor, on the prescribed form presented to him for signature enter into a formal Contract with the said Employer in accordance with his Bid as accepted and furnish within twenty eight (28) days of his being requested to do so, a Performance Security with good and sufficient surety, as may be required, upon the form prescribed by the said Employer for the faithful performance and proper fulfilment of the said Contract or in the event of non-withdrawal of the said Bid within

the time specified for its validity then this obligation shall be void and of no effect, but otherwise to remain in full force and effect.

PROVIDED THAT the Surety shall forthwith pay the Employer the said sum upon first written demand of the Employer (without cavil or argument) and without requiring the Employer to prove or to show grounds or reasons for such demand, notice of which shall be sent by the Employer by registered post duly addressed to the Surety at its address given above.

PROVIDED ALSO THAT the Employer shall be the sole and final judge for deciding whether the Principal (Bidder) has duly performed his obligations to sign the Contract Agreement and to furnish the requisite Performance Security within the time stated above, or has defaulted in fulfilling said requirements and the Surety shall pay without objection the said sum upon demand from the Employer forthwith and without any reference to the Principal (Bidder) or any other person.

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

SURETY (Bank)

WITNESS:

Signature _____

1. _____ Name _____

_____ Title _____

Corporate Secretary (Seal)

Corporate Guarantor (Seal)

2. _____

Name, Title & Address

**FORM OF PERFORMANCE SECURITY
(Bank Guarantee)**

Guarantee No. _____

Executed on _____

Expiry date _____

[Letter by the Guarantor to the Employer]

Name of Guarantor (Bank) with address: _____
(Scheduled Bank in Pakistan)

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 _____ (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 _____ (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 Clause 49, Defects Liability, 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

defences 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 be the sole and final judge for deciding 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.

Witness:

1. _____

Corporate Secretary (Seal)

2. _____

Name, Title & Address

Guarantor (Bank)

Signature _____

Name _____

Title _____

Corporate Guarantor (Seal)

FORM OF CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the "Agreement") made on the _____ day of _____ (month) 20____ between _____ (hereafter called the "Employer") of the one part and _____ (hereafter called the "Contractor") of the other part.

WHEREAS the Employer is desirous that certain Works, viz _____ 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 witnesseth 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 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, viz:
 - (a) The Contract Agreement;
 - (b) The Letter of Acceptance;
 - (c) The completed Form of Bid;
 - (d) Special Stipulations (Appendix-A to Bid);
 - (e) The Particular Conditions of Contract;
 - (f) The General Conditions;
 - (g) The priced Bill of Quantities;
 - (h) The completed Appendices to Bid;
 - (i) The Drawings;
 - (j) The Specifications.
 - (k) _____ (any other)
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

(Seal)

Signature of Employer

(Seal)

Signed, Sealed and Delivered in the presence of:

Witness:

(Name, Title and Address)

Witness:

(Name, Title and Address)

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 Rupees _____ (Rs _____) 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, _____
(Scheduled Bank in Pakistan or Insurance Company acceptable to the Employer)
(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, of which the Employer shall be the sole and final judge, on the part of the Contractor, 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 Rupees _____ (Rs _____).

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

1. Signature _____
2. Name _____
3. Title _____

WITNESS

1. _____

Corporate Secretary (Seal)

2. _____
(Name Title & Address)

Corporate Guarantor (Seal)

SECTION-V GENERAL CONDITIONS OF CONTRACT

This bidding document follows the FIDIC conditions of contract for construction works. The Conditions of Contract Comprise of two Sections: Section-V – General Conditions of Contract, and Section-VI – Special Conditions of Contract.

All the general Conditions shall be as per the FIDIC documents indicated below. These shall be read along with the Particular Conditions of Contract for interpretation. In case of any discrepancy between these General Conditions of Contract and the Particular Conditions of the Contract of Section-V, the provisions under the latter shall govern.

FIDIC

FEDERATION INTERNATIONALE DES INGENIEURS – CONSEILS

CONDITIONS OF CONTRACT
FOR WORKS OF CIVIL
ENGINEERING CONSTRUCTION

FOURTH EDITION 1987

Reprinted 1988 with editorial amendments

Reprinted 1992 with editorial amendments

TABLE OF CONTENTS

SPECIAL CONDITIONS OF CONTRACT

Clause	Title	Page
1.1	Definitions	1
2.1	Engineer's Duties and Authority	2
2.3	Engineer's Authority to delegate	3
2.7	Engineer Not Liable	3
2.8	Replacement of the Engineer	3
5.1	Language(s) and Law	3
5.2	Priority of Contract Documents	3
6.1	Custody & supply of Drawing & Document	4
6.6	Shop Drawings	4
6.7	As-Built Drawings	4
10.1	Performance Security	4
10.4	Performance Security Binding on Variations and Changes	5
11.1	Inspection of Site	5
14.1	Programme to be Submitted	5
14.3	Cash Flow Estimate to be Submitted	6
14.5	Monthly Progress Report	6
15.1	Contractor's Superintendence	7
15.2	Language Ability of Contractor's Representative	7
16.3	Language Ability of Superintending Staff of Contractor	8
16.4	Employment of Local Personnel	8
19.3	Safety Precautions	8
19.4	Lighting Works at Night	8
20.4	Employer's Risks	8
21.1	Insurance of Works and Contractor's Equipment	8
21.4	Exclusions	9
25.3	Remedy on Contractor Failure to Insure	9
25.4	Compliance with Policy Conditions	9
25.5	Insurance Company	9
31.3	Co-operation with Other Contractors	9
34.2	Rates of Wages and Conditions of Labour	10
34.3	Employment of Persons in the Service of Others	10
34.4	Housing for Labour	10
34.5	Health and Safety	10
34.6	Epidemics	10
34.7	Supply of Water	11
34.8	Alcoholic Liquor or Drugs	11
34.9	Arms and Ammunition	11
34.10	Festivals and Religious Customs	11
34.11	Disorderly Conduct	11
34.12	Compliance by Subcontractors	11
35.1	Return of Labor & Contractor's Equipment	11
35.2	Records of Safety and Health	12

35.3	Reporting of Accidents	12
36.6	Use of Pakistani Materials and Services	12
41.1	Commencement of Works	12
47.3	Bonus for Early Completion of Works	12
48.2	Taking Over of Sections or Parts	12
49.5	Extensions of Defects Liability Period	12
51.2	Instructions for Variations	13
52.1	Valuation of Variations	13
53.4	Failure to Comply	13
54.5	Conditions of Hire of Contractor's Equipment	13
59.4	Payments to Nominated Sub-contractors	13
59.5	Certification of Payments & Nominated Subcontractors	13
60.1	Monthly Statements	14
60.2	Monthly Payments	14
60.10	Time for Payment	14
60.11	Secured Advance on Materials	14
60.12	Financial Assistance to Contractor	15
63.1	Default of Contractor	16
65.2	Special Risks	16
67.1	Engineer's decision	16
67.2	Amicable settlement	16
67.3	Arbitration	16
68.1	Notices to Contractor	17
68.2	Notices to Employer and Engineer	17
69.0	Default of Employer	17
70.1	Increase or Decrease of Cost	17
73.1	Payment of Income Tax	17
73.2	Customs Duty & Taxes	17
74.1	Integrity Pact	18
75.1	Termination of Contract for Employer's Convenience	18
76.1	Liability of Contractor	18
77.1	Joint and Several Liability	18
78.1	Details to be Confidential	18

SPECIAL CONDITIONS OF CONTRACT**(Mandatory Provisions not to be Amended / Substituted except as instructed by PEC)****1.1 Definitions**

(a) (i) The Employer is: Director (Field Operations) North NGC Area Lahore-1
National Grid Company of Pakistan (NGC)
220kV Grid Station NKLP NGC Lahore,
Telephone No. 92-335-7401612
E-mail address: tech.amnlhr@ntdc.com.pk

(a) (iv) The Engineer is: Director (Field Operations) North NGC Area Lahore-1
National Grid Company of Pakistan (NGC)
220kV Grid Station NKLP NGC Lahore,
Telephone No. 92-335-7401612
E-mail address: tech.amnlhr@ntdc.com.pk

or any other competent person appointed by the Employer, and notified to the Contractor, to act in replacement of the Engineer. Provided always that except in cases of professional misconduct, the outgoing Engineers is to formulate his certifications/recommendations in relation to all outstanding matters, disputes and claims relating to the execution of the Works during his tenure.

The following paragraph is added:

(a)(vi) "Bidder or Tenderer" means any person or persons, company, corporation, firm or joint venture submitting a Bid or Tender.

(b)(v) The following is added at the end of the paragraph:

The word "Tender" is synonymous with "Bid" and the word "Tender Documents" with "Bidding Documents".

The following paragraph is added:

(b)(ix) "Programme" means the programme to be submitted by the Contractor in accordance with Sub-Clause 14.1 and any approved revisions thereto.

(e)(i) The text is deleted and substituted with the following:

"Contract Price" means the sum stated in the Letter of Acceptance as payable to the Contractor for the execution and completion of the Works subject to such additions thereto or deductions there from as may be made and remedying of any defects therein in accordance with the provisions of the Contract.

2.1 Engineer's Duties and Authority

With reference to Sub-Clause 2.1(b), the following provisions shall also apply;

The Engineer shall obtain the specific approval of the Employer before carrying out his duties in accordance with the following Clauses:

- (i) Consenting to the sub-letting of any part of the Works under Sub-Clause 4.1 "Subcontracting".
- (ii) Certifying additional cost determined under Sub-Clause 12.2 "Not Foreseeable Physical Obstructions or Conditions".
- (iii) Any action under Clause 10 "Performance Security" and Clauses 21,23,24 & 25 "Insurance" of sorts.
- (iv) Any action under Clause 40 "Suspension".
- (v) Any action under Clause 44 "Extension of Time for Completion".
- (vi) Any action under Clause 47 "Liquidated Damages for Delay" or Payment of Bonus for Early Completion of Works (PCC Sub-Clause 47.3).
- (vii) Issuance of "Taking over Certificate" under Clause 48.
- (viii) Issuing a Variation Order under Clause 51, except:
 - a) in an emergency* situation, as stated here below, or
 - b) if such variation would increase the Contract Price by less than the amount stated in the Appendix-A to Bid.
- (ix) Fixing rates or prices under Clause 52.
- (x) Extra payment as a result of Contractor's claims under Clause 53.
- (xi) Release of Retention Money to the Contractor under Sub-Clause 60.3 "Payment of Retention Money".
- (xii) Issuance of "Final Payment Certificate" under Sub-Clause 60.8.
- (xiii) Issuance of "Defect Liability Certificate" under Sub-Clause 62.1.
- (xiv) Any change in the ratios of Contract currency proportions and payments thereof under Clause 72 "Currency and Rate of Exchange".

(Note: Employer may further vary according to need of the project)

* (If in the opinion of the Engineer an emergency occurs affecting the safety of life or of the Works or of adjoining property, the Engineer may, without relieving the Contractor of any of his duties and responsibilities 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 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 52 and shall notify the Contractor accordingly, with a copy to the Employer.)

2.3 Engineer's Authority to delegate:

The following paragraph is added:

The Concerned Director General (Design) Engineering NGC shall act as representative of Engineer for providing in house Engineering Services including but not limited to the following:

- a) Review & approval of technical data/ drawings/design
- b) Interpretation of the bidding documents
- c) Review & approval of profile/plan tabling/route plan
- d) Foundation designs, review and approvals
- e) Site visits for attending any technical problem if necessary
- f) Resolution of disputes
- g) Review & approval of all technical matters

The following Sub-Clauses 2.7 and 2.8 are added:

2.7 Engineer Not Liable

Approval, reviews and inspection by the Engineer of any part of the Works does not relieve the Contractor from his sole responsibility and liability for the supply of materials, plant and equipment for construction of the Works and their parts in accordance with the Contract and neither the Engineer's authority to act nor any decision made by him in good faith as provided for under the Contract whether to exercise or not to exercise such authority shall give rise to any duty or responsibility of the Engineer to the Contractor, any Subcontractor, any of their representatives or employees or any other person performing any portion of the Works.

2.8 Replacement of the Engineer

If the Employer intends to replace the Engineer, the Employer shall, not less than 14 days before the intended date of replacement, give notice to the Contractor, of the name, address and relevant experience of the intended replacement Engineer. The Employer shall not replace the Engineer with a person against whom the Contractor raises reasonable objection by notice to the Employer, with supporting particulars.

5.1 Language(s) and Law

- (a) The Contract Documents shall be drawn up in the English language.
- (b) The Contract shall be subject to the Laws of Islamic Republic of Pakistan.

5.2 Priority of Contract Documents

The documents listed at (1) to (6) of the Sub-Clause are deleted and substituted with the following:

- (1) The Contract Agreement (if completed);
- (2) The Letter of Acceptance;
- (3) The completed Form of Bid;

- (4) Special Stipulations (Appendix-A to Bid);
- (5) The Special Conditions of Contract;
- (6) The General Conditions;
- (7) The priced Bill of Quantities;
- (8) The completed Appendices to Bid;
- (9) The Specifications
- (10) The Drawings;

All Drawings and Specifications shall be interpreted in conformity with the Contract and these Conditions. Addendum, if any, shall be deemed to have been incorporated at the appropriate places in the documents forming the Contract. If any ambiguity or discrepancy is found in the documents, the Engineer shall issue any necessary clarification or instruction which shall be binding.

6.1 Custody and supply of Drawings & Documents

The contractor shall supply a soft copy of such drawings in source file and any other format specified by the Engineer.

The following Sub-Clauses 6.6 and 6.7 are added:

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

6.7 As-Built Drawings

At the completion of the Works under the Contract, the Contractor shall furnish to the Engineer 6 copies and one reproducible of all drawings amended to conform to the Works as built. The price of such Drawings shall be deemed to be included in the Contract Price.

10.1 Performance Security

The text is deleted and substituted with the following:

The Contractor shall provide Performance Security to the Employer in the prescribed form. The said Security shall be furnished or caused to be furnished by the Contractor within 14 days after the receipt of the Letter of Acceptance. The Performance Security shall be of an amount equal to 10% of the Contract Price stated in the Letter of Acceptance. Such Security shall, at the option of the bidder, be

in the form of bank guarantee from any Scheduled Bank in Pakistan. The cost of complying with requirements of this Sub-Clause shall be borne by the Contractor.

The following Sub-Clause 10.4 is added:

10.4 Performance Security Binding on Variations and Changes

The Performance Security shall be binding irrespective of changes in the quantities or variations in the Works or extensions in Time for Completion of the Works which are granted or agreed upon under the provisions of the Contract.

11.1 Inspection of Site

Bidder shall inspect the site, examine and obtain all information required and satisfy himself regarding matters and things such as access to site, communication, transport, right of way, the type and number of equipment and facilities required for the satisfactory completion of work, the quantity of various sections of the work, the availability of local labour, availability and rates of materials, local working conditions, uncertainties of weather, obstructions and hindrances that may arise etc., which may affect the work or cost thereof, before submission of his bid. Ignorance of site conditions shall not be accepted by the owner as basis for any claim for compensation. The submission of a bid by the bidder will be construed as evidence that such an examination was made and any later claims/disputes in regard to rates quoted shall not be entertained or considered by the owner.

If any temporary feeder road within site is considered essential for the proper execution of the work this shall have to be formed by the Contractor at his own cost with the prior approval of the Engineer. The Contractor shall organize his own arrangement to transport his equipment, men and materials in such a manner that the completion period will not be exceeded on any account.

The rates quoted by Bidder shall be based on his own knowledge and judgement of the conditions and hazards involved and shall not be based on any representations to the Engineer.

14.1 Programme to be submitted

The Contractor shall submit a detailed time programme to the Engineer within 14 days after receipt of Letter of Acceptance.

The Contractor shall also submit a revised programme whenever the previous programme is inconsistent with actual progress or with the Contractor's obligations.

Each programme shall be in the form of bar chart or a CPM chart identifying the critical activities and include:

- a) The order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage of design (if any), Contractor's Documents, procurement, delivery to Site, construction, erection and testing.

- b) Each of these stages for work by each nominated subcontractor
- c) The sequence and timing of site inspections and tests specified in the Contract, and a supporting report which includes:
 - i) A general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works, and
 - ii) Details showing the Contractor's reasonable estimate of the number of each class of Contractor's Personnel and of each type of Contractor's Equipment, required on the Site for each major stage.

Unless the Engineer, within 21 days after receiving a programme, gives notice to the Contractor stating the extent to which it does not comply with the Contract, the Contractor shall proceed in accordance with the programme, subject to his other obligations under the Contract. The Employer's Personnel shall be entitled to rely upon the programme when planning their activities.

If, at any time, the Engineer gives notice to the Contractor that a programme fails (to the extent stated) to comply with the Contract or to be consistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised programme to the Engineer in accordance with this Sub-Clause.

The period between the Program updates will be 30 days. If the contractor fails to submit an updated program in time, any payment due for his current bills will be withheld till the submission of such programme.

14.3 Cash Flow Estimate to be submitted

The detailed Cash Flow Estimate shall be submitted within 21 days from the date of receipt of Letter of Acceptance

The following Sub-Clause 14.5 is added:

14.5 Monthly Progress Report

During the period of the Contract, the Contractor shall submit to the Engineer not later than the 8th day of the following month, copies of Monthly Progress Reports covering:

- (1) A Construction Schedule indicating the monthly progress in percentage;
- (2) Description of all work carried out since the last report;
- (3) Description of the work planned for the next 56 days sufficiently detailed to enable the Engineer to determine his programme of inspection and testing;
- (4) Monthly summary of daily job record;
- (5) Photographs to illustrate the status of progress on the Site.
- (6) Information about problems and difficulties encountered, if any, and proposals to overcome the same.
- (7) Charts and detailed descriptions of progress, including each stage of design (if

any), Contractor's Documents, delivery of material to Site, construction, erection and testing; and including these stages for work by each nominated Subcontractor.

- (8) The details described in Sub-Clause 35.1 [Return of labor & Contractor's Equipment]
- (9) Copies of quality assurance documents, test results and certificates of Materials.
- (10) List of notices given under Sub-Clause 68.1[Notice to Contractor] and notices given under Sub-Clause 68.2[Notice to Employer & Engineer].
- (11) Safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations.
- (12) Comparisons of actual and planned progress, with details of any events or circumstances which may jeopardize the completion in accordance with the Contract, and the measures being (or to be) adopted to overcome delays.

These progress reports will be submitted as per the following distribution list:

- (1) ED (FO) North, NGC
- (2) DG (FO), NGC
- (3) DG(Design Engg), NGC
- (4) Director (FO) NGC Concerned
- (5) Sr. Manager (FO) NGC Concerned

During the period of the Contract, the Contractor shall keep a daily record of the work progress, which shall be made available to the Engineer as and when requested. The daily record shall include particulars of weather conditions, number of men working, deliveries of materials, quantity, location and assignment of Contractor's equipment.

15.1 Contractor's Superintendence

The Contractor's authorised representative and his other professional engineers working at Site shall register themselves with the Pakistan Engineering Council.

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

The following Sub-Clauses 15.2 is added:

15.2 Language Ability of Contractor's Representative

The Contractor's authorized representative shall be fluent in the English language. Alternately an interpreter with ability of English language shall be provided by the Contractor on full time basis.

The following Sub-Clauses 16.3 and 16.4 are added:

16.3 Language Ability of Superintending Staff of Contractor

A reasonable proportion of the Contractor's superintending staff shall have a working knowledge of the English language. If the Contractor's superintending staffs is not fluent in English language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer.

16.4 Employment of Local Personnel

The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour from sources within Pakistan.

The following Sub-Clauses 19.3 and 19.4 are added:

19.3 Safety Precautions

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 authorise 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 make, maintain and submit reports to the Engineer concerning safety, health and welfare of persons and damage to property, as the Engineer may from time to time prescribe.

19.4 Lighting Work at Night

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's Representative.

20.4 Employer's Risks

The Employer's risks are:

Notwithstanding anything contained (in GCC 20.4), the Employer shall not be responsible, compensate or bear any kind of risk/liability whatsoever in nature. The responsibility for safe and sound handling of all dismantled material will be on part of contractor. The watch and ward of site with material will be responsibility of contractor round the clock to avoid any theft incident.

21.1 Insurance of Works and Contractor's Equipment

The minimum insurance amounts and deductibles shall be:

- (a) For the Works and Materials: Full value of material.
- (b) For loss or damage to Equipment: Full value of the loss/damage.
- (c) For loss or damage to property (except the Works, Materials, and

- Equipment) in connection with Contract: Full value of loss/damage to property
- (d) For personal injury or death:
- i) of the Contractor's employees: In accordance with such applicable laws in Pakistan
 - ii) of other people: : In accordance with such applicable laws in Pakistan

21.4 Exclusions

The text is deleted and substituted with the following:

There shall be no obligation for the insurances in Sub-Clause 21.1 to include loss or damage caused by the risks listed under Sub-Clause 20.4 sub paragraph (a) to (h).

25.3 Remedy on Contractor Failure to Insure

Delete the text and substitute with the following:

The Contractor shall effect and keep in force all insurances required under the contract. The Employer shall not affect any kind of insurance on behalf of this project.

25.4 Compliance with Policy Conditions

Delete the text and substitute with the following:

"In the event that the Contractor fails to comply with conditions imposed by the insurance policies affected pursuant to the contract, the Contractor shall indemnify the employer against all losses and claims arising from such failure."

The following Sub-Clause 25.5 is added:

25.5 Insurance Company

The Contractor shall be obliged to place all insurances relating to the Contract (including, but not limited to, the insurances referred to in Clauses 21, 23 and 24) with either National Insurance Company of Pakistan or any other insurance company operating in Pakistan and acceptable to the Employer.

Costs of such insurances shall be borne by the Contractor.

The following Sub-Clause 31.3 is added:

31.3 Co-operation with other Contractors

During the execution of the Works, the Contractor shall co-operate fully with other contractors working for the Employer at and in the vicinity of the Site and also shall provide adequate precautionary facilities not to make himself a nuisance to local residents and other contractors.

The following Sub-Clauses 34.2 to 34.12 are added:

34.2 Rates of Wages and Conditions of Labour

The Contractor shall pay rates of wages and observe conditions of labour not less favourable than those established for the trade or industry where the work is carried out. In the absence of any rates of wages or conditions of labour so established, the Contractor shall pay rates of wages and observe conditions of labour which are not less favourable than the general level of wages and conditions observed by other employers whose general circumstances in the trade or in industry in which the Contractor is engaged are similar.

34.3 Employment of Persons in the Service of Others

The Contractor shall not recruit his staff and labour from amongst the persons in the services of the Employer or the Engineer; except with the prior written consent of the Employer or the Engineer, as the case may be.

34.4 Housing for Labour

Save insofar as the Contract otherwise provides, the Contractor shall provide and maintain such housing accommodation and amenities as he may consider necessary for all his supervisory staff and labour, employed for the purposes of or in connection with the Contract including all fencing, electricity supply, sanitation, cookhouses, fire prevention, water supply and other requirements in connection with such housing accommodation or amenities. On completion of the Contract, these facilities shall be handed over to the Employer or if the Employer so desires, the temporary camps or housing provided by the Contractor shall be removed and the Site reinstated to its original condition, all to the approval of the Engineer.

34.5 Health and Safety

Due precautions shall be taken by the Contractor, and at his own cost, to ensure the safety of his staff and labour at all times throughout the period of the Contract. The Contractor shall further ensure that suitable arrangements are made for the prevention of epidemics and for all necessary welfare and hygiene requirements.

34.6 Epidemics

In the event of any outbreak of illness of an 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 purpose of dealing with and overcoming the same.

34.7 Supply of Water

The Contractor shall, so far as is reasonably practicable, having regard to local conditions, provide on the Site, to the satisfaction of the Engineer or his representative, adequate supply of drinking and other water for the use of his staff and labour.

34.8 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Statutes, Ordinances and Government Regulations or Orders for the time being in force, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or suffer any such importation, sale, gift, barter or disposal by his Subcontractors, agents, staff or labour.

34.9 Arms and Ammunition

The Contractor shall not give, or otherwise dispose of to any person or persons, any arms or ammunition of any kind or permit or suffer the same as aforesaid.

34.10 Festivals and Religious Customs

The Contractor shall in all dealings with his staff and labour have due regard to all recognised festivals, days of rest and religious and other customs.

34.11 Disorderly Conduct

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst staff and labour and for the preservation of peace and protection of persons and property in the neighbourhood of the Works against the same.

34.12 Compliance by Subcontractors

The Contractor shall be responsible for compliance by his Subcontractors of the provisions of this Clause.

35.1 Returns of Labour and Contractor's Equipment

The Contractor shall submit, to the Engineer, details showing the number of each class of Contractor's Personnel and of each type of Contractor's Equipment on the Site. Details shall be submitted each calendar month, in a form approved by the Engineer, until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking Over Certificate for the Works.

The following Sub-Clauses 35.2 and 35.3 are added:

35.2 Records of Safety and Health

The Contractor shall maintain such records and make such reports concerning safety, health and welfare of persons and damage to property as the Engineer may from time to time prescribe.

35.3 Reporting of Accidents

The Contractor shall report to the Engineer details of any accident as soon as possible after its occurrence. In the case of any fatality or serious accident, the Contractor shall, in addition, notify the Engineer immediately by the quickest available means.

The following Sub-Clause 36.6 is added:

36.6 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.

41.1 Commencement of Works

The text is deleted and substituted with the following:

The Contractor shall commence the Works on Site within the period named in Appendix-A to Bid. Thereafter, the Contractor shall proceed with the Works with due expedition and without delay.

The following Sub-Clause 47.3 is added:

47.3 Bonus for Early Completion of Works

No bonus is admissible for the project.

48.2 Taking Over of Sections or Parts

For the purposes of para (a) of this Sub-Clause, separate Times for Completion shall be provided in the Appendix-A to Bid "Special Stipulations".

The following Sub-Clause 49.5 is added:

49.5 Extensions of Defects Liability Period

The provisions of this Sub-Clause shall apply to all replacements or renewals of plant and equipment carried out by the Contractor to remedy defects and damage as if the replacements and renewals had been taken over on the date they were completed. The Defects Liability Period for the Works shall be extended by a period equal to the period during which the Works cannot be used by reason of a defect or damage. If only a part of the Works is affected the Defects Liability Period shall be extended

only for that part. In neither case shall the Defects Liability Period extend beyond two (2) years from the date of taking over.

51.2 Instructions for Variations

At the end of the first sentence, after the word "Engineer", the words "in writing" are added.

52.1 Valuation of Variations

In the tenth line, after the words "Engineer shall" the following is added:

Within a period not exceeding one-eighth of the completion time subject to a minimum of 56 days from the date of disagreement whichever is later.

53.4 Failure to Comply

This Sub-Clause is deleted in its entirety.

54.5 Conditions of Hire of Contractor's Equipment

The following paragraph is added:

The Contractor shall, upon request by the Engineer at any time in relation to any item of hired Contractor's Equipment, forthwith notify the Engineer in writing the name and address of the Owner of the equipment and shall certify that the agreement for the hire thereof contains a provision in accordance with the requirements set forth above.

The following Sub-Clauses 59.4 & 59.5 are added:

59.4 Payments to Nominated Subcontractors

The Contractor shall pay to the nominated Subcontractor the amounts which the Engineer certifies to be due in accordance with the subcontract. These amounts plus other charges shall be included in the Contract Price in accordance with Clause 58 [Provisional Sums], except as stated in Sub-Clause 59.5 [Certification of Payments].

59.5 Certification of Payments & Nominated Subcontractors

Before issuing a Payment Certificate which includes an amount payable to a nominated Subcontractor, the Engineer may request the Contractor to supply reasonable evidence that the nominated Subcontractor has received all amounts due in accordance with previous Payment Certificates, less applicable deductions for retention or otherwise. Unless the Contractor:

- a) submits reasonable evidence to the Engineer, or
- b)
 - i) satisfies the Engineer in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts, and
 - ii) submits to the Engineer reasonable evidence that the nominated

Subcontractor has been notified of the Contractor's entitlement,

Then the Employer may (at his sole discretion) pay direct to the nominated Subcontractor, part or all of such amounts previously certified (less applicable deductions) as are due to the nominated Subcontractor and for which the Contractor has failed to submit the evidence described in sub-paragraphs (a) or (b) above. The Contractor shall then repay, to the Employer, the amount which the nominated Subcontractor was directly paid by the Employer.

60.1 Monthly Statements

In the first line after the word "shall", the following is added:

"on the basis of the joint measurement of work done under Clause 56.1,"

In Para (c) the words "the Appendix to Tender" are deleted and substituted with the words "Sub-Clause 60.11 (a)(6) hereof".
(in case Clause 60.11 is applicable)

60.2 Monthly Payments

In the first line, "28" is substituted by "14".

60.3 Payment of Retention Money

a) The following text is added at the end:

"In addition to above, release of this retention money is subject to issuance of GRN/SRS by In charge of designated NGC Warehouse for balance material of the project as per material reconciliation report along with certification from In charge of the Ware House of completeness and healthiness of the returned material. The material reconciliation report shall be duly vetted by Chief Engineer (T/L) Design as per as-built profile of the project."

60.10 Time for Payment

No interest is applicable on any delay at the part of the employer. Second Para starting from "In the event of failure" and ending on "under clause 69 otherwise" is deleted.

63.1 Default of Contractor

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

Provided further that in addition to the action taken by the Employer against the Contractor under this Clause, the Employer may also refer the case of default of the Contractor to Pakistan Engineering Council for punitive action under the Construction and Operation of Engineering Works Bye-Laws 1987, as amended from time to time.

65.2 Special Risks

The text is deleted and substituted with the following:

The Special Risks are the risks defined under Sub-Clause 20.4 sub paragraph (a) to (h).

67.1 Engineer's Decision

Replace eighty fourth with sixtieth in the eighth line of Para 1 of this clause.

Replace eighty fourth with sixtieth in the third line of Para 3 of this clause.

Replace seventieth with thirtieth in the fourth and fifth line of Para 3 of this clause.

Replace 84 with 60 in the sixth line of Para 3 of this clause.

Replace seventieth with thirtieth in the fourth line of Para 4 of this clause.

67.2 Amicable Settlement

Replace fifty sixth with thirtieth in the fourth line of Para 1 of this clause.

67.3 Arbitration

In the sixth to eight lines, the words "shall be finally settled appointed under such Rules" are deleted and substituted with the following:

shall be finally settled under the provisions of the Arbitration Act, 1940 as amended or any statutory modification or re-enactment thereof for the time being in force.

The following paragraph is added:

The place of arbitration shall be Lahore, Pakistan.

68.1 Notices to Contractor

The following paragraph is added:

For the purposes of this Sub-Clause, the Contractor shall, immediately after receipt of Letter of Acceptance, intimate in writing to the Employer and the Engineer by registered post, the address of his principal place of business or any change in such address during the period of the Contract.

68.2 Notices to Employer and Engineer

For the purposes of this Sub-Clause, the respective addresses are:

- a) The Employer: Director (Field Operations) NGC Area Lahore-1
National Grid Company of Pakistan (NGC)
220kV Grid Station NKLP NGC Lahore,
Telephone No. 92-335-7401612

E-mail address: tech.amnlhr@ntdc.com.pk

- b) The Engineer is: Director (Field Operations) NGC Area Lahore-1
National Grid Company of Pakistan (NGC)
220kV Grid Station NKLP NGC Lahore,
Telephone No. 92-335-7401612
E-mail address: tech.amnlhr@ntdc.com.pk

69.0 Default of Employer

This clause with all sub clauses is deleted in its entirety.

70.1 Increase or Decrease of Cost

Sub-Clause 70.1 is deleted in its entirety.

The following Sub-Clauses 73.1, 73.2, 74.1, 75.1, 76.1, 77.1 and 78.1 are added:

73.1 Payment of Income Tax

The Contractor, Subcontractors and their employees shall be responsible for payment of all their income tax, super tax and other taxes on income arising out of the Contract and the rates and prices stated in the Contract shall be deemed to cover all such taxes.

73.2 Customs Duty & Taxes

Contractor will submit the invoice inclusive of Provincial Sales Tax. Provincial Sales Tax shall be charged by the contractor and payments will be subject to income tax and sales tax withholding as per Rules mentioned in Federal or Respective Provincial Laws. Copy of sales tax return will be provided by the contractor.

74.1 Integrity Pact

If the Contractor or any of his Subcontractors, agents or servants is found to have violated or involved in violation of the Integrity Pact signed by the Contractor as Appendix-O to his Bid, 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, agents 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, agents or servants.

The termination under Sub-Para (b) of this Sub-Clause shall proceed in the manner prescribed under Sub-Clauses 63.1 to 63.4 and the payment under Sub-Clause 63.3 shall be made after having deducted the amounts due to the Employer under Sub-Para (a) and (c) of this Sub-Clause.

75.1 Termination of Contract for Employer's Convenience

The Employer shall be entitled to terminate the Contract at any time for the Employer's convenience after giving 56 days prior notice to the Contractor, with a copy to the Engineer. In the event of such termination, the Contractor:

- (a) shall proceed as provided in Sub-Clause 65.7 hereof; and
- (b) shall be paid by the Employer as provided in Sub-Clause 65.8 hereof.

76.1 Liability of Contractor

The Contractor or his Subcontractors or assigns shall follow strictly, all relevant labour laws including the Workmen's Compensation Act and the Employer shall be fully indemnified for all claims, damages etc. arising out of any dispute between the Contractor, his Subcontractors or assigns and the labour employed by them.

77.1 Joint and Several Liabilities

If the Contractor is a joint venture of two or more persons, all such persons shall be jointly and severally bound to the Employer for the fulfilment of the terms of the Contract and shall designate one of such persons to act as leader with authority to bind the joint venture. The composition or the constitution of the joint venture shall not be altered without the prior consent of the Employer.

78.1 Details to be Confidential

The Contractor shall treat the details of the Contract as private and confidential, save in so far as may be necessary for the purposes thereof, and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere without the prior consent in writing of the Employer or the Engineer. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract, the same shall be referred to the decision of the Engineer whose award shall be final.

SECTION VII SPECIFICATIONS - SPECIAL PROVISIONS

SP-01 ACQUAINTANCE WITH SITE

The Contractor shall be deemed to have inspected and examined the Site and its surroundings and information available in connection therewith and before submitting his Bid, as to the form and nature thereof, including the subsurface conditions, the hydrological and climatic conditions, the extent and nature of Works for completion, the means of access to the Site and the accommodation he may require and, in general, shall be deemed to have obtained all necessary information, subject as above mentioned, as to risks, contingencies and all other circumstances which may influence or affect his Contract.

SP-02 DESCRIPTION OF PROJECT

The 220kV Sheikhpura - Ravi Transmission Line transmits bulk power from 500kV Grid Station NGC Sheikhpura to 220KV Grid Statin NGC Ravi. The requirement of damaged OPGW Cable between Tower No. 14A to 14B of said Transmission Line is must for effective communication between NGC Grid Stations.

REPLACEMENT OF OPGW SPAN ON 220KV SHEIKHUPURA-RAVI TRANSMISSION LINE

SP-02.1 Location of Project

The route of the line passes through bare, cultivated land of Punjab Province through the districts of Sheikhpura and Lahore.

SP-03 SITE CONDITIONS

SP-03.1 Site Conditions and Meteorological Data

The Employer does not guarantee the correctness of any data provided herein nor any interpretations, deductions or conclusions relative to subsurface conditions at Site. The Contractor must form his own opinion of the character and type of materials to be excavated. He must make his own interpretations, and satisfy himself by his own investigations and research regarding all conditions works. The Contractor must assume all responsibility for deductions and conclusions as to the nature or conditions of the materials to be excavated and of doing other work affected by the geology at the Site.

SP-04 WORKS

SP-04.1 Works

The intent of these Specifications is that the Works under this Contract should be equal to or superior than those actually described herein. In choosing indigenous materials and their finishes due regard shall be given to the conditions prevailing at Site.

SP-04.2 Extent of Specifications

The extent of the Bidding Documents is to provide for the Works herein specified to be fully complete in every detail for the function designated. All Works which are not specifically mentioned in the Bidding Documents, but which, in the opinion of the Engineer, are usual or necessary for the satisfactory completion of the Works shall be deemed to be included in the Contract Documents and shall be provided by the Contractor without extra cost to Employer.

SP-05 WORKS BY CONTRACTOR

SP-05.1 Scope

The scope of Works includes but not limited to insurance, loading at Employer's Storage Yard, transportation, unloading of material provided by the Employer i.e., OPGW along with associated equipment/ hardware, OPGW accessories and dampers, grounding materials, delivering to site and storing thereof, its installation and all other Works required to construct and complete the followings works.

- i. Installation of OPGW spans from Tower No. 14A to 14B of 220kV Sheikhpura-Ravi Transmission Line along with associated dismantling works.

The scope of works shall also include the loading of OPGW cable and all allied accessories from NGC designated warehouse/ store and install the same at project site, transportation and unloading of dismantled material at Employer's Storage Yard.

The T/Line is a 220kV double circuit twin bundled transmission line

The Works (which are applicable) to be performed under these Specifications are based on the rates provided in the Bill of Quantities and include but not limited to the following:

- i) Provision of all guarantees, insurances, field offices/camps, storage camps, labour, services, Plant and Contractor's tools and equipment (including tension stringing and construction equipment) to construct, complete, test and commission the said transmission line in accordance with the requirements of the Contract Documents.
- ii) Prepare and furnish all drawings and documents.
- iii) Provision of access roads where necessary.
- iv) Clearing right-of-way including disposal of cleared materials.

- v) Check Survey including pegging out and layout of tower locations, spotting / stalking of towers, tower spotting adjustment etc.
- vi) Establishing route alignment of any diversion required and detailed survey not limited to chainage & leveling.
- vii) Preparation of plan & profile drawings (only diverted portion), tower spotting etc.
- viii) Preparation of construction structure lists, sag-tension charts for conductor & Shield wire stringing and construction drawings.
- ix) Surveying of tower sites, tower staking, tower spotting adjustment and establishing correct locations of footings.
- x) Excavation, formation of ramps, grading, blasting, leveling, cutting and backfilling including disposal of surplus/excavated material.
- xi) Furnishing materials for constructing reinforced concrete tower foundations including installation of steel stub angles and tower grounding.
- xii) Ground assembly of tower sections and erection of steel towers.
- xiii) Dismantling of existing conductor along with all accessories, insulators, hardware, dampers etc. complete in all respects, shifting/transporting and properly stacking of the material at designated NGC Warehouse/Store.
- xiv) Installing insulator assemblies for conductors.
- xv) Stringing conductors, overhead shield wire complete with hardware, accessories and dampers.
- xvi) Furnishing and installing tower signs (Aerial Markers, Danger Signs, Number and Phase Plates etc.), and anti-climbing devices.
- xvii) Latitude and Longitude by hand held GPS of each tower location.
- xviii) Testing and commissioning of the aforesaid Transmission Line.
- xix) The security arrangements to be provided by the Contractor for his own crews/staff/storage yards.
- xx) Preparation & submission of monthly progress reports including site photographs, as-built data and drawings including copies on reproducible transparencies and computer compact diskettes (CD/DVD) using AutoCAD.
- xxi) Any other item which is not included here but is necessary for integrated operation of the Transmission Line as advised by the Engineer.
- xxii) Making all necessary arrangements free of cost to access to tower locations on dry patches/land engulfed in river Indus creeks.
- xxiii) Welding of bolts and Painting of tower stub/tower member/plates/bolts or repair of already painted tower as advised by the Engineer.
- xxiv) Preparation of complete as built profile by the contractor. As built profile shall be vetted by Project Manager/ Consultant and will be submitted to concern DG Design Engineering NGC.
- xxv) Preparation of Material Reconciliation Report as per as-built profile.
- xxvi) Any other activity specifically not covered in the scope of work but is required for the completion, testing & commissioning and operation of the overhead line shall be deemed to be included in the scope of work.

NOTE:

- (1) The Contractor is responsible to mobilize sufficient numbers of crews for foundations, tower erection, dismantling and stringing etc. equipped with T&P complete in all respects for smooth execution of each activity. For timely completion of the Project, Contractor is responsible to adhere to the project schedule and ensure that the sufficient resources are available with the crews before commencement of each activity. Detailed methodology and list of T&P shall have to be got approved from the Engineer well before the commencement of each activity. The detail of construction equipment/T&P to be arranged/imported from abroad by the Contractor must be furnished in his Bid.
- (2) In case Contractor fails to arrange the required numbers of crews along with requisite T&P in good working condition for inspection at site prior to commencement of respective activity, Employer has the right, in addition to withhold current payments, terminate the Contract at any stage and to get executed the balance work through other Contractors at the Contractor's risk and cost.

SP-06 DRAWINGS**SP-06.1 Drawings in Contract****SP-06.1.1 Specification Drawings**

The specification drawings contained in Volume II of the Contract Documents show the Specifications and Scope of Works to be performed by the Contractor.

SP-06.1.2 Contractor's Bid Drawings

The Contractor's bid drawings are the drawings prepared by the Contractor for bidding purposes, and shall be part of his Bid.

The specification drawings and Contractor's bid drawings shall not be used for execution of the Works unless specific instructions for such use are given by the Engineer.

SP-06.1.3 Approved Drawings

The Works shall be performed in accordance with the approved drawings.

SP-06.2 Drawings and Other Data to be furnished by the Contractor

All drawings shall be in English language and all dimensions shall be in Metric System. Symbols shall be in accordance with IEC standards. All drawings shall be clearly marked "National Grid Company of Pakistan (NGC) for Installation & dismantling of OPGW Cable and accessories for 220kV

Double Circuit Twin Bundle 220KV Sheikhpura-Ravi Transmission Line. All drawings/data submitted for approval shall conform to ISO paper sizes A0 to A4.

The Contractor shall submit detailed drawings (whichever applicable) as required herein below:

- (i) Plan & profile drawings (only diverted portion) showing spotted towers, construction structure list, sag-tension charts for conductor & OPGW stringing, soil investigation reports and other data as required by the Engineer.
- (ii) Bar bending schedule for various types of foundations/piles.
- (iii) Drawings indicating crossings of transmission line over Railway tracks and Highways.
- (iv) Specifications and details of concrete mix ratio and aggregate grading.
- (v) Sag-templates for tower spotting.
- (vi) Any other information and drawing which may be required for construction purposes.

SP-06.3 Distribution of Drawings

The drawings shall be submitted to the Engineer/Employer within the time given in the Contract or within such reasonable time as the Engineer may require, and in the number as specified hereunder:

Documents	Engineer		Employer/ Project Director	Total
	Head Office	Site Office		
Drawings for approval	3	-	1	4
Approved Drawings	2	2	1	5
Schedules, specifications and other documents/data	2	1	1	4
Construction Drawings	2	6	2	10
Record (As-Built) Drawings	2	-	4	6
Reproducible transparency Record (As-Built) Drawings	1	-	1	2

Record (As-Built) Drawings on computer compact diskette (CD/DVD) using Autocad Software	1	-	1	2
Insurance Certificates	1	1	2	4
Receiving reports	1	1	2	4
Damage reports	1	1	2	4
Erection progress Reports	2	1	2	5
List of Construction Stringing and Erection Equipment	1	1	1	3
Correspondence with Employer	1	1	1	3
Correspondence with Head office of Engineer	1	1	1	3
Correspondence with Site office of Engineer	1	1	1	3
SP-06.3.1 Record Drawings				

In the event of the Works or any part thereof being, with the approval of the Engineer, properly built-in or installed otherwise than in accordance with the Approved Drawings, then the Contractor shall ensure that the Approved Drawings are marked up to show the conditions of the Works as installed and at least two (2) copies of such marked up drawings shall be submitted by the Contractor to the Engineer for approval. One copy of each of marked up drawings approved by the Engineer shall be returned to the Contractor by the Engineer and these shall be used for preparation of the Record Drawings within sixty (60) days after completion of Works of the line. A further copy of each of the marked-up drawings shall be retained by the Engineer for the purpose of checking the Record Drawings.

The Contractor shall furnish to the Engineer two (2) complete sets of all Record Drawings and Data prior to issuance of the Operational Acceptance Certificate. The Contractor shall also furnish to the Engineer one (1) mylar polyester base full size reproducible and one copy on computer compact diskette (CD/DVD) using AutoCAD, of all final Record and other drawings which, in the opinion of the Engineer, may be required for the Works operation and maintenance, for identification of parts and for ordering replacement parts and materials. The mylar reproducible shall be 50/70 microns thick, double matte film, wash off film, printed on the front.

SP-07**INSURANCE OF MATERIALS FURNISHED BY NGC**

The Contractor shall maintain and pay for insurance for Materials furnished by NGC, against loss or damage of the Material caused by, or resulting from but not limited to the following:

- (1) Fire, smoke, explosion, falling objects, impacts by aircrafts or land vehicles, lightning, riot, the escape of water, flood, Act of God, land sliding, vandalism or malicious mischief, windstorm, rain or hailstorm, and
- (2) Theft or attempted theft:

for the full assessed value of the Materials. The insurance shall commence and shall be in force no later than the time of receipt from NGC's stores where the Contractor is required to obtain the Materials. This insurance must remain in force until the contractor clears and finalizes all accounts of Materials furnished by NGC and the Material is returned to NGC. Certificates of such insurance and all renewals thereof shall be filed with the Engineer. The insurance cover shall be obtained from an insurance company approved by NGC.

The Contractor shall be responsible for the safety and protection of Materials from the point where and at the specified time when he is required to obtain the Materials until the Material is returned to NGC. Should a loss be sustained, the Contractor shall replace or repair any loss or damage and complete the Works in accordance with the Contract on a priority basis after such loss or damage without waiting for the settlement of the insurance claim.

SP-08 HANDLING, LOADING AND UNLOADING OF EQUIPMENT & MATERIAL

SP-8.1 Lifting

The method of lifting, type of equipment and type of slings, used for handling the conductor reels are subject to approval by the Engineer. The wooden reels are so constructed as to be supported either on an axle through the arbor hole or by the reel flange. When the reels are lifted by an axle supported from above, a spreader bar must be employed to prevent reel damage by inward pressure on reel flange. In no case shall metallic slings or other metallic equipment shall come in contact with conductor or overhead shield wire or ground wire.

SP-8.2 Slings

If the use of slings is necessary, these shall be of a flexible type and preferably manila rope or other non-metallic materials. The use of steel wire, mesh or chain link slings is prohibited unless they are covered with rubber hose or some similar material.

SP-8.3 Unloading and Storage at the Site

- (1) The Contractor shall unload all Plant and other material at the Site. Items for permanent installations shall be properly stored and shall be protected as required to prevent damage or deterioration of any type. Storage/ Stacking methods shall be such as to cause minimum inconvenience to others and shall be arranged to facilitate inspection.
- (2) All Plant and other material storage shall comply with the requirements of the Specifications or to the approval of the Engineer.

SP-8.4 Ownership of Packing Materials

All packing boxes, reels, shipping containers except those containers which are not the property of the Contractor, planking covers, etc. shall become the property of Employer. All the packing materials shall be handed over to Employer immediately after storage requirements of the Plant or parts including spares thereof and other materials are over.

SP-9 SCHEDULE, PROGRESS REPORTS AND MEETINGS

SP-9.1 Schedule

The Contractor shall carry out the Works in accordance with the dates/periods specified in Appendix-A to Bid. The Contractor shall regularly review the Schedule and notify the Engineer promptly of any revisions which in his view may be required from time to time.

SP-9.1.1 Form of Construction Schedule

The Schedule shall be a detailed CPM (critical path method) type, time scaled according to calendar dates and Project month numbers. The CPM for planning, scheduling, and controlling will be used for the Contract. The Contractor shall submit a schedule showing the logical sequence in which the Plant will be carried out in sufficient detail to satisfy the Engineer that the Plant is thoroughly planned and meets all the requirements of the Contract Documents.

SP-9.2 Progress Meetings

- (1) Soon after the date of signing of Contract, the Engineer will, with the approval of Employer require a conference with Employer and the Contractor at a place mutually agreed upon, to discuss progress monitoring and proper execution of Contract.
- (2) At monthly intervals or from time to time during the execution of the Contract, the Engineer may call meetings, either in his offices or at the Contractor's offices or Employer's office as is deemed necessary for the purpose of progress monitoring and proper execution of the Contract.

- (1) As required by the Engineer, responsible representatives of the Contractor shall attend such meetings.
- (2) All expenses incurred by the Contractor for attending such meetings shall be borne by the Contractor and shall not be reimbursable.

SP-10 SITE WORKS

Attention is drawn to the obligations of the Contractor to make his own arrangements at his own expense for Works provided to his employees. Any cost incurred by the Contractor in respect of any of such Site Works under the Contract shall be deemed to be included in the rates and prices in the Price Schedules and no separate payment, therefore, will be made to the Contractor.

SP-10.1 Accommodation

- (1) The Contractor shall provide and maintain at his cost residential accommodation and transportation Works for his own use.
- (2) The Contractor shall provide and maintain such housing accommodation and amenities as he may consider necessary for all of his supervisory staff and labour employed for the purposes of or in connection with this Contract including all fencing, electricity supply, sanitation, cook, houses, fire prevention, water supply and other requirements in connection with such housing accommodation or amenities.

SP-10.2 Offices

The Contractor shall arrange and maintain his offices at his own cost.

SP-10.3 Work-yards and Storage Areas

- (1) No storage site shall be provided by Employer to store Plant and other material. The Contractor shall, furnish all the necessary services and be responsible for the construction and maintenance of the necessary construction camps, offices and stores; and perform all other work necessary for completion of the Works described herein in strict conformance with these Specifications.
- (2) The Contractor shall provide his own watchman service to ensure security and safety of the Plant and other material prior to Employer taking over the Works.

SP-10.4 Temporary Buildings

- (1) The Contractor shall provide and maintain all temporary structures required including warehouses, change houses for workmen, sheds, etc. He shall also

provide his own field office complete with telephone so that he or his official representative can be contacted by Employer and/or Engineer at all times.

- (2) Such temporary buildings and/or utilities shall remain the property of the Contractor and shall be removed by him at his expense upon the completion of the Works and the Site reinstated to its original condition, all to the approval of the Engineer.

SP-11 QUALITY CONTROL

The Contractor's Quality Control Department shall review all contract and specification requirements and ensure that they are understood.

Upon the award of the Contract, the Contractor, NGC and the Engineer shall establish mutually acceptable quality control and inspection procedures between the Contractor and the Engineer and indications are to be given at that time by Contractor as to how the agreed procedures will be implemented.

All Works covered by the Contract and the inspection thereof by the Contractor, shall be subject to surveillance and/or further inspection by NGC and/or the Engineer or by their authorized representative for which purpose the Contractor (or Sub-Contractor) shall:

- (1) Demonstrate to the satisfaction of the Engineer or his authorized Representative that the Works meets the requirements of the Contract.
- (2) Not cover up or put out of view Works until the Engineer or his authorized representative has been notified and release of Works has been obtained.
- (3) Afford full opportunity for the Engineer or the Engineer's Representative to examine and measure any work which is about to be covered up or put out of view and to examine foundations before permanent work is placed thereon.
- (4) Give due notice to the Engineer's Representative whenever any Work or foundations is/are ready or about to be ready for Examination.

SP-12 URGENT REPAIRS

If by reason of any accident or failure or other event occurring to in or in connection with the Work or any part thereof either during the execution of the Work or during the Period of Guarantee any remedial or other Work or repair shall in the opinion of the Engineer or the Engineer's Representative be urgently necessary for security and the Contractor is unable or unwilling at once to do such Work or repair, NGC may employ its own or other workmen do such work or repair as the Engineer or the Engineer's representative may consider necessary. If the Work or repair so done by NGC is Work which in the opinion of the Engineer the Contractor was liable to do at his own expense under the Contract all costs and charges properly incurred by NGC in

so doing shall on demand be paid by the Contractor to NGC or may be deducted by NGC from any money due or which may become due to the Contractor.

SP-13 MEASUREMENT FOR PAYMENT

The measurement for payment and payment for the various items of Price Schedules shall be as follows:

(a) Construct Right-of-Way Road

No payment will be made for the construction of a right-of-way road and access routes. The cost of such road and access routes, if constructed, shall be deemed to be included in other prices in the Contract.

Employer will assess the compensation for unavoidable crop damage that occurs on the right of way in cultivated areas and will pay the compensation amount.

(b) Clearing Right-of-Way

Measurement for payment will be made horizontally along the center line of right-of-way cleared and disposal completed.

Payment will be made based on the unit price quoted in Price Schedules. The payment shall include, but not be limited to the brushing out the centerline, tower locations and conductor pulling sites within 25 meters on each side of the centerline. Trees over 2.5 meters in height which constitute a hazard or danger to the transmission line, or whose tops are within 6 meters of the 75°C final conductor position shall be removed.

(c) Check Survey

Measurement for payment will be made on the check survey carried out as given Technical Provisions.

Payment will be made based on lump sum basis after fulfilling all requirements given in Technical Provisions.

(d) Survey (Only for diverted portion)

Measurement for payment will be made horizontally along the center line of the line route.

Payment will be made based on the unit price quoted in the Price Schedules after the approval by Engineer of detailed survey, plan and profile drawings, and construction structure list. The unit price shall include but not be limited to the route establishing, detailed survey, route maps, plan tabling, profile preparation, tower spotting, construction structure list and all other work necessary for the completion of this phase of work.

(e) **Reinforced Concrete Foundations (N/A)**

Measurement for payment will be made for each type of foundation installed as shown on the approved relevant construction drawings for the various foundations. Bid drawings are firm & final and no change is acceptable except from Engineer.

The quoted unit price shall include, but not be limited to tower staking, the cost of furnishing all labour, equipment, materials (including concrete and reinforcement etc.) site leveling, blasting/cutting/grading of tower site, excavation, shuttering, dewatering, shorting, forming, reinforcing, concreting, curing, backfilling, installing stub angles, tower grounding, setting and all other associated Works to produce finished foundations.

(f) **Dismantling of Steel Towers (N/A)**

Measurement for payment will be made for each type of component dismantled as shown on the relevant drawings for the various towers.

Payment will be made based on the unit prices quoted on per Tower basis in the bid for each type of component dismantled of all tower types. The unit prices shall include, but not be limited to, the cost of all labor, equipment, dismantling of complete tower (without damaging any component), bundling/packing, loading, transporting, unloading & properly staking at designated warehouse and all other associated work necessary for the completion of this phase of the work.

Note: Dismantling work will be carried out in the presence of representative of concerned formation of NGC, for which the contractor will give advance notice to NGC for supervision and inspection.

(g) **Erection of Steel Towers (N/A)**

Measurement for payment will be made for each type of component installed as shown on the relevant drawings for the various towers.

Payment will be made based on the unit prices quoted on per Tower basis in the bid for each type of component installed of all tower types. The unit prices shall include, but not be limited to, detailing of tower fabrication drawings supplied by Employer, the cost of all labour, equipment, requisitioning, loading, transporting, from site storage areas to the sites, erecting together with bolts, nuts, washers, stepbolts, including back bolting and punching of nuts and bolts and all other associated work necessary for the completion of the towers ready for installation of overhead alumoweld shield wire, OPGW and conductors thereon.

(h) **Welding of Nuts & Bolts (N/A)**

Measurement for measurement will be made for each tower.

Payment will be made on the unit price quoted for each tower. The unit prices shall include, but not limited to welding of nuts & bolts up to 8.0 m height and application of galvanox as specified in technical provisions and price schedule.

(i) **Dismantling of Existing OPGW Cable & associated hardware etc.**

Measurement for payment will be made horizontally along the center line of the line route.

Payment will be made based on the unit price quoted in the Price Schedules. The unit prices shall include, but not be limited to, the cost of all labour, equipment, dismantling including but limited up to the removal of spacer dampers for conductor & stock bridge vibration dampers for earth wire, dismantling of conductor, earth wire & jumpers including spacer dampers, removal of accessories for conductor and earth wire along with associated equipment, removal of hardware & insulator strings, and all other associated work necessary for the completion of this phase of the work.

(J) **Stringing of OPGW Cable and all allied accessories and joint boxes**

Measurement for payment will be made horizontally along the center line of the line route.

Payment will be made based on the unit price quoted in the Price Schedules. The unit prices shall include, but not be limited to, the cost of all labour, equipment, requisitioning, loading, transporting, distributing, stringing including but limited up to the installation of insulator accessories for conductor; spacer dampers for conductor, sagging, clipping-in, dead-ends, jumpers including installation of spacer, together with all hardware as shown on the relevant drawings, and all other associated work necessary for the completion of this phase of the work.

(K) **Cost of Dismantled Stringing Material**

Measurement for cost of dismantled material will be made horizontally along the center line of the line route.

Cost of the dismantled material handed over to the contractor will be deducted from the invoices of the contractor. (Not Applicable as all material will be handed over by the contractor to NGC Authorized Store)

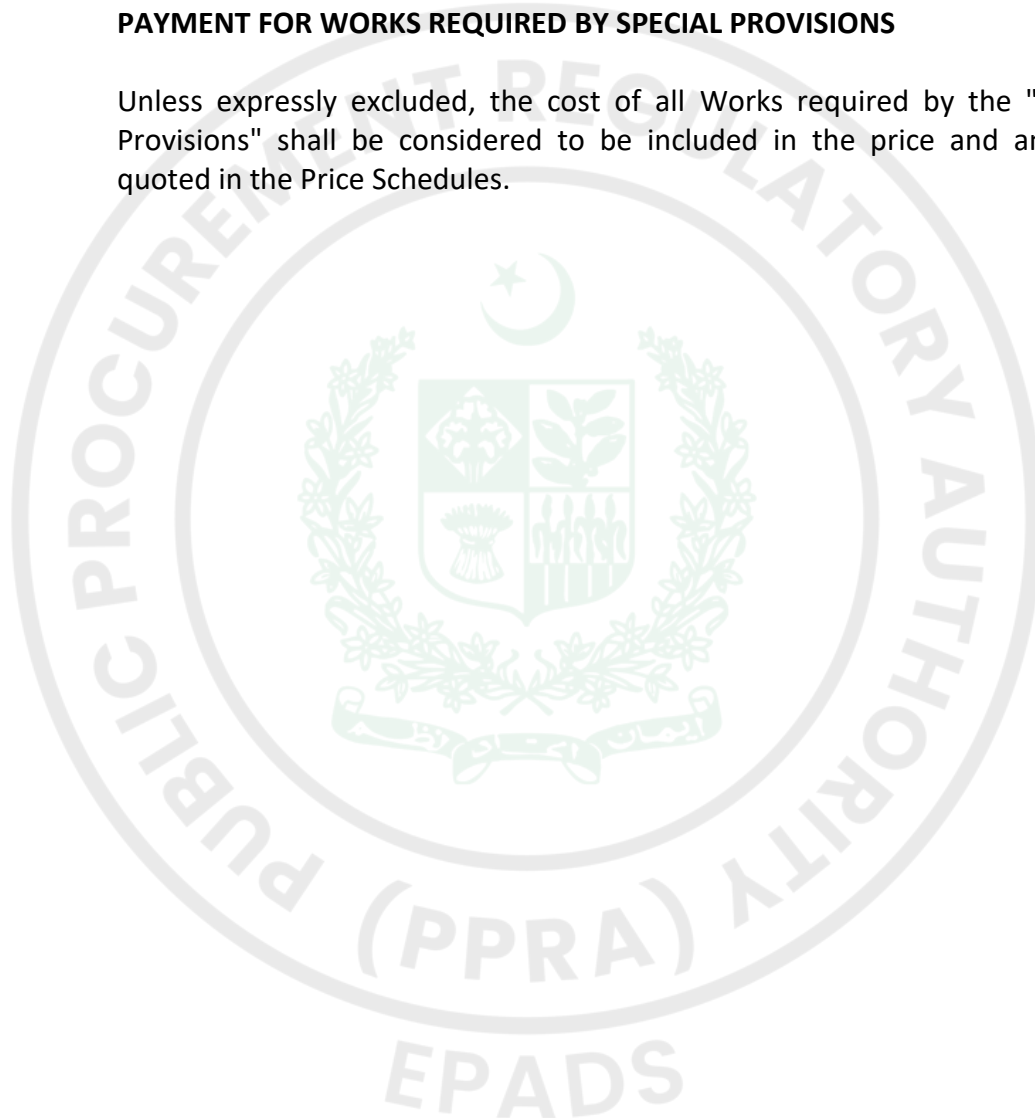
(L) Testing & Commissioning

Measurement for payment will be made on successfully testing & commissioning of transmission line.

Payment will be made based on the lumpsum amount quoted in the Price Schedules. The lumpsum amount shall include but not be limited to successful testing & commissioning of transmission line and all other associated work necessary for the completion of this phase of the work.

SP-14 PAYMENT FOR WORKS REQUIRED BY SPECIAL PROVISIONS

Unless expressly excluded, the cost of all Works required by the "Special Provisions" shall be considered to be included in the price and amounts quoted in the Price Schedules.



1. SPECIFICATIONS - TECHNICAL PROVISIONS

1.1 General

(1) Clearing Right-of-Way

Right-of-Way clearing shall be restricted to the minimum necessary for the safe construction and operation of the line. Clearing shall generally consist of brushing out the center line, tower locations and conductor pulling sites within 25 meters on each side of the center line. Trees over 2.5 meters in height which constitute a hazard or danger to the transmission line, or whose tops are within 6 meters at 75°C final conductor sag position, shall be removed.

The clearing of desert vegetation shall be restricted to that required for placement of footings and for the assembly and erection of towers and wire pulling Site.

No clearing will be allowed in orchards or other areas of fruit bearing trees, except as specifically approved by the Engineer.

The cleared materials will be the property of the Land Owner. If any disposal of cleared material is required, it will be disposed of by burning or other methods approved by the Engineer.

(2) Survey and Profiling

The technical specifications cover detailed survey including route alignment, profiling, tower spotting and contouring. The scope of work inter-alia shall include the following:

Route alignment using Google Maps, Survey of Pakistan Maps and Walk over survey etc.

Detailed Survey using RTK, GPS, DGPS, Total Stations, long range scanners & Digital theodolites of reasonable accuracies.

Digitized contouring at hilly/undulated locations.

Preparation of Survey reports including estimation of Bill of Quantities, identification and explanation of route constraints, infrastructure details available enroute etc.

All the bidders shall present their proposed methodology for execution of the work as per specifications and details of the equipment and facilities including soft wares available with them.

The Contractor must note that the Employer shall not be responsible for loss or damage to properties, trees etc. due to their work during survey. The Contractor shall indemnify the Employer for any loss or damage to properties, trees etc. during the survey work

The Contractor should note that Employer will not furnish the topographical maps prepared by survey of Pakistan but will render available assistance that may be required in obtaining these by providing letters of recommendation to the concerned authorities.

The Bidders shall give along with their bid clause by clause commentary indicating their confirmation/comments/observations in respect of all clauses of this functional requirements.

The work shall be carried out by the Contractor using modern surveying techniques i.e. RTK. The bidder shall indicate in his offer, the detailed description of the procedure to be deployed. The details of the equipment & facilities including software's for image processing, computer aided tower spotting etc. available with the bidder or his associates shall also be furnished with the bid

After carrying out the detailed survey, the Contractor shall estimate complete BOQ of the transmission lines and submit the same to the Employer.

The bidders are advised that while making bid proposals and quoting prices, all technical provisions may appropriately be taken into consideration. The bidder shall complete all the schedules and annexures in the bid proposal sheets, technical data sheets specified elsewhere.

Route Alignment

Route Alignment shall be done using Google Maps and Survey of Pakistan Maps (scale 1:50,000). After a study of these maps, alternate routes will be identified & marked within 5 km of the beeline.

Walkover survey will be carried out on the alternate routes to obtain first-hand information of various important field data required for transmission line works and observe features on the ground which may not be clearly available in the maps such as Power lines, Type of terrain and nature of soil strata, expanding villages and towns, rich gardens and plantations, forests and high tree areas, national parks and wildlife sanctuaries, archaeological monuments, aerodromes and prohibited areas etc. Walkover survey means going on foot over the area covering the route however vehicle may also be used wherever the terrain permits and where long distances can be seen without obstacles.

Then a comparative evaluation of the alternate routes will be done, inter alia considering, route length, number and type of angle points, nature and number of major crossings, deviation in the line due to civil/military aerodromes and other industrial installations, approach to the line in general for construction, reaches through protected or reserve forests and continuous long stretches in paddy fields etc.

Based on this evaluation, the Contractor will propose the optimal route alignment and, along with it, will provide all information/data /details collected. The Contractor will arrange joint site visits with the Employer's representatives for field verifications. Final route alignment will be selected with mutual consensus of the Contractor and Employer.

Final digitized route alignment drawing with latest topographical and other details/features up to 5km on both sides of selected route alignment shall be submitted for the Employer's approval along with report containing other information/details as mentioned above (both in hard and soft copies). Changes in the route alignment, if any, during detail survey, shall be incorporated in the final digitized route alignment drawings.

Requirement of Transmission Line Routing

The alignment of the transmission line shall be most economical from the point of view of construction and maintenance.

Routing of transmission line through protected /reserved forest area should be avoided. In case it is not possible to avoid the forests or areas having large trees completely, then keeping in view of the overall economy, the route should be aligned in such a way that cutting of trees is minimum.

The route should have minimum crossings of Major Rivers, Railway lines, National / State highways, overhead EHV power lines and communication lines.

The number of angle points shall be kept to a minimum.

The distance between the terminal points specified shall be kept shortest possible, consistent with the terrain that is encountered.

Marshy and low lying areas, river beds and earth slip zones shall be avoided to minimize risk to the foundations and towers.

It would be preferable to utilize level ground for the alignment.

Crossing of power lines shall be minimum. Alignment shall be kept at a specified distance from existing lines considering RoW and tower falling distances.

Crossing of communication line shall be minimized and it shall be preferably at right angle. Proximity and parallelism with telecom lines shall be eliminated to avoid danger of induction to them.

Areas subjected to flooding such as nalla shall be avoided.

Restricted areas such as civil and military airfield shall be avoided. Care shall also be taken to avoid aircraft landing approaches.

It is desirable to take the line as near the paths and roads as practicable without unduly increasing the length of the line so as to facilitate transportation of material during construction and the patrolling / maintenance of the line. Where the line cannot be routed near paths / roads economically, care shall be taken to see that easy access is possible at every 5 to 8 km. It shall be ensured that all angle / tension points are approachable to facilitate easy transportation of stringing equipment during construction and for maintenance / breakdowns.

The line shall be aligned suitably so that it can be diverted / looped in looped out to cater for possible future loads / sub stations along the route.

In general, large angles in the line are to be avoided wherever possible. The magnitude of the angle should be small as far as possible and should never be more than 60 degrees. Angle points should be selected such that shifting of the points within 100 m radius is possible at the time of construction of the

The route of the transmission line is to be so located that, as far as possible, it is protected from high winds and falling trees & branches. In hilly tracks, the line is to be routed, as far as possible, along the side of the hills or through valleys rather than over high points. However, a route of the line very close to steep slopes of hills be avoided as far as possible as there may be difficulty in obtaining lateral (side) clearance to ground for conductors. Also, there may be overhanging / loose boulders which may roll down and damage the line.

Certain areas such as quarry sites, rich plantations, gardens & nurseries which will present the Employer problems in acquisition of right of way and way leave clearance during construction and maintenance should be avoided.

The line routing should avoid large habitations, densely populated areas, forest, animal/ bird sanctuary etc., to the extent possible.

The areas requiring special foundations and those prone to flooding should be avoided.

Detailed Survey

The detailed survey shall be carried out using RTK, DGPS, Total Stations, digital theodolites etc. along the approved route alignment, inter alia including the following

Digitized profiling along the selected route along with plan details using

Power Line Systems Computer Aided Design and Drafting (PLS-CADD).

Computer aided tower spotting & optimization.

Route Marking

The route of the transmission line shall be recorded using DGPS of positional accuracy less than 3mtr.

The co-ordinates of all the angle points as well as other important crossings, landmarks etc. shall be recorded using DGPS for easy relocating. In addition the angle point locations shall be marked using marking stones of size 200 x

200 x 1000 mm, with approved marks including painting above the ground level.

At the starting point of the commencement of route survey the coordinates shall be recorded. The co-ordinates of the location of the survey instrument shall also be recorded. Further, the co-ordinates at prominent position at intervals of not more than 750m along the transmission line to be surveyed up to the next angle point shall also be recorded. Wherever the line alignment crosses the EHV line, railway line or main roads, the Contractor shall record co-ordinates on the points of crossing. Wherever line route alignment passes over permanent land marks such as rock, boulders, culverts etc. suitable white paint marks with directional and NGC markings shall be made and co-ordinates recorded.

Profiling

Detailed survey and profiling will be carried out for complete corridor, as described in clause 3.5 (h) of this specification, using modern surveying equipment such as RTK equipment, long range scanners and total stations etc. Density of survey data collection should be sufficient to ensure that proper surface imitating actual ground situation of the surveyed corridor can be generated in PLS-CADD. In any case, distance between any two points of survey data grid should not be more than 05m. For hilly/undulated terrain, this distance should be reduced appropriately to ensure that a representative surface is generated in PLS-CADD. R/L's at other undulations in the corridor and other details such as crossings, building & structure, trees & other infrastructure etc. shall also be recorded. Areas along the route, which in the view of the Contractor, are not suitable for tower spotting, shall also be

marked. Recorded survey data shall be exported to MS-Excel file format and submitted along with profile for review of the Engineer.

The complete profiling details shall be digitized and the data shall be prepared & stored in the format compatible to computer-aided tower spotting software.

Route plan and longitudinal profile, commonly referred to as 'Route Profile' or simply 'Profile', will be prepared/ plotted on square paper rolls of graphed tracing paper (1mm / 5mm / 1cm). The profile is plotted to a scale of 1: 2000 horizontal and 1:200 vertical. The profile shall progress from left to right. The height of the sheet shall be taken so that the ground profile and the towers, including extensions can be fully shown. For hilly terrain, greater height of the sheet may be taken, or the sections may be plotted on separate sheets. The length of each sheet may be taken so that approximately 5 km of the line route can be plotted. A gap of 5 to 10 cm shall be kept between sections.

The profile shall show the longitudinal profiles along the center line of the transmission line route and also the cross section profile wherever appreciable difference in level exists with reference to the center line level. The angle of line deviation, duly marked left (L) or right (R) as the case may be, shall also be shown.

Plan table drawing shall show the details of all objects lying within 50 meters on both sides of the center line of the route. Objects and their distances along the route within 50 meters on both sides of the center line, nearby villages, important roads or rivers shall be marked on the drawing.

Crossing details of power lines, roads, railway lines, canals or rivers etc. shall be marked as clearly as possible. Levels of roads, canal and river embankments, maximum water / flood levels, railway top levels and heights of supports / lines being crossed, and shall be shown in the offsets part of the profile. All trees coming within the zone of the right of way and which need to be cut / trimmed shall also be indicated.

Printed/plotted output of the digitized profiling shall be submitted by the Contractor to Employer for review before taking up computer-aided tower spotting.

Optimization of Tower Location/Tower Spotting.

Optimization of tower locations shall be done by the Contractor using computer-aided tower spotting software PLS-CADD and NGC's recommended tower family. In order to verify the results of computer aided tower spotting, the Contractor shall furnish sample calculations and manual tower spotting drawings for some typical sections.

The sag-tension characteristics of the conductor as well as tower spotting data shall be furnished by the Contractor for the Employer's approval before execution. Sag template curves, shall be prepared by the Contractor on acrylic sheet indicating cold curve, hot curve, ground clearance curve and support footing curve and the same shall be submitted to the Employer.

Tower Spotting

While, profiling and spotting the towers the following shall be borne in mind.

Extension

An individual span shall be as near to the normal design span as possible. In case an individual span becomes too short with normal supports on account of undulations in ground profile, one or both the supports of the span may be extended by inserting standard body / leg extension.

Section Length:

The number of consecutive spans between the section points shall not exceed 13 spans or 5km in plain terrain and 10 spans or 3 km in hilly terrain for double circuit 500kV line. The number of consecutive spans between the section points shall not exceed 12 spans or 4.5 km in plain terrain and 10 spans or 3 km in hilly terrain for 220kV line. The number of consecutive spans between the section points shall not exceed 14 spans or 4.5 km in plain terrain and 10 spans or 3 km in hilly terrain for 132kV line. A section point shall comprise of tension point with angle type tower.

Loading

There shall not be any upward force on suspension towers under normal working conditions and the suspension towers shall support at least the minimum weight span as provided in the designs. In case uplift is unavoidable, it shall be examined if the same can be overcome by adding standard body extensions to the towers failing which tension towers designed for the purpose shall be employed at such positions.

Road Crossing

The ground clearance at the roads under maximum temperature and in still air shall be such that even with conductor broken on adjacent span, ground clearance of the conductor from the road surfaces shall not be less than 10.0m for 500kV and 8.0m for 220kV and 132 line. At all national highways, tension towers shall be used and crossing span shall not be more than 350 meters.

Railway Crossings

All the railway crossings in the route of transmission line shall be identified by the Contractor. At the time of detailed survey, the railway crossings shall be finalized as per the regulation laid down by the Railway Authorities. Following are important considerations in this regard.

The crossings shall be supported on angle tower on either side depending on the merits of each case.

The crossing shall normally be at right angle to the railway track.

The minimum distance of the crossing tower shall be at least equal to the height of the tower plus 6m away measured from the center of the nearest railway track.

No crossing shall be located over a booster transformer, traction switching station, traction sub-station or a track cabin location in an electrified area.

Minimum ground clearance above rail level of the lowest portion of any conductor under condition of maximum sag shall be maintained at 11.75m for 500 kV, 11.28m for 220kV line and 10.97 for 132kV line.

The crossing span shall be limited to 300/250 meters for 500kV/220kV/132kV lines.

River Crossings

In case of major river crossing, towers shall be of suspension type and the anchor towers (Balancing towers) on either side of the main river crossing shall be used with zero-degree deviation. Clearance required for navigation shall be provided. For non-navigable river, clearance shall be reckoned with respect to highest flood level (HFL).

Power line Crossings

Wherever the line is to cross another power line, it will be ensured that higher voltage line will pass above the lower voltage line. Minimum clearance in between lines when crossing each other will be as per NGC standard. The angle of crossing has to be preferably 90 degrees and at any time should not be below 60 degrees.

The crossing of the new line over an existing power line is preferably done in the middle of the span between towers of existing power line where there is maximum sag of the conductor. When the line to be constructed is crossing another important EHV line for which shutdown may be difficult, suspension towers in combination with angle / dead end towers, with extensions as required, may be used.

The crossing of the new line below an existing power line shall be done at locations where adequate ground clearance for the new line and the specified clearance from the existing power line are available. Such crossing shall preferably be in the mid span between towers / structures of the new power line, where there is maximum sag of the conductor, and near one of the towers of the crossing span of the existing line for taking advantage of the higher height of the conductors. These measures reduce the requirement of increasing the height of the existing line for obtaining the requisite clearance.

Details Enroute

All topographical details, permanent features, such as trees, building etc. 25m (Total-50 meter) for 500kV, 17.5m (Total- 35 meter) for 220kV line and 13.5m (Total- 27 meter) for 132kV line on either side of the alignment shall be detailed on the profile plan. All the topographical details (trees, buildings, permanent structures, including open land) shall be included in the report.

Clearance from Ground, Building, Trees etc.

Clearance from ground, buildings, trees and telephone lines shall be provided in conformity with NGC standard as amended up to date.

The Contractor shall also intimate the Employer, his assessment about the likely amount of tree & crop compensation etc. required to be paid by the Employer during execution stage. This assessment shall be done considering prevailing practices/guidelines, local regulations and other inquiries from local authorities.

Right of Way

Following right of way width shall be maintained taking into consideration the theoretical requirement of right of way and transport requirements of maintenance:

Transmission Voltage	Recommended Width of Right of Way
132 kV	27 meters
220 kV	35 meters
500 kV	50 meters

Preliminary Schedule

The profile sheets showing the locations of the towers together with preliminary schedules of quantities indicating tower types, wind & weight spans, angle of deviation, crossing & other details etc. shall be submitted by the Contractor for review & approval by Employer.

Detailed Survey of Tower Locations.

The detailed survey shall be conducted for spotting the tower locations on ground conforming to the approved profile and tower schedule.

The co-ordinates of all the tower locations shall also be recorded using DGPS of positional accuracy less than 3m. The position of all tower locations shall be marked in the final digitized route alignment drawing with relative distance from any permanent benchmark in the area.

The Contractor shall also collect required data at each tower location in respect of soil strata, ground water level, history of water table in adjacent areas/surface water and classify the suitable type of foundation at each location.

Contouring at hilly / undulated locations

The levels up or down of each pit center with respect to center of tower location shall be recorded at intervals of 2m using RTK / total stations / DGPS / digital theodolite and digitized contour plans shall be made. Based on the digitized elevation plans, the quantities of benching & protection work vis-a-vis possible unequal leg extensions shall be optimized using suitable computer-aided techniques/ software's. Required tower and foundation details, cost data for comparative evaluation of benching & protection work vis-a-vis unequal leg extensions shall be provided by the Contractor to the Employer before execution stage.

The changes desired by the Employer in the preliminary tower schedule or as may be required based on detailed survey of tower locations & contouring by the Contractor, shall be carried out by the Contractor and the final tower schedule shall be submitted for approval of Employer. The tower schedule shall show position of all type of towers, span length, type of foundation for each tower, benching & revetment requirement, unequal leg extensions, deviation at all angles, crossing and other details etc.

Survey Methodology & Precision

All elevations shall be referenced to benchmarks established by the survey of Pakistan. Leveling operations shall begin and end at benchmarks approved by the Employer.

During the leveling of the profile, check surveys will be effected at intervals not exceeding 50 km. With benchmarks of known elevations. The difference in elevations as surveyed by the Contractor and as declared by Survey of Pakistan for these benchmarks shall not exceed the precision required for 3rd order surveys $e \leq 24k$ where k is the distance between benchmarks in km and e is the difference between elevations in mm.

In the absence of suitable benchmarks, the leveling shall be done by two independent leveling parties working in opposite directions along the same line. The difference in elevations between the two surveys shall not exceed the precision required for 3rd order surveys as stated above.

All-important objects and features along the transmission line centerline (railways, highways, roads, canals, rivers, transmission lines, distribution lines, telephone lines etc.) shall be surveyed and located with a positional accuracy of 1:2000 between points of known horizontal position.

3) Detailed Check Survey

The indicative drawing showing the line route and substation's locations are attached in Volume 2 of Specification Drawings.

The Employer has already carried out the detailed survey of transmission line along the selected route and prepared the profile / plan tabling which shall be handed over to the Contractor after award. The Contractor shall conduct the check survey to locate tower locations on ground conforming to the approved profile and tower schedule and to ensure that ground features, angle deviations, levels, distances, clearances, crossings etc; as shown on profile correspond with actual features at site. Any variance shall be noted and marked by the contractor. The requirement of tower site leveling and revetment work, if required, shall also be marked by the Contractor on the profiles. Locations, where benching might be required, shall also be identified. Contractor shall make contour measurements along with the calculations for the volume of benching and revetment, so that a decision can be made whether to accept benching and/or use unequal leg extensions. The co-ordinates of all the tower locations shall also be recorded using GPS/DGPS of positional accuracy less than 1m for easy relocating which shall be incorporated in the final digitized route alignment/profile.

After completing the check survey, profiles shall be re-submitted to the Employer for approval along with check survey report.

The Contractor will be responsible for the correct setting of towers as shown in approved profiles. If towers after erection are found to be out of the approved alignment/position in the profile, the Contractor will dismantle and re-erect them correctly fully at his own cost and without extension of time.

The Contractor shall be responsible to carry out survey including pegging out and layout of tower locations, spotting/staking of towers and preparation of construction structure list.

The work to be done by the Contractor shall include but not limited to the following:

- (i) Validation & updating of the already prepared plan & profile drawings and construction structure lists (to be provided to the contractor after award of contract) of the proposed transmission line route with the prevailing field developments. Staking (centre and reference pegs) of the tower locations which have to be concreted are included in the Contractor's scope.

Latitude and longitude by hand held GPS of each angle location should be collected and submitted to the Engineer.

- (ii) In case of route diversion, detail survey shall be conducted and approved by the Engineer, the Contractor will carry out investigation of diversion route alongwith necessary plan tabling of the area and shall make necessary modification and establish the terminal points, the angle locations, road crossing and other points of interest as advised by the Engineer or his authorized representative.
- (iii) The contractor shall also be responsible to prepare plan tabling and profile drawings, tower spotting and construction structure list of any diversion route.
- (iv) The Contractor shall obtain necessary rules and regulations. Survey of Pakistan maps will be shown to the successful bidder in the office of the Engineer when requested.
- (v) The line route will be marked on the ground with permanent concrete markers. The Contractor will install the Concrete markers of at least 130 x 150 mm at top and bottom with a height not less than 1m. The markers shall be buried 0.5 m below existing ground level. The markers shall be white washed and a red point shall be made on the top of the marker to indicate the exact center of the line. This point shall be further encircled by red paint.

(4) Survey Report

Complete BoQ of the transmission lines as per the technical specifications shall be furnished in the survey report.

Each angle point locations shall be shown with detailed sketches showing existing in the close vicinity permanent land marks such as specific trees, cattle shed, homes, tube wells, temples, electric pole/tower, telephone pole, canal, roads, railway lines etc. The relative distance of land marks from the angle points and their bearings shall be indicated in the sketch. These details shall be included in the survey report.

Information w.r.t. infrastructure details available enroute, identification and explanation of route constraints, etc. shall also be furnished in the Survey report and shall inter-alia include the following:

Information regarding infrastructural facilities available along the final route alignment like access to roads, railway stations, construction material sources (like quarry points for stone, sand and availability of construction water), labor, existing transport facilities, fuel availability etc. shall be furnished in the survey report.

All observations which the Contractor thinks would be useful to the construction of the transmission lines mentioned under scope of work are to be reported.

Suggestions regarding the number of convenient zones (line segments/portions) in which the entire alignment can be divided keeping in view the convenience of line construction, operation, maintenance etc. are to be given.

Suggestions regarding location for setting up stores during line construction in consultation with Employer representatives shall also be provided by Contractor.

Working months available during various seasons along the final route alignment, with period, time of sowing & harvesting of different type of crops and the importance attached to the crops particularly in the context of way leave problems and compensation payable shall be stated by the Contractor.

Availability of labor of various categories and contractors of civil works shall also be reported.

Some portions of the line may require clearance from various authorities. The Contractor shall indicate the portion of the line so affected, the nature of clearance required and the name of concerned organizations such as local bodies, municipalities, Irrigation Department, Railway Authorities, Forest Authorities, Military and Defense Authorities etc.

4.1 Sub Soil Investigation

General Information & Scope of Work

The scope of work includes detailed soil investigation at various selected tower locations as approved/desired by the Engineer such as selected angle points, railway crossings, road crossings, power line crossings, river crossings etc. In addition, soil investigation may be required to be carried out at other locations at the discretion of the Engineer depending upon the soil strata, terrain and other factors.

These specifications cover the technical requirements for a detailed Geotechnical Investigation and submission of a detailed Geotechnical Report.

Mobilization of all necessary tools and equipment, provision of necessary engineering supervision and technical personnel, skilled and unskilled labor, etc. as required to carry out the entire field investigation as well as laboratory tests, analysis and interpretation of data collected and preparation of the Geotechnical Report.

Contractor shall also collect data regarding variation of subsoil water table along the proposed line route.

The Work specified herein is to determine the type and geotechnical characteristics of the foundation strata to the specified depth and location. This is to be accomplished through rotary drilling, field testing, ground water observations, soil sampling and laboratory testing. The location along with depth of investigation boreholes on the ground shall be established by the Contractor in accordance with the Drawings and from reference points approved by the Engineer as per requirement.

The Geo-technical investigations and report shall conform to all International ASTM Standards, Specifications (shall be the latest editions including all applicable official amendments and revision)

The Contractor shall have at site, at all times only qualified experienced geologist/engineer who will conduct and supervise drilling/logging activities. Hand held GPS should be available at investigation site for verification of bore hole/test pit location by the Engineer.

The Contractor shall also measure soil resistivity at each borehole.

The Contractor shall propose suitable foundation design on the basis of soil investigation. If it is determined that a new foundation design, other than those being already used by NGC, is required depending on the soil investigation results, the Contractor would design such new foundations types such as grillage foundation, undercut foundation, rock-anchor foundation, augured foundation etc.

4.2 Method of Drilling

Drilling shall be done by rotary including rock coring method by means of which a hole of specified diameter is extended in depths. Use of bottom discharge drilling bit shall not be permitted. The Contractor shall only be allowed to use percussion method where gravels and boulders are encountered after the approval by the Engineer.

4.3 Drilling of boreholes in flowing water conditions

Drilling may be carried out under water conditions. During the investigation, the Engineer may change such locations to land drilling depending upon the prevailing water way conditions.

4.4 Test Pit

The test pits shall be excavated at the locations as specified by the Engineer. Excavations of test pits shall be made to the depths as directed by the Engineer by manual labor and with the help of suitable digging tools. Test pits shall generally be excavated to a depth of about 3 meters below the ground surface or bed rock whichever is encountered earlier. Undisturbed black (30cm x 30cm x 30cm) sample shall also be extracted from each test pit. The dimension at the bottom of pit shall not be less than 1.5 m x 1.5 m. After field testing and sampling, the test pit should be backfilled as instructed by the Engineer.

4.5 Drilling Fluid

The drilling fluid used for rotary drilling shall be clean water clear from suspended sediments. The Contractor may use the natural or commercial drilling mud/bentonite slurry as drilling fluid.

4.6 Casing of Boreholes.

Casing of a required size allowing entry of sampling tools shall be used in conjunction with drilling to wall the boring to the bottom of the hole.

The casing shall be made of cylindrical steel pipes and shall have sufficient strength so as to maintain position and shape during drilling operations.

The casing may be omitted only where it can be shown to the satisfaction of the Engineer that sampling operations without the casing will not entrain soils from an elevation higher than the depth at which field testing or sampling is to be made.

It shall be the Contractor's responsibility to pull out casing from the bore holes after its completion for which no extra payment shall be made.

4.7 Field Testing

Field testing shall include Standard Penetration Test. Standard Penetration Test shall conform to ASTM D-1586. This designation describes as procedure to obtain a record of the resistance of subsoils to the penetration of a standard sampler and to obtain representative disturbed samples of the material for identification purposes and laboratory testing. The penetration resistance shall be expressed as the number of blows of a 63.4 kg (140 lbs) hammer freely dropping 762 mm (30 inches) required to force the standard sampler 305 mm (12 inches) into the soil. Standard Penetration Tests shall be conducted in the bore holes at one-meter interval from 1-meter depth to 10/15-meter depth of bore hole and up to 40 m in case of river crossing locations, unless otherwise directed by the Engineer. Immediately after each

penetration test a representative portion of the soil core shall be placed in moisture proof container.

4.8 Undisturbed Sampling

The undisturbed samples shall be taken in cohesive and non-cohesive materials. Samples shall be obtained using Denison or Pitcher sampler or equivalent double tube core barrel or Shelby tube. The sampling procedure shall conform to latest B.S./ASTM Standards. The length of undisturbed samples obtained shall not be less than 30 cm. immediately upon extraction from the hole, the sample shall be properly waxed. The number and depth of undisturbed samples from each hole shall be as directed by the Engineer during the progress of the drilling work at site.

4.9 Labeling and Disposition of Samples

Each sample shall have identification tags giving information regarding Sample No., Top Elevation of Hole/Test Pit, Date of Sampling, Depth and Length of Sample, and Description of Sample. The selected undisturbed and disturbed samples shall be carefully transported for testing by the Contractor to the approved testing laboratory. Every precaution shall be taken to avoid damage to samples as a result of careless handling and undue delay in transportation. The tubes containing undisturbed samples and cores shall be well packed in wooden boxes to protect the samples against vibration.

Ground Water Observations

Whenever required by the Engineer, bore holes shall be preserved for observations of ground water conditions. When the borings are advanced by using natural or commercial drilling mud/bentonite to stabilize the hole, the hole shall be flushed thoroughly with clean water at the completion of boring for the purpose of observing ground water levels.

4.10 Laboratory Tests

(i) General

- Laboratory tests shall be scheduled and performed by qualified and experienced personnel who are thoroughly conversant with the work.
- The laboratories in which the samples are to be tested shall be approved by the Engineer.

Laboratory tests shall be conducted using approved apparatus complying with the requirements and specification of International Standards for this type of work. It shall be checked that the apparatus are in good working condition before starting the laboratory tests. Calibration of all the

instruments and their accessories shall be done carefully and precisely at an approved laboratory.

One copy of all laboratory test data records shall be submitted to the Employer progressively every week. Laboratory tests shall be carried out concurrently with the field investigations as initial laboratory test results could be useful in planning the later stages of field work.

A schedule of laboratory tests shall be established by Contractor to the satisfaction of the owner within one week of completion of the first bore hole.

- The person representing to the Engineer shall have access to the laboratories to supervise and check the laboratory testing of the samples.
- The testing shall be carried out in accordance with ASTM or equivalent British Standards, or as directed by the Engineer.

(ii) Tests

The Contractor shall arrange to carry out laboratory tests on the specified samples of the subsoil material/water sample. The samples to be tested and the tests to be carried out for each sample shall be specified by the Engineer.

Undisturbed soil samples retained in liners or seamless tube samplers shall be removed, without causing any disturbance to the samples, using suitably designed extruders just prior to actual testing

Laboratory testing may include but not limited to the tests listed below:

Grain Size Analysis (Sieve + Hydrometer)

Soil Classification with percentage of gravel, sand, silt and clay at different depths.

Safe Soil Bearing Capacity (particularly at 5m depth)

Atterberg's Limits

Chloride Content (soil and water)

Bulk Density and Moisture Content

Dry Density

Generalized Subsurface Geotechnical Models with tables showing soil characteristics for each tower location

Capacity Curves at 4, 5, 6, 7m depths and Allowable Load vs Foundation Width for different Models.

Organic Matter Content

Sulphate Content (soil and water)

PH value (soil and water)

Unconfined Compression Test

Direct Shear Test

Consolidation Test

Total Soluble Salts.

4.11 Confirmatory Sub-Soil Investigation

After preliminary subsoil investigations confirmatory investigation (if required) up to maximum depths of 30 meters will be carried out by the Contractor. The location of selected confirmatory investigation will be conveyed to the Contractor by the Engineer.

4.12 Record

The Contractor shall have at site, at all times only qualified, experienced, orderly and thoroughly competent graduate Geologist who shall conduct and supervise drilling operations sampling and logging.

Contractor shall submit a formal report containing geological information of the region, procedures adopted for geotechnical investigation, field observations, summarized test data, conclusions and recommendations. The report shall also include detailed bore logs, subsoil sections, field test results, laboratory observations and test result both in tabular as well as graphical form, practical and theoretical considerations for the interpretation of test results, supporting calculations for the conclusions drawn etc.

The Contractor shall keep accurate logs and records of all the Work accomplished under this Contract. All such records shall be preserved in good condition by the Contractor until they are delivered and accepted by the Engineer. The Engineer shall have the right to examine such records at any time prior to their delivery to him. The following information shall be included in the records for each investigation borehole:

Bore hole/test pit number or designation, coordinates and elevation of top of the bore hole/test pit;

Type of drilling operations;

Dates and time by depths when drilling operations were performed;

Depths at which samples were recovered and field-testing was performed including complete data of field-testing;

Depth of Ground water table from NSL; and

Description of subsoil conditions.

The presence of the Engineer Representative or keeping of separate records by him shall not relieve the Contractor of the responsibility for the Work specified in this clause. Payment will not be made if the Contractor has not furnished the records.

4.13 Foundation design/designation

Contractor shall submit the foundation design/designation for each tower location duly considering soil type and tower spotting data along with the data/calculations to establish that the proposed foundation type is optimized and cost effective for the review and approval of the Engineer:

The recommendations shall provide all design parameters and considerations required for proper selection, dimensioning and future performance of tower foundation and the following:

Necessary soil design parameters to verify the bearing capacity based on geological data (bore log) and laboratory test results i.e. from (a) standard penetration test & (b) analytical method.

Immediate and consolidation settlements of soil.

Seasonal fluctuation of ground water.

Cement type to be used for foundation construction (based on ACI-318 Table 4.3.1).

The Contractor shall propose suitable foundation design on the basis of soil investigation. If it is determined that a new foundation design, other than those being already used by NGC, is required depending on the soil investigation results, the Contractor would design such new foundations types such as grillage foundation, undercut foundation, rock-anchor foundation, augured foundation etc. The Contractor shall be responsible for satisfactory performance of new foundation after erection and commissioning of towers on these foundations. Price of Design of new foundation would be quoted on "per type of foundation" basis.

Contractor shall submit the foundation design/designation along with the following data/calculations to establish that the proposed foundation type is optimized and cost effective for the review and approval of the Engineer:

- Necessary soil design parameters to verify the bearing capacity based on geological data (bore log) and laboratory test results i.e. from (a) standard penetration test & (b) analytical method.
- Immediate and consolidation settlements of soil.
- Seasonal fluctuation of ground water.
- Cement type to be used for foundation construction (based on ACI-318 Table 4.3.1).

1.2 Foundation Requirements

(1) General

The items in the Price Schedules for constructing the various types of concrete foundations (including pile foundations) for steel towers include the following:

- (a) Tower staking;
- (b) Performing all clearing, grading, cutting, blasting and leveling as required to construct the footings and erect the steel towers at the specified tower locations;
- (c) Performing all required excavation, blasting (in all types of soil/rock), dewatering, shuttering, curing and compacting backfill for the concrete footings;
- (d) Installing steel stub angles in the concrete footings;
- (e) Tower grounding before placement of concrete;
- (f) All concrete work for the concrete footings, including the cost of furnishing all reinforcing bars, and all materials for concrete;
- (g) Installing pile foundations (pile, pile cap & tie beam) where required, including the cost of furnishing all reinforcing bars and all materials for concrete; and
- (h) The foundation drawings included in Bidding Document are firm & final and only be changed (if required) as directed by Engineer.

(2) Excavation for Tower Footings

The Contractor shall perform all excavation required for constructing various types of concrete foundations for the steel towers. During excavation of towers sites near to amenities, the Contractor shall ensure to perform the work in such a manner as to minimum damage to them and if any prior approval is required that must be obtained at his own. However, in case of any damage the Contractor shall be get repair of it at his own risk and cost under intimation to the concerned agency.

The tower sites shall be leveled, graded/cut and cleared of trees, brush and stumps as may be required to construct the tower footings and to erect the steel towers. Cleared materials shall be disposed off, as directed by the Engineer or his nominated person.

All excavations shall be sufficient to provide concrete footings with dimensions not less than shown on the drawings.

After the Contractor has excavated the footing to the required depth, the Engineer will inspect the bottom of the excavation and determine if the

bearing material is suitable for the type of footing designated for that location. If it is found that the bearing material is unsatisfactory for the type of footing designated, the Engineer or his nominated person will either designate another type of footing or ask for compacted crushed stone mixed with sand 50:50 ratio to be placed underneath the footing for a depth of up to 1.2 meters. The Contractor will be paid only for the type of footing actually installed. However, no payment will be made to the excavation & replaced material underneath the footing.

A maximum variation of 60 mm above or below established grade will be permitted. However, if excavations are below specified grade plus tolerance, those shall be backfilled to required grade by the Contractor with the Contractor's furnished concrete at his own cost.

All excavated material which is suitable for backfilling shall be laid aside to be used for backfilling at the tower site from which it was excavated, and the excess material shall be spread evenly around the site as directed by the Engineer or his nominated person.

Concrete shall be placed as soon as practicable after each excavation is completed and all excavations shall be protected so as to maintain a clean sub-grade until the footing is placed, using dewatering, timbering, shoring, or casing, as necessary. Any sand, mud, silt, or other objectionable material which may accumulate in the excavation shall be removed at the expense of the Contractor before placing concrete. After completion of foundations all the dewatering holes shall be filled with dry sand.

(3) Rock Excavation

Rocks shall be excavated to the depth required to provide suitable base for the foundations as indicated on relevant drawings.

Rock excavation includes drilling, blasting, removal, drainage and pumping as required. Drilling and blasting techniques shall keep over break to a minimum and no extra compensation shall be paid for the removal of over broken material. The contact surface of the rock shall be cleared of all loose rock and soil.

The cost of any damage whatsoever caused by blasting shall be payable by the Contractor. He shall not be relieved of these costs in spite of having received approval of his methods from the Engineer.

(4) Erosion/Slope Protection

For erosion protection against water current, gravel blankets shall be placed such that they do not flow away with water current. These gravel blankets shall be placed at or adjacent to tower sites in the manner as directed by the Engineer or his nominated person. Gravel for the blankets shall be furnished

by the Contractor, and it shall be pit-run, free draining, containing no stones larger than 635 mm size obtained from the closest source approved by the Engineer or his nominated person. The gravel shall be reasonably clean and free from vegetation, pieces of timber, or other foreign matter, and shall be distributed and graded evenly over the required areas. No compaction will be required.

Slope protection will be provided for foundations, which are located/placed on uneven ground, and/or they are partially or fully exposed in such a way that designed burden cannot be provided on these foundations safely. Slope protection shall include but not limited to construction of retaining walls of stone or brick masonry to a height and depth so as to provide adequate protection and necessary burden by making a leveled platform with or without brick/stone mortar after filling with earth as per specifications/drawings or as directed by the Engineer. The slope protection drawings will be prepared by the Contractor and submitted to the Engineer for review/approval prior to execution of Project.

(5) Concrete Foundations

Each tower foundation will have four footings and each footing will consist of a steel stub angle embedded in reinforced concrete. The footings for each tower in a tangent section of the line shall be placed so that the longitudinal axis of the tower cross-arm will lie in a plane perpendicular to the traverses of the line. Unless otherwise directed by the Engineer, the footings for each angle tower shall be placed so that the tower cross-arm will lie in a plane bisecting the interior angle formed by the inter-section of the traverses of adjacent sections of the line.

The footings at the various tower sites shall be constructed in accordance with the criteria shown on Drawings.

Pile foundations will be required where the field and laboratory tests confirm the requirements. The pile foundations will be installed as shown on the relevant drawings and in accordance with these Specifications.

Any type of spread footing foundation may be changed to another type of spread footing foundation or pile foundation in accordance with field requirements during execution of the project with the prior approval of the Engineer.

(6) Placing of Stub Angles in Footings

Stub angles shall be placed in the tower footings as shown on the drawings and shall be supported in the proper position by means of a rigid frame or equivalent suitable device to ensure placement of the stubs within the

tolerances specified below. The stub angles shall be held rigidly in a manner to prevent displacement during placing of concrete.

All stub angles for the tower legs shall be set accurately to the grade and alignment designated on the drawings and as directed by the Engineer. Work that is not within the tolerance will be corrected as directed by the Engineer, and at the Contractor's expense. The setting tolerances following complete foundation installation including backfilling and compacting are as follows:

- (a) Tower Center from theoretical location:
 - (i) Transverse ± 150 mm
 - (ii) Longitudinal ± 500 mm
- (b) Tower Orientation (angular departure from the theoretical location measured at the point of intersection of a tower face and the longitudinal center-line).....25 mm
- (c) Difference in Elevation between working point marks on Stub Angles including diagonally opposite legs 8 mm
- (d) Departure from theoretical Horizontal Dimensions between tower center line and working point marks on stub angle:
 - (i) Along the tower face, plus minus 5 mm
 - (ii) Along the tower diagonal, plus minus 7 mm
- (e) Batter 5 mm per meter
- (f) Twist (about heel of stub angle) 2°

(7) Tower Grounding

Each tower shall be grounded by installing one ground rod below each of two diagonal footings. Ground rods shall be driven at least 2.5 meters into undisturbed soil at the bottom of the footing excavation, as shown on the Drawings. The ground rod shall be connected to the stub angle by a 7 No. 10 stranded annealed copper covered ground wire. The connection of this wire to the ground rod and to the stub angle shall be made by a bolted clamp in accordance with the Drawings.

Where it is not possible to drive a ground rod an alternative grounding by installing 'crowfoot' shall be adopted.

The resistance of the two rods/crowfoot in parallel shall be measured and recorded before concrete footings are poured. If the resistance is more than 10 ohms, additional rods/crowfoot shall be installed as directed by the Engineer or his nominated person. No extra payment would be allowed for excavation/blasting/laying/back-filling on account of this.

The dead end terminal tower of the overhead lines must be connected to the earthing system of the grid stations.

(8) Concrete

(a) General

All concrete and reinforcement placed for tower footings shall conform to the requirements of this section.

At least 30 days prior to beginning concrete placement, the Contractor shall submit to the Engineer for approval, a design mix (along with quantity and source of each material) along with six (6) test cylinders using the actual materials to be incorporated into the Work. Approval of the design mix will in no way relieve the Contractor from meeting all the requirements of these Specifications. Whenever the Contractor proposes to use a different material source, a new design mix must be submitted and approved as outlined above. During construction if in the Engineer's opinion the mix shall be adjusted, the Contractor shall submit a new design mix as directed by the Engineer.

(b) Materials

The Contractor shall furnish all materials for use in concrete, including but not limited to cement, sand, coarse aggregate, water, reinforcing bars, admixture, (including ground slag) and concrete curing compound. Air-entraining agent and curing compound shall be accepted on manufacturer's certification of compliance with specification requirements. However, the Engineer reserves the right to require submission of and to perform tests on samples of the agent and/or compound prior to shipment and use in the Work at the cost of Contractor.

(i) Cement

Cement shall meet the requirements of ASTM C150. The cement shall be free from lumps and properly packed in bags when used in concrete. Adequate provisions shall be made by the Contractor to prevent absorption of moisture when cement is stored. Cement Type-V (sulfate resistant cement)

will be used. Volume of one bag of cement should be taken as 1.25 cubic-ft.

(ii) **Sand and Coarse Aggregate**

Sand and coarse aggregate shall be furnished from any approved source. The sand particles shall be clean, hard, dense, durable, uncoated rock fragments that will pass a screen having 6.5 mm square openings. The sand shall be well graded from fine to coarse and shall be free from injurious amounts of dirt, organic matter, and other deleterious substances.

The coarse aggregate shall consist of clean, hard, dense, durable, uncoated rock fragments, shall be free from injurious amounts of flat and elongated pieces, organic matter, or other deleterious substances. The maximum size of crushed coarse aggregate for piles shall be 19 mm and for spread footings, pile cap and tie beam 38 mm or as directed by the Engineer. The grading of these sizes shall conform to ASTM C33.

The Contractor shall submit, for testing and approval, representative samples of the sand and coarse aggregate proposed for use in the concrete work. All testing will be conducted at CMTL, Lahore or UET Jamshoro. All aggregates shall conform to the requirements of ASTM C33 including petrographic test. During construction the Contractor shall also arrange testing of sand and coarse aggregate if directed by the Engineer to determine compliance with Specifications. The cost of all laboratory testing of these samples shall be borne by the Contractor.

(iii) **Water**

Water used for mixing concrete shall be clean and free from injurious amounts of oils, acids, alkalis, salts, organic materials, or other substances that may be deleterious to concrete or reinforcement and shall meet the requirements shown in Table-1 below. A complete chemical analysis of water shall be submitted prior to the start of construction work and shall be required for each new water source being chosen. The cost of all laboratory tests of the samples shall be borne by the Contractor. No change in water source shall be permitted without prior approval by the Engineer.

TABLE-1

Total Dissolved Solids (TDS)	800 ppm (max)
Magnesium, Chlorides and Sulfates	250 ppm (max)
pH Value	6.5 – 8.0

(iv) **Reinforcing Bars**

Reinforcing bars shall be deformed bars conforming to ASTM Designation A615, Grade 60. Representative steel bar samples shall be collected from the site and tested in the laboratory approved by the Engineer. The testing shall be witnessed by the Engineer. The cost of all laboratory tests and traveling of Engineer shall be arranged/borne by the Contractor.

Negative variation in weight [mass] maximum up to 2% of reinforcement bar(s) from the applicable weight [mass] per unit length prescribed in Table 1 of ASTM A615 will be allowed for bar(s) placement. Contractor will have to make adjustments in bar spacing/number of bars to accommodate the excessive negative variation in weight [mass] if greater than 2%. Contractor will not be allowed for bar(s) adjustment in case of overweight [excessive mass] of any deformed bar.

(v) **Curing Compound**

Curing compound shall be wax-base and white-pigmented (Type 2) and conforming to ASTM Designation C-309 to reflect solar radiation.

(vi) **Admixtures and Ground Slag**

Admixtures to be used in concrete shall be subject to prior approval of the Engineer and shall meet the following requirements:

(1) **Chemical Admixtures**

- a) Air-entraining admixtures shall conform to ASTM C 260, "Specification for Air-Entraining Admixtures for Concrete.
- b) Water reducing or water reducing and retarding admixtures (Normal Plasticizers) shall conform to ASTM C 494, "Specification for Chemical Admixtures for Concrete", Type A or D, respectively.
- c) Super plasticizers shall conform to ASTM C 494, Type F or G, respectively
- d) Only one of the Admixtures A, D, F or G, shall be added at a time.

- e) Chloride-bearing admixtures shall not be permitted.
- f) Super Plasticizers shall be checked for their compatibility with pozzolanic materials in blended cement concrete.

(2) **Ground Granulated Blast-Furnace Slag**

In area where high sulphate and chloride contents are present in soil/water, finely ground granulated blast-furnace slag can be used as cementitious material in concrete by replacing SRC cement by maximum up to 30%. The properties of ground granulated blast-furnace slag should meet ASTM C 989. The cost of all laboratory testing of these samples shall be borne by the Contractor. Contractor will not be paid extra for the purchase/procurement of ground granulated blast-furnace slag to the construction sites.

(c) **Composition**

The Contractor shall determine the proportions of the sand, coarse aggregate, and cement needed to provide concrete, meeting the requirements of these Specifications, and shall be approved by the Engineer. Concrete which contains 38 mm maximum-size aggregate shall have a cement content of not less than 380 kg per cubic meter and concrete which contains 19 mm maximum size aggregate shall have a cement content of not less than 440 kg per cubic meter. 38 mm maximum size aggregate shall be used for spread footing, pile caps, tie beams and 19 mm aggregate for piles. The net water cement ratio by weight shall not exceed 0.5. Surface water contained in the aggregate shall be included as part of the mixing water in determining the water content. Reinforced concrete design will be checked in accordance with the ACI Building Code.

The Contractor will take minimum three test cylinders (152mm x 305mm) per leg, and the average compressive strength at 28 days shall exceed 210 kg/cm² (3000 psi) and no individual test value should fall more than 35 kg/cm² (500 psi) from the minimum specified value.

The compressive strength of the concrete will be determined by the Engineer through the medium of test of (152 x 305 mm) cylinders made and tested in accordance with ASTM C39. The Contractor shall furnish all necessary sampling equipment such as slump cones, test cylinders, etc. at the site. This equipment is to be approved by the Engineer or nominated person by Engineer. The cost of the material lab tests shall be borne by the Contractor.

In the event that the concrete cylinder fails to meet the specified strength requirements then in-place testing of concrete shall be conducted under the supervision of the Engineer. In-place as approved by Engineer testing of concrete shall be conducted by one or a combination of the following methods:

- (i) ASTM C42 "Test Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete."
- (ii) ASTM C805 "Test Method of Rebound Number of Hardened Concrete."

The use of calcium chloride in concrete will not be permitted.

The slump of the concrete shall not exceed 75 mm for conventional foundation, pile cap & tie beam and 150-180 mm for piles.

(d) **Batching and Mixing**

Unless specifically approved by the Engineer, all concrete used on the Project shall be machine mixed. Hand mixing shall only be used when authorized by the Engineer and shall be performed under his directions.

The sand and coarse aggregate shall be weighed and shall be proportioned on the basis of integral bags of cement unless the cement is weighed. After weighing, the materials may be proportioned on the basis of equivalent volumes. The Contractor shall provide equipment and shall maintain and operate the equipment as required to accurately determine and control the amount of each separate ingredient entering the concrete. Batching shall be such that combined inaccuracies in feeding and measuring the materials will not exceed 1.5 percent for water and weighed cement and 2 percent for sand and each size of coarse aggregate. The concrete shall be uniform in composition and consistency throughout the mixed batch, and from batch to batch, except where changes in composition or consistency are directed. The mixing time shall be at least 1.5 minutes for stationary mixers. Excessive over-mixing requiring the addition of water to preserve the required consistency will not be permitted. The temperature of the concrete when it is being placed shall be not more than 35°C and not less than 5°C in moderate weather or 10°C when the mean daily temperature drops below 5°C. Truck mixers will be permitted only when the mixers and their operation are such that the concrete throughout the mixed batch and from batch to batch is uniform with respect to consistency and grading. Any concrete retained in truck mixers so long as to require additional water to permit satisfactory placing shall be wasted.

(e) Forms Preparation for Placing of Concrete

Unless otherwise provided for on the Drawings or approved by the Engineer, all concrete placed will be monolithic.

Forms shall be sufficiently tight to prevent loss of mortar from the concrete and shall be maintained rigidly in position until the concrete has hardened sufficiently to prevent damage by form removal. All surfaces of foundations upon or against which concrete is to be placed shall be free from standing water, mud and debris. The surfaces of absorptive foundations against which concrete are to be placed shall be moistened thoroughly so that moisture will not be drawn from the freshly placed concrete. The surfaces of construction joints shall be clean, rough and surface dry when covered with fresh concrete. Cleaning shall consist of the removal of all laitance, loose or defective concrete, coatings, sand, curing compound if used, and other foreign material. A mortar layer shall not be used on concrete construction joints.

The methods and equipment used for transporting concrete, and the time that elapses during transportation shall be such as will not cause appreciable segregation of coarse aggregate or slump loss in excess of 25 mm in the concrete as it is delivered into the Work. Concrete may be transported from the mixer to the forms and deposited in the forms by any method approved by the Engineer such as transit mixers, buckets, chutes and pumping. Aluminum pipe or chutes shall not be used for tremie trunk line, or chute for placing of concrete, or for the delivery of pumped concrete. Re-tempering of concrete will not be permitted. Any concrete which has become so stiff that proper placing cannot be assured shall be wasted. Formed concrete shall be placed in continuous approximately horizontal layers, the depths of which generally shall not exceed 500 mm. Concrete shall be vibrated (internal vibrators having a minimum frequency of 8,000 vibrations per minute) until it has been consolidated to the maximum practicable density, is free from rock pockets of coarse aggregate, and closes snugly against all surfaces of forms and embedded materials. Standby vibrators shall be available during concrete placement.

Exposed unformed surfaces of concrete shall be brought to uniform surfaces and worked with suitable tools to a reasonably smooth wood float or steel-trowel finish as directed. Concrete in the tops of foundations in which stub angles are embedded shall be sloped to provide drainage away from the stub angles.

(f) Reinforcement

Steel reinforcing bars shall be placed in the concrete where shown on the drawings. Before reinforcement is placed, the surfaces shall be

cleaned of heavy flaky rust, loose mill scale, dirt, grease, or other foreign substances. Reinforcement shall be accurately placed and secured in position so that it will not be displaced during placing of concrete.

The Engineer shall not furnish supplemental bar-placing diagrams, bar lists, and bar-bending diagrams. Any such additional diagrams and bar lists of this type which the Contractor may require to facilitate the fabrication and placement of reinforcement shall be provided by the Contractor.

Reinforcement will be inspected for compliance with requirements as to size, shape, length, splicing, position, and amount after it has been placed.

Any bar-placing diagrams, bar lists, and bar-bending diagrams prepared by the Contractor shall conform to the requirements shown on the reinforcement design drawings and shall be approved by the Engineer. Maximum two numbers of bars (2+2) in pad and chimney can be lapped.

Lap splices shall be as under:

Bar #	3	4	5	6	7	8	9	10	11
Lap Length (mm)	305	360	460	610	840	1100	1400	1800	2160

(g) **Protection and Curing**

The Contractor shall protect all concrete against injury until final acceptance. The concrete shall be cured with two applications (coats) at right angles to each other to ensure uniform and more complete coverage with approved membrane type curing compound to be applied preferably by power sprayer as soon as possible after concrete placement and in no case later than 2 hours. Curing with water shall be used only as an alternative to the type curing and with Engineer approval. The application of the curing compound shall be in accordance with the procedures outlined by the Manufacturer. In case of pile-cap & tie beam with form, ties are loosened and vertical forms are still in place water should be applied to run down on the inside of the form to keep the concrete wet. Immediately after form removal, the surfaces should be kept continuously wet by water spray or water-saturated fabric until the membrane-forming curing compound is applied.

In exceptional cases where extremely corrosive soil conditions are encountered, or as directed by the Engineer, the surfaces of the concrete, both exposed and unexposed, shall be treated with an approved type of bituminous compound. A minimum of two applications shall be required, and the applications shall be 100 percent effective. Surfaces to be treated shall not be coated with curing compound. No extra payment will be made to the Contractor for procurement/treating concrete surfaces with bituminous compound.

(h) Repair of Concrete

Any concrete that is damaged or defective from any cause; concrete that is honey-combed, fractured, or otherwise defective, and concrete damaged because of excessive surface depressions, must be excavated and built up to bring the surfaces to the prescribed lines, shall be removed and replaced and any imperfections and irregularities on concrete surfaces shall be corrected. The removal and replacement of damaged or defective concrete, and the correction of surface imperfections and irregularities shall be made with concrete dry pack, or mortar (Portland cement mortar), or at the option of the Contractor, with epoxy-bonded concrete, or epoxy-bonded epoxy mortar, where and as applicable for the type of repair involved. All repairs should be completed within 24 hours after removal of forms, and as directed by the Engineer or his nominated person. However, forms shall not be removed for a period of at least 24 hours after the concrete work until it has acquired sufficient strength to safely carry its own weight and any construction loads that may be imposed on it.

(i) Tolerances for Concrete Construction

The Contractor shall be responsible for setting and maintaining concrete forms within the tolerance limits necessary to insure that the completed Work will be within the tolerances specified or within good construction practices. Concrete work that exceeds the tolerance limits specified herein shall be inspected by the Engineer and he will determine what effect the deviations will have upon the structural action or operational function of the structure, and what remedies may be necessary. If after such inspection the Contractor is directed to remove or replace any defective Work, he will do so at his own expense.

(aa) Tolerances for footings:

-	Variation from plumb or specified batter for lines and surfaces of stems	In any length of 3.0 meters 13 mm Maximum for entire length 26 mm
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-	Variation in cross-sectional dimensions of stems	Minus..... 7 mm Plus 26 mm
-	Variation from specified elevation for top of concrete	Minus 13 mm Plus 13 mm
-	Variation of dimensions in plan	Minus 13 mm Plus 52 mm
-	Misplacement or Eccentricity	2 percent of the footing width in the direction of misplacement but not more than 52 mm
-	Reduction in thickness	5 percent of specified thickness
(bb)	Tolerance for placing reinforcing steel:	
-	Variation of protective covering:	with cover of 64 mm or less 07mm
-	Variation from indicated spacing	with cover of more than 64mm 13mm 26 mm

(9) Backfill for Tower Footings

Backfill shall be placed about the tower footings to elevations indicated on the drawings or as directed. The material used for backfilling, the amount thereof, and the manner of depositing this material shall be approved by the Engineer. Where the excavated materials are insufficient in quantity or are not suitable, as determined by the Engineer nominated person, for use as backfill, the Contractor shall obtain suitable material from the borrow. No borrow pits shall be made within 25 meter radius from center of tower. Backfill shall be placed about the tower footings as soon as practicable after removal of concrete forms, but not earlier than 8 hours from application of sealing compound or bitumen coating to concrete surfaces.

The excavated material not suitable for backfilling or in excess of backfilling requirement shall be spread evenly over or adjacent to the Site. The backfill adjacent to footing stems shall be approximately 150 mm above the original ground, and shall be graded and sloped uniformly away from the stems so that there is no pond at or around the footing.

In backfilling for concrete footings, the pad of the footing shall be covered with fine material of 300 mm thickness (after compaction) before any coarse material is deposited. Care shall be taken to avoid damage to the concrete when backfilling. The backfill material shall be clean and free from vegetation, pieces of timber, or other foreign matter. Suitable material for backfilling shall be a compatible granular material having a granularity within the following limits.

<u>Sieve</u>	<u>% Passing</u>
76 mm (3 in)	100
No. 200	0-15

(10) **Compacting Backfill**

Backfill shall be placed in horizontal layers which after compaction shall not be more than 150 mm thickness. Each layer shall be compacted by tamping machines or other mechanical means approved by the Engineer.

Backfill shall be moistened properly where required. When excavated material is so wet that it is not suitable for backfilling, it shall be spread and aerated until the proper moisture content is attained, at which time the material shall be used as backfill around tower footings. The backfill material shall not be placed until all forms and timber used for shoring or bracing have been removed, unless otherwise permitted by the Engineer or his nominated person.

The Contractor shall submit, for laboratory testing and approval, representative samples of the materials proposed to be used as backfill. On the basis of laboratory test results the Engineer shall specify the degree of compaction to be obtained in the field, which shall not be less than 90% of the maximum dry density as obtained by ASTM D-1557.

Density shall be measured in the field according to ASTM D1556 or ASTM D2937 by the Contractor in the presence of nominated person of the Engineer to determine compliance with the specified degree of compaction. The cost of all laboratory and field testing shall be borne by the Contractor.

(11) **Additional Foundations**

In case other foundations are required to be installed, which are of different design than the specific types listed, the Contractor shall install these foundations as directed by the Engineer. All work performed will be in accordance with these Specifications. Payment for additional foundations will be made at the applicable unit prices provided in the Price Schedules for similar Works.

(12) **Foundation Test (Not Required)**

The Contractor may be required to perform an uplift load test on any one footing for double circuit suspension type tower. The Engineer will designate the location and type of footing to be tested. All methods, procedures, equipment, jigs, apparatus etc., shall be subject to approval by the Engineer. No testing shall be commenced until 28 days after the final concreting nor until all backfill is placed and compacted as specified herein.

An uplift load shall be applied until a design value is reached or the footing fails. The rate of load application will be determined by the Engineer.

1.3 Pile Foundations

(1) General

(a) Description of Work

The Work to be performed under these Specifications shall be carried out at the proposed site of towers after the field and laboratory test results confirmation. The Work includes, but is not limited to the following:

- (i) Construction of bored, cast-in-place reinforced concrete piles, pile cap and tie beam as shown in the Bid Drawings or as directed by the Engineer.
- (ii) Complete borehole logs and record of all operations performed during the execution of the Work.

(b) Location of Piles

- (i) The location of piles on the ground shall be established by the Contractor in accordance with the construction drawings. Establishing the pile locations accurately in the field shall be sole responsibility of the Contractor.
- (ii) The Contractor will provide the levels, survey and ground elevations for each pile location. The elevations will be given with respect to permanent Bench Marks in the vicinity of the Site.

(c) Diameter and Length of Piles

Bored, cast-in-place reinforced concrete piles shall be constructed having uniform diameter throughout the length as specified in the relevant Bid drawings or as directed by the Engineer. Pile footings shall only be installed where the field and laboratory tests confirm the requirements. The final length of the piles shall be determined based on field and laboratory test results.

(d) **Drillers and Supervisory Staff**

The Contractor shall have at Site, at all times only qualified, experienced, orderly and thoroughly competent persons including graduate civil engineers/geologists who shall conduct and supervise drilling/concreting operations during, sampling, logging, in-situ testing and piles construction.

(2) **Execution of Piles**

(a) **General**

This clause covers all the work necessary for the execution of the bored, cast-in-place reinforced concrete piles namely:

- (i) Formation of ramp.
- (ii) Drilling and stabilizing of bore holes for the piles.
- (iii) Placing of steel reinforcement.
- (iv) Mixing and placing of concrete.

The Contractor shall perform all such work in accordance with requirements of this clause as well as in accordance with the methods proposed or described by him at the time of submitting his Bid and approved by the Engineer.

(b) **Method of Drilling**

The drilling of holes for piling shall be done by reverse rotary or percussion method or any other method suggested by the Contractor and approved by the Engineer. Regardless of the method used for drilling holes, drilling operations shall be carried out in such a way as to avoid any disturbance of the surrounding soil especially at the bottom of the hole and successful drilling through all types of soil/rock/boulder.

(c) **Stabilizing of Holes**

There will be no permanent casing installed. Any temporary protective casing at the start of the drilling shall be later pulled out. The stabilizing of the drilled holes shall be achieved by using natural or commercial drilling mud/bentonite. Permanent casing shall only be allowed with the prior approval of the Engineer.

(d) **Tolerances**

Tolerances for setting out and for concrete construction shall conform to Clause 1.3 of these Technical Provisions. In case of piles, deviation

from the vertical shall not exceed one percent on any section of the length of the holes.

(e) **Concrete**

All concrete and reinforcement placed in the construction of piles shall conform to the requirements of Clause 1.3(8) of these Technical Provisions. In addition to this, following requirements shall also be fulfilled.

- (i) Promptly after cleaning of the borehole to the entire satisfaction of the Engineer Representative, concrete shall be placed in a manner that will not cause segregation of the particles or permit infiltration of water or any other occurrence which would tend to decrease the strength of the concrete or the capacity of the finished pile. The slump shall be 150-180mm.
- (ii) The minimum clear distance between vertical reinforcement, including lapped bars, shall be 100 mm (if applicable).
- (iii) Either tremie or pumped-in concrete can be used in presence of water or of drilling mud. Tremie or pump pipe shall be made of steel and have watertight joints. Tremie pipe shall have a minimum diameter of 8 inches (200 mm) and pump pipe shall have a minimum diameter of 4 inches (100 mm) should be used. Embed tremie or pump pipe a minimum of 3 meters in the concrete throughout concreting. The method and equipment used shall be subject to the prior approval of the Engineer.
- (iv) Concrete placement shall proceed without interruption until the pile is complete.
- (v) Vibrate top 3 to 4 meters of concrete after temporary casing has been withdrawn.
- (vi) The Contractor shall make three test cylinders per pile or as directed by the Engineer during the concreting of piles.
- (vii) The vertical bars of pile can be coupled together as directed by the Engineer according to the site requirement.
- (viii) The inner dia of stand casing/permanent casing should be at least 25mm larger than the pile dia, whereas bit dia should be equal to pile design dia.

(f) **Record**

The Contractor shall keep accurate logs and records of all the Work accomplished under this Contract. All such records shall be preserved in good condition by the Contractor until they are delivered and accepted by the Engineer. The Engineer shall have the right to examine such records at any time. The following information shall be included in the records for each pile.

- A general description of sub-soil conditions and water table position at the location of the pile.
- Pile number, ground elevation of borehole and elevation of top of pile.
- Type of drilling operations.
- Date and time by depths when drilling operations were performed and piles constructed.
- Total depth of each borehole.
- Quantity of concrete and steel used for the construction of each pile.
- Quantity of constituents for each batch of mix, water cement ratio and the results of all quality control tests.
- Time of start and completion of Concrete.
- Remarks concerning any unusual occurrence during drilling and concreting of piles.

1.4 Dismantling of Towers (if any)

The dismantled Towers are envisaged for reuse/re-utilization by the employer in other projects. Proper handling and safety of the tower components/members during dismantling, counting & recording of each component/member, bundling/packing, storage at site and safe transportation of material to employer designated warehouse shall be included in the scope of work. The contractor shall be entirely responsible for any damage to the tower members/components during execution of work. In case of any damage/breakage/loss of tower members/components, recovery shall make from the contractor by employer.

The contractor shall also make every effort to minimize the breakage/loss of dismantled fasteners (nut & Bolts, washers, step bolts etc.) during execution of work. However, if breakage/loss of fasteners is inevitable, the same may be allowed/approved by the Engineer.

1.5 Tower Erection (if any)

(1) General

Contractor's work includes supply of manpower, providing construction equipment, vehicles, rigging tackles for complete assembly of towers.

Erection shall be done strictly in accordance with the approved manufacturer's drawings, material lists and approved construction data sheets.

No tower shall be erected **until seven days after the last concrete** was placed in the foundation, nor until backfill has been completed where and as required.

(2) Handling

Tower steel shall be handled so as to prevent deformation of the members and damage to the galvanizing. Materials shall not be dumped, dragged, barred; rolled or dropped but shall be carefully loaded, unloaded and stored. A mechanical means such as hoist or crane shall be used when material cannot be properly handled or placed by hand.

Bare wire rope or steel chains shall not be used for handling without adequate protection of the surface coating. Heavy members shall not be stacked on top of lighter members. Structural members shall be stored according to size, lengths and markings. The maximum weight of steel bundles shall not exceed a specified weight, typically 1600 kg to 1800 kg, to facilitate handling and unloading. Members with dissimilar finishes shall not be stored over one another to minimize discoloration of the lower members.

All members shall be placed on wood blocking or other suitable material to ensure that the materials to be stored are not in contact with the ground. Blocking shall also be used to separate layers of stacked materials. Members shall be supported in such a manner as to prevent bending and distortion as well as to allow water to drain from the materials.

Failure to provide for proper drainage of stacked galvanized steel members could result in the formation of white rust. White rust (zinc oxide) forms when two galvanized surfaces are closely rested for an extended time without adequate ventilation. Ingress of water between the surfaces forms an electrolytic cell, which may, in time, erode some of the zinc layer. The white rusting action will stop after exposure to air. Spacers placed between the nested pieces ensure adequate ventilation when extended transport storage is anticipated.

The material yard shall be kept relatively neat and clean and the growth of vegetation kept to a minimum. Good housekeeping minimizes damage and

loss of material handling; periodic physical inventories and complies with environmental considerations.

(3) **Assembly Methods**

All assembly and erection shall be done by methods and equipment that will not cause damage to, or distort any part of the tower. Extreme care shall be taken to establish and maintain the true geometric shape of the sections of tower assembled.

Preassembly techniques are generally influenced by site terrain and available equipment. Generally, the larger section that can be pre-assembled, the more efficient is the assembly/erection operation. Preassembly techniques shall consider placement of the assembled sections to provide for the most efficient, safe lifting for erection. Structural assemblies, which are not sufficiently rigid to be raised in one piece, shall be stiffened by means of adequate temporary bracings.

Towers assembled on the ground shall be placed on suitable blocking so as to be kept free of dirt, mud or other foreign material that might adhere to the structure and damage the coating. Blocking shall be placed in such a manner as to provide a flat surface in order to prevent over stressing or distortion of members and to maintain the true geometric shape of the assembled members. Mud, dirt, white rust and other foreign material shall be removed from the contact surfaces of joints prior to assembly. Steel members shall not be dragged over the ground or otherwise handled in such a manner as to damage the galvanizing.

The structures shall be assembled in accordance with the fabricator's erection and detail drawings. The diameter, type, and length of bolts as shown on these drawings shall be used for each connection. Orientation of bolts can facilitate access, final tightening and installation of locking devices and subsequent checking of the erected structure. Tower bolts shall normally be installed so that the nuts are to the outside of the tower or, in the case of horizontal members, to the top of the connection unless such positioning is clearly impracticable.

Installation of bolts by hammering or any method that damages the galvanized coating shall not be allowed.

When sections of towers are being assembled prior to erection, assembly shall be on blocks that will provide support, sufficient to prevent distortion of tower steel. If all bolts in an assembly are not inserted, at least 50 percent of the bolts in each connection shall be inserted and those bolts shall be finger-tightened only. All bolts in an assembly shall be inserted before any bolt in the assembly is fully tightened.

Only wrenches which properly fit the nuts and bolt heads shall be used. The use of wrenches, which in any way deform the nut or cut or flake the

galvanizing is prohibited. All bolts shall be entered clear to the head. All 16 mm diameter bolts shall be tightened to a torque of 10-14 kg - meters and 20 mm and 24 mm diameter bolts to a torque 17-23 kg-meters. All bolts after torque shall be center punched adjacent to the nut in order to prevent loosening of the nut. This method of locking the nuts will be used instead of locknuts.

(4) Method for Erection

Towers shall be erected by any suitable method in the sequence best adapted to the equipment, workers' experience and site conditions which will not overstress structure members.

When handling assembled portions of the structure, spreader bars or other devices with proper points of attachment shall be used to avoid distorting or overstressing members and to maintain the true geometric shape of the section.

Adequate tag lines shall be used to ensure that no section of the tower being lifted will drag on the ground or against any section of the tower already erected.

Temporary guying may be required when erecting a structure in sections. Any temporary guying system shall be checked to ensure that the structure section is stable before workers are allowed to work on the section.

Structures shall be completely erected, correctly oriented, with all members in place, all bolts installed and properly tightened, and the entire structure checked in accordance with the specifications prior to the installation of insulators, conductors and OPGW.

When erecting structure members or sections in the vicinity of energized lines, care shall be taken to ground these members or sections before any workers come in contact with them.

The use of a crane erection is generally an efficient method of erecting latticed steel structures. With ground pre-assembly of sections, the time spent in final erection can be greatly reduced.

Cranes with telescoping booms can be more efficient than rigid boom cranes in rough terrain. Considerable productivity can be lost in the process of assembly and disassembly of rigid boom cranes. In addition, continuous handling of boom sections can lead to boom damage. Preplanning of the crane location at the structure site allows for any necessary grading work (building of ramps, soil stabilization etc.) to be accomplished during the foundation construction operations when suitable equipment is available at the site. Depending on soil conditions, additional bearing support may be required under outriggers, tracks, and tires. All soil shall be returned to a condition acceptable to the Engineer after erection.

Gin Pole is a boom of steel or aluminum pipe, wood pole or latticed truss secured at its base and usually inclined at a slight angle to the vertical is also used for tower erection. Two wire-guys about 60° to 90° apart in the plan view are attached to the top of the gin pole to resist or support the load to be lifted. For safety, a third, and preferably a fourth guy, is installed in front to prevent the pole from falling over backward in the event of an unexpected impact or the sudden release of load.

(5) Correction of Misfabricated and Damaged Steel

All shop errors and damaged steel shall be reported to the Engineer who will decide the manner in which corrections shall be made. All costs incurred due to punching, drilling or cutting shall be deemed to be included in the steel erection cost.

Pieces bent in handling may be used if they can be straightened to the satisfaction of the Engineer, without structurally damaging the metal. If bent pieces cannot be satisfactorily repaired, they shall be replaced.

Field punching or drilling of holes and field clipping shall be done only with the approval of Engineer, if the hole or clip was missed in fabrication of the member but was called for on the fabrication detail drawings. The edges of clipped angles, new or reamed holes or any member which has its coating scratched or damaged shall be repaired with a coating approved by the Engineer. Members having mis-punched holes shall not be repaired by welding and shall be replaced with correctly fabricated members. If the field fabrication of a member is required, the bolt spacing and edge distances shall be in accordance with the fabrication detail drawings.

Reaming shall be done only with the approval of the Engineer, and will be permitted, for the correction of undersized holes, for removing excessive galvanizing, and for holes off gauge line, to the extent that the connection cannot be made by loosening bolts in related connections. No hole shall be reamed more than one-eighth of its original diameter.

Reaming to remove fitting difficulty due to improperly set footings, to correct improper tower assembly and erection, that would distort holes or distort any member, or that would damage the galvanizing, is prohibited.

(6) Damage to Galvanizing/Paint

Small areas of galvanizing damaged by abrasion, in straightening bent pieces or by necessary clipping-in the field, shall be repaired by carefully cleaning the affected area and painting.

Damaged area shall be wiped with clean rags saturated with Xylene or equivalent solvent, followed by wire brushing then recleaned with solvent to

remove residue, and painted with one coat of "Galvanox", or approved equivalent.

Galvanizing damaged by drilling or punching shall be repaired by applying an Aluminum paste or zinc rich coating material to completely fill all voids between the bolt and the surfaces bared, or all exposed steel surfaces around the holes or on cuts on which such corrective work is permitted. The coating material shall be "Galvanox" or approved equivalent.

(7) Tower Signs and Aerial Markers

a) Material

All the plates i.e. danger sign, number & phase plates and aerial markers shall be baked ceramic surfaces on high grade steel base plates of minimum thickness of 1.5 mm except aerial marker plate which shall be of 3.0 mm thickness. The fabrication details and dimensions of the plates are shown on the drawings in Volume-II: Drawings.

The plates shall be painted with ceramic paint on both sides and shall be thoroughly cleaned before painting and the ceramic paint shall completely cover the front and back of the plates and also the edges of plates and the interior edges of the attachment holes. The ceramic paint shall be of even thickness, reasonably free from cracks, patches, pin holes, blisters and shall have a uniform gloss. The ceramic paint around the holes shall be protected by means of fiber washers.

Three coats of ceramic paint shall be applied on the danger sign and number plates. The first coating of black ceramic paint shall be applied on both sides of the plates. The other two coats of white ceramic paint shall be applied on the front side of the danger & number plates and yellow on aerial marker plates.

In case of phase plates, three coats of ceramic paint shall be applied. The first coat of black ceramic paint shall be applied on both sides. The other two coats of red, yellow and blue colour shall be applied as specified on both side of the plate.

Nos. of bolts, nuts, washers and fixtures where required shall be supplied with each plate as shown in the drawings. Bolts, nuts and washers to be supplied with the fixture shall be galvanized in accordance with ASTM A153.

b) Acceptance Tests (whichever applicable)

The following acceptance tests for Sign & Number Plates and Aerial Markers shall be carried out:

(i) Visual examination

- (ii) Verification of dimensions
- (iii) Galvanizing test (on fixture and nuts & bolts only)
- (iv) Resistance to thermal shock (vitreous enamel finish)

(i) Visual Examination:

Examination

Defects

a. Construction

Not of the shape given in relevant Drawing. Any crack on the nut& bolt.

b. Material

Not of proper material.

c. Finish

Galvanizing of bolts, nuts, washers and fixture not proper, presence of black spots, blisters, flux, dress, un-coated areas or any other defects. Bolts and nuts, rusty. Threads marred. The plates not properly enameled or presence of cracks, patches, pin-holes, blisters or any other defect. Letters and numbers broken or not properly enameled.

d. Marking

Missing or in-complete or not as per drawing.

(ii) Verification of Dimensions:

Dimensions of the danger, number, aerial markers, phase plates and fixtures shall conform to those given in drawings in Volume-II with allowable tolerances as marked on the individual drawings. Any variation from the specified dimensions shall constitute a defect.

(iii) Galvanizing Test:

The galvanizing of the nuts, bolts, washers and fixtures shall be tested in accordance with ASTM Specifications.

(iv) Resistance to Thermal Shock:

This test shall be carried out by subjecting the test specimen to radiant heat so as to reach a steady temperature of 185-195°C in about ten minutes. The temperature shall be measured by means of a surface pyrometer in contact with the top surface of the heated part of the specimen.

Remove the radiant heat and within 5 seconds quench the surface with 1000 ml of water at 15-20°C direct from an aspirator or other container through a 5 mm diameter tube, the end of the tube being 150 mm above the center of the heated portion of the test specimen. The flow rate of water shall be adjusted to 10 ml per second. It is convenient to mark the test area to ensure that the water is correctly applied. Dry the plate, replace in the same position under radiant heat source and repeat this procedure until six cycles have been completed.

After subjecting the test specimen to the above test, the vitreous enamel surface shall be considered to be resistant to thermal shock provided that the enamel shows no signs of flaking-off or crazing.

Sampling, Acceptance and Rejection:

Danger, number, phase plates, aerial markers and fixtures offered for acceptance shall be divided into lots containing up to 200 units in each lot. A sample of 12 units (3 each from danger, number, phase and aerial marker) shall be drawn at random from each lot. For thermal shock test two samples each shall be randomly selected from the offered lot.

The selected samples shall be subjected to the visual examination, verification of dimensions and galvanizing. If the number of defective units is two, the lot shall be accepted. If the number of defective units is more than two the lot shall be rejected. If the number of defective units is three, another sample of 12 units shall be selected at random and subjected to tests. If the number of defective units is again three or more then the lot shall be rejected and if the number of defective units is less than three then the lot shall be accepted.

c) Installation

Tower signs (danger sign and number signs) shall normally be installed on the tower so that they will be readily visible when viewed in the direction of increasing tower numbers. However, if signs installed in the normal position will not be readily visible from a permanent access road, they shall be installed on the tower faces best exposed to view from the access roads. These signs shall be supplied by the Contractor, and before the manufacturing, a sample shall be submitted to the Engineer for approval.

Aerial markers shall be installed on the upper side of bridge structure, as shown on the drawings. Two markers shall be installed on every tenth tower of the line; one marker faced back on line and the other ahead on line. These shall also be supplied by the Contractor.

(8) Anti-climbing Devices

a) Material

Material, dimensions and testing of the barbed wire shall be in accordance with ASTM A121.

The size and characteristics of the zinc coated barbed wire shall be as per design number 12-2-4-14R, Type Z with Class 3 coating.

The material of structural steel of anti-climbing devices shall be maximum of mild steel as per ASTM A36 and galvanization according to ASTM A153.

b) Acceptance Tests

The following acceptance tests for barbed wire shall be carried out:

- (i) Visual examination
- (ii) Verification of dimensions
- (iii) Galvanizing
- (iv) Physical
- (v) Mechanical

These tests shall be carried out on the selected samples as per the test procedure defined in the relevant ASTM specification.

c) Installation

An anti-climbing device will be installed on each tower as shown on the relevant drawings. The anti-climbing device normally will not be installed until all the tower and wire stringing work is completed.

The tower steel will be provided with holes for mounting the anti-climbing device brackets. The brackets shall be fabricated from mild steel and shall be galvanized in accordance with ASTM A153. The brackets along with barbed wire shall be supplied by the Contractor. Any holes required to be punched/drilled for installation of Anti-climbing Devices and applying of Galvanox, shall be carried out by the Contractor without any extra cost.

Anti-climbing device will be provided with an arrangement of barbed wire around the tower to prevent unauthorized person(s) from climbing the tower.

After erection, tower shall be cleaned of any foreign matter.

(9) Supporting Device for Joint Boxes of OPGW

Supporting device for joint boxes of OPGW to be designed, manufactured and supplied by OPGW manufacturer will be installed on the towers where joint boxes are required to be installed. Joint boxes will be installed on the tower on completion or just before completion of each OPGW reels of about 3.2 km length or wherever particularly required. The holes required to be drilled in the tower braces for installation of these supporting devices including provision and applying of Galvanox at the holes drilled shall be responsibility and to the cost of the Contractor.

(10) Welding of Nuts & Bolts

All nut & bolt connections of all types of towers shall be welded according to drawing in Volume-II, up to 8.0 m height from the top of chimney. After

welding, cold galvanized paint (zinc rich paint) having at least 90% zinc content shall be applied to the welded portion. At least two coats of the paint shall be applied. The cost of welding including application of paint shall be deemed to be included in the unit rate/tower quoted.

1.6 De-Stringing/Dismantling of Conductor, Earth wire, Insulators & Hardware etc.

The contractor shall be entirely responsible for any damage to the tower/ asset or during execution of work. Necessary calculations shall be carried out by the contractor to ensure that the loading on towers due to conductor tension as well as loads on account of de-stringing or re-conductoring activities shall be within limits.

Towers not designed for sided stringing shall be well guyed to avoid damage. In this respect, all the expenditure related to this work is deemed to be included in the price schedule and no extra payment shall be made.

Dismantled material (OPGW & allied accessories) will be handed over by the contractor to C-Type Store, 220kV Grid Station NGC Kala Shah Kaku.

1.7 Installation of RTV Coated Insulators and Hardware (if any)

Insulators and insulator hardware shall be assembled and installed as shown on the drawings and in accordance with the recommendations of the manufacturers.

No insulator with chips or cracks in the porcelain or defects in the fittings shall be installed.

Uncrated or otherwise unsupported strings of insulators shall not be picked up or suspended except by the upper units of the string. All cotter pins installed by the Manufacturer shall be checked.

All insulators shall be cleaned with a clean cloth when installed. The porcelain shall be bright and all other parts free from dirt. Only clean rags free from any abrasive material shall be used for cleaning insulators.

Wire brushes shall not be used for the cleaning of any parts, metal or otherwise. The use of solvents will not be permitted.

Each completed suspension assembly shall be adjusted to hang in a vertical plane through the axis of the tower. Where it would be possible, nuts, locknuts and cotter pins shall be placed to face the tower body.

Workmen shall not climb on insulators during stringing operations or at any other time.

When raising conductor strain assemblies, the insulators shall be kept under tension to avoid possibility of those being damaged due to excessive bending.

1.8 Stringing Conductors and OPGW

(1) General

The conductor and OPGW shall be installed as shown on the drawings and as specified herein.

(2) Safety Grounding

It shall be the Contractor's responsibility to take adequate safety precautions to protect his employees and others from the potential voltage build-up during construction. The voltage build-up may be comparatively small during normal operations, but could be lethal during switching and ground fault conditions on the energized parallel line. The following minimum safety and grounding procedures shall be followed by the Contractor during stringing operations in the Sections with parallel existing high voltage lines.

Temporary electrical grounds shall be placed at both ends of the section requiring special safety precautions and at intervals along the line which is under construction. The grounding sets installed at both ends of the section of line shall remain in place until the completion of the work and shall be removed as the last phase of cleanup. Hot stick shall be used for installing and removing the grounding sets.

All temporary grounds furnished and installed for protection shall be clearly visible for inspection and shall be flagged by use of a red cloth placed at the point of grounding. All grounds, except those placed at both ends of the section, and red flags shall be removed when they are no longer needed for protection.

All pulling and tensioning equipment shall be bonded and effectively grounded with approved-type driven grounds securely attached to the equipment. At least two driven grounds shall be used at both the pulling and tensioning set up. All conductive parts of the tensioning set up and equipment shall be operated from grounded or insulated platform provided with barricades or insulated walkways.

Running grounds shall be installed within 6 meters of the tensioning set up to constantly ground each sub-conductor and OPGW. At the pulling set up grounding shall be achieved by the use of block grounds connected to the adjacent tower by approved type ground leads bonded to the tower with approved type clamps. These connections shall be removed by the use of a hot-stick.

An approved-type driven ground shall be located at each side and within 3 meters of working areas where conductors or OPGW are being compressed to dead-end assemblies or spliced at ground level or jointed. The two ends to be spliced shall be effectively bonded together prior to and during splicing operation. Splicing and compression operations at dead-end assemblies shall be carried out on either an insulated platform or on a conductive metallic grounding mat roped off with an insulated walkway provided for access to the mat.

Installation and removal of temporary jumpers, at any time the conductor is not continuous, shall be performed by hot stick methods.

All conductors and OPGW shall be bonded to the tower with approved-type tower grounds at any isolated tower where it may be necessary to complete Work. Work on dead-end towers shall require grounding on both sides of the tower. Grounds may be removed when the Work is completed, providing the line is not left open circuited at an isolated tower at which work is being completed.

For all sections of the line under work, which are not in parallel with energized high voltage lines or otherwise requiring special safety precautions, only the provision of the grounding at the pulling and tensioning stations shall be required.

All provisions specified herein shall not prevent the Contractor from installing as many additional grounds as deemed necessary for the protection of workmen against static and accidental contacts with foreign circuits.

Clipping crews and all others working on the conductive pulling lines, isolated conductors or OPGW shall be protected by individual hot stick clamp type grounds installed at every work location.

(3) **Approved Type Grounding Material**

Approved type moving grounds shall be such as to exert constant pressure on the conductor or OPGW, and the contact rollers shall be with permanently lubricated-type bearings.

Approved-type driven ground rods shall be minimum of 16 mm diameter copper-weld or equivalent. Ground rods shall be driven into the ground a minimum of 2.5 meters.

Approved-type tower grounds shall be hot stick clamp grounds, bonded to the tower with a flexible ground lead.

Approved-type ground leads shall be at least 43 mm² cross-section copper or equivalent.

Approved-type insulated platforms shall be constructed of 65 mm nominal dimension lumber supported on 102 mm nominal dimension sills, or of materials of equivalent insulation.

At the tensioning set up, the insulated platform and rope barriers shall extend completely around the equipment set up in such a manner as to prevent any one standing on the ground from contacting any conductive part of the equipment.

(4) **General Safety Precautions**

Prior to initiation of the stringing in any section of the line the following shall be insured.

- (a) The installation of all towers within the section of the line is satisfactorily completed.
- (b) The stringing loads will not exceed the design loads for any of the towers.
- (c) If any tower is to be subjected to loads exceeding the design loads, the Contractor shall provide temporary bracing for such tower, and the bracing is subject to approval by the Engineer.
- (d) The stringing and sagging operation is such that no sudden loads will be applied on the towers.

(5) **Safety Precautions at Crossings**

Wherever any power line, communication line, highway or railroad is to be crossed, the owners shall be notified 30 days in advance and all temporary changes shall be pre-arranged.

The Contractor shall not erect towers near, or string conductors or OPGW over energized power circuits until a Hot-Line Order is placed on the energized line.

Qualified personnel shall remain at the site of work while the Hot-Line Order is in effect and shall ascertain that all personnel are in the clear and properly notified before the Hot-Line Order is released.

All existing lines which are de-energized for crossing shall be short-circuited and grounded at each side of the crossing.

Guard structures shall be provided at all crossings, as required for the protection of the conductor, line, road, structure, or feature being crossed, and as required by the owner, or the Employer.

Guard structures shall be of sufficient strength and stability to withstand the stresses to which they may be subjected.

As soon as a guard structure has served its purpose, it shall be removed and all holes shall be backfilled.

(6) Atmospheric Adverse Conditions

All pulling and stringing operations shall cease when either wind velocities are such as to cause conductors to deflect more than 1.5 meters at mid-span from the normal no wind position or there is any indication of lightning activity in the area.

(7) Handling and Stringing of Conductors

The conductor will be furnished in matched sets of twenty four (24) reels and shall be strung by the controlled tension method. At no time will the conductor be allowed to contact the ground or any object which might cause damage to the conductor.

All reels shall be inspected in the field prior to installation. Reels showing signs of careless or unusually rough handling, such as split frames or crashed outer protective lagging shall be inspected carefully for conductor damage.

Preparatory to un-reeling a conductor from the reel, the outer protective lagging shall be removed carefully, and all surfaces in contact with the running conductor shall be examined for protruding objects which might damage the conductor.

Care shall be taken to insure that no dirt is carried by the conductors from the reels. Reels shall be properly cleaned before starting stringing operation of any line section.

A spreader bar shall be used when lifting or lowering the reels. Full or partial reels shall not be dropped or rolled under any circumstances.

The four conductors in a bundle shall be strung simultaneously and shall hang in stringing blocks for the same period of time not exceeding 24 hours and, in exceptional cases, up to 48 hours before being sagged to the specified sag.

Four conductors shall start and end approximately at the same points of the line and stringing operations shall be planned to keep waste to a minimum. Lengths of conductor less than 100 meters are scrap lengths and shall not be spliced into the line without the approval of the Engineer. Jumpers shall be cut only from scrap lengths unless otherwise permitted.

Stringing sheaves may be hung on the insulator strings or in straps of equal length attached to the structure arms with suitable hooks or clamps. The sheave shall support the conductors at the same elevation as when clipped in.

Stringing of conductors and temporary guying of conductors shall be done by methods that will prevent damage to the conductor and structures in any way. Temporary guying/dead ending to tower footings will not be permitted. Where temporary dead end is required, the conductors shall be attached to suitable temporary anchors.

The general requirements for installation of the temporary anchors are as follows:

The angle formed by conductors/OPGW to the horizontal shall not exceed 15 degrees.

The anchors shall be aligned in the direction of stringing:

The anchors and their accessories shall withstand the maximum conductor tensions with a factor of safety of three.

Four sub-conductors of one phase shall be strung simultaneously by means of running board attached to a single pulling line with a swivel. Sub-conductors shall be connected to the running boards with a swivel connection and a stocking-type grip. The grips shall be secured to the conductor by means of a band installed around the tail end of the grip.

Following stringing, measures shall be taken to prevent the sub-conductors of the bundle from contacting each other. Before adjusting the sag of the conductors, sub-conductor slapping may be prevented by pulling each of them to a different sag which will separate them at least 153 mm vertically from either of the other sub-conductor at mid-span. After adjusting the sag, the following conditions will require sub-conductors tie-off: any time that sub-conductors slapping is noted, any time that prior to spacer installation the conductors are left unattended.

Two reel lengths of conductor may be pulled into the sheaves using only approved swivels and grips to make the connections between reel lengths. Double socking will be permitted, but permanent splices shall not be pulled through a sheave or bull-wheel.

All sheaves, swivels and grips shall be inspected daily for free and easy movements and to assure that such may be safely used. Sheaves carrying pulling lines shall not be used for conductors.

The conductor shall be kept clean by removing grease, dust or any other contamination. Cleaning shall be done immediately after the conductors leave the tensioning device. The method of cleaning shall be wiping with a clean cloth saturated with proper cleaning agent. When it is necessary to

slack the conductor at any time during the stringing operation, it shall be done with the approval of the Engineer. Rigid plank guard or lagging, or a combination of both shall be used to prevent damage. Lagging shall consist of nonmetallic material which will not damage the conductor and shall be rigid so that it will not be displaced by the motion of the conductor. It shall be free of any material, which can be transferred to the conductor.

Sections of the conductor damaged by application of gripping attachments or any other way during stringing shall be removed before the conductor is sagged in place.

The conductor repairs shall be done as outlined in Clause 1.7(11) (b) of the Technical Provisions.

All stringing operation must be conducted so that at no time will any suspension structure be subjected to longitudinal loads and at no time will any tension structure except dead end structure be subjected to excessive unbalanced loads resulting from longitudinal loads on opposing faces. At no time shall any structure be subjected to torsion. The vertical angles of pulling lines shall be such as to minimize the vertical loading on towers. The attachment of temporary guys and stringing equipment on towers shall be done only with approval of the Engineer.

The conductor reels, tensioners, and pulling machines shall be located as near to mid-span as possible but in no case shall the slope of the OPGW or conductor between any machine and the stringing block or any anchor lead be steeper than three horizontal to one vertical (15° - 20° to the horizontal).

The tension in the conductor during stringing shall be maintained as constant as practicable. The sag in each conductor must be maintained at least 20 percent greater than the sagging value specified in sag charts and the maximum pulling tension shall never exceed the sagging tensions.

If the conductor is left unattended, during stringing operations, it shall be freely suspended between stringing sheaves so as to provide a safe clear distance over ground or obstructions.

The minimum tension shall be such as to maintain the conductors at a minimum distance of 3 meters above ground or any obstacle.

When there is possibility of conductor being damaged due to wind or other conditions they shall immediately be fully tensioned. It is recommended that variations in stringing tensions be as small as possible and the tension shall be near the maximum permitted. Immediately after completing stringing of a section of the line, the tensions shall be increased to the maximum permitted stringing values.

The spinning of the conductors and OPGW shall be prevented during stringing. Unreeling of the conductors shall be closely watched at all times in order to detect any damage or flaw in the conductor.

(8) Handling and Stringing of OPGW

One 12mm OPGW shall be strung for the entire length of line. The specifications used for handling and stringing the OPGW shall be the same as for the conductors.

(9) Conductor Sagging

After being pulled into the sheaves all sub-conductors in a sag section shall be sagged within 24 hours.

The conductors shall be sagged in accordance with sag charts, furnished by the Contractor. The exact value of sag for a given span length at a given temperature can be ascertained from the appropriate table or by linear interpolation of data.

Conductor sagging temperature shall be measured by an accurate thermometer. A length of core shall be pulled from a 0.5 meter length of the conductor sufficient for thermometer to be inserted into the space vacated by the core.

The length of conductor shall be placed in the full sun at least 4 meters above the ground for a minimum period of 15 minutes. A thermometer in a container which simulates the effect of the conductor may also be used.

The length of conductor sagged in one operation shall be limited to the length that can be sagged satisfactorily, usually 3,000 meters to 6,000 meters.

Temporary snubs shall be used between a section previously sagged and clipped in and the section being sagged. Dead ending or snubbing will not be permitted on any tower except dead end towers at the normal point of attachment.

When conductors are sagged a mark shall be placed on each conductor at the last structure in each pull. The location of this mark shall be checked after the succeeding sag has been made to ascertain whether or not the back spans are still sagged properly. The wire grips may be removed only after the next section of the line has been sagged.

When sagging conductor shall have lengths of more than four spans, the sag shall be checked near each end span and at or near the middle span of the length being sagged. The length of the spans used for checking sag shall be as nearly equal to the ruling span as practicable.

The sag of each span more than 600 meters in length shall be checked in addition to above. Sag at sharp vertical angles and horizontal angles of 10 or more degrees shall also be checked on both sides of the angle.

The sags shall be determined by means of a transit or other approved methods. At least one person shall be provided to measure the correct sag for pulls up to five spans, two persons for six to ten spans and three persons for eleven spans or more.

The total number of spans to be checked shall be not less than two in a four-span section, three for a section up to two kilometers and in proportion for a longer section.

In the quad conductor bundle the sag of the two upper sub-conductors shall be the same. The lower sub-conductors shall be sagged from 30 to 60 mm more than the upper sub-conductors.

A tolerance of plus or minus 10 mm of sag per 30 meter of horizontal span length, but not to exceed 150 mm in any one span, will be permitted, provided that: (1) upper sub-conductors in the span assume the same sag; (2) the necessary ground clearance is obtained; (3) the conductor tension between successive sagging operations is equalized so that the suspension insulator assemblies will assume the proper position when the conductor is clipped in; (4) the sag in the lower sub-conductor of the bundle is 30 to 60 mm more than the sag in the upper sub-conductors.

Log books shall be maintained to record all conductor installation data and chronological progress.

The temperature, spans, tower, general weather, wind velocity and direction, sags, tensions, and drawing references shall be recorded for each section of conductor as it is being installed, tensioned and sagged. When possible, sagging operations shall be scheduled when wind velocity is at or near zero.

Radio or telephone communication shall be used to relay information and instructions between the conductor payout station, intermediate check points, mobile stations and the pulling stations at all times during stringing operations. A failure of communication requires immediate cessation of the conductor pulling operation.

(10) Conductor Clipping-in

After being sagged, the conductor shall be allowed to hang in the stringing blocks for not less than 2 hours before clipping-in is commenced, to permit the conductor tension to equalize.

Plumb marks shall be made on the conductors in the vertical plane through the centerline of the tower prior to clipping-in. Only paint, crayon, or wax pencil shall be used for marks on conductors.

All conductors marking in the section being sagged shall be accomplished while the conductors are in the sheaves and before clipping-in or dead ending is begun.

The total time during which the conductor is allowed to remain in the stringing blocks before being clipped-in shall not exceed 72 hours.

Torque wrenches shall be used to tighten all nuts on clamps. The torque applied shall be in conformance with the recommendation of the manufacturer.

Yoke plates for V-Vee string insulators shall be installed as shown on the drawings and shall hang at 90 degrees to the conductor axis within a tolerance of plus or minus 2.5 cm.

Well-padded pull-lift hooks or other approved methods shall be used for handling conductors during the clipping-in operation.

(11) Installation of Conductor and OPGW Accessories

(a) Splices and Dead Ends

All splices shall be of the compression type.

All splices shall be made at least 15 meters away from structures and no splices shall be made in dead end spans or spans greater than 600 meters or spans crossing over the highways, railroads, major canals, rivers and transmission lines of voltages greater than 33 kV unless approved by the Engineer.

As a rule not more than one joint or splice should be made in any one conductor in any one span. However, in exceptional cases, as in the repair of damaged conductors, or when necessary owing to stringing limitations two splices will be allowed.

The splices and compression dead ends shall be installed in accordance with the recommendations of the Manufacturer of the accessories.

Conductor shall be laid out straight for a distance of 15 meters and straightened at the end before preparation of the ends for splicing or dead-ending. The ends of the conductor shall be thoroughly cleaned immediately prior to compressing. After the compression has been completed, all corners, sharp projections and indentations shall be carefully rounded and smoothed, and tape, tape residue, and filler paste shall be removed from splice and conductor. If the completed splice requires straightening, it shall be straightened on a wood block by use of a wooden maul.

Splicing, dead-ending and repair of damaged conductor shall be done in the presence of nominated person of the Engineer.

If the completed splice or dead-end is not satisfactory, in the opinion of the Engineer or his nominated person, it shall be removed and a new splice or dead-end shall be properly installed.

The Contractor's inspector shall stamp his own initials on the aluminum sleeve of each compression joint and compression dead end completed under his supervision.

(b) Repair of Conductors

Damage is any deformity on the surface of the conductor which can be detected by eye or by feel and shall be repaired by whichever the following methods is appropriate:

- (i) Repair by manual polishing
- (ii) Installation of repair sleeves over the damaged part
- (iii) Installation of compression joints
- (iv) Replacement with new conductor

Slight damage such as superficial scratches or abrasions, which are not deeper than one-third the strand diameter, can be repaired by dressing with a fine emery cloth.

Severe cuts which cannot be repaired with emery cloth due to their depth or extension, and cause increase in the resistance of the external layers shall be repaired by use of repair sleeves, provided that not more than one-third of the outer layer is cut or damaged over a length of less than 10 centimeters.

Damages of extent greater than described in above paragraphs shall be repaired by replacing the damaged length of the cable using compression joints.

When there is repeated damage in the same span or in consecutive spans, the Engineer or his nominated person may require all conductors in these spans to be replaced.

In the case when signs of corrosion are detected during the stringing operation, the reels containing corroded conductors shall be set aside, the operation shall be interrupted and the Engineer or his nominated person shall be informed immediately.

Whenever a repair sleeve is installed, a rope cage shall be placed on the sleeve to ensure that there will be no damage from sub-conductor slapping prior to installation of the spacer-dampers.

(c) **Jumper Connections**

Where compression type dead-ends are used, the jumper shall be one continuous piece, and compression-type jumper terminals bolted to the compression-type dead-ends shall be used.

(12) **OPGW Jointing/Splicing and Installation of OPGW Joint Boxes**

OPGW jointing/splicing and joint boxes installation will be carried out by the Contractor. However, following general instructions should be followed:

No mid span joint shall be allowed in the OPGW. All joints shall be performed in a joint box located on the tower just above the location of anti-climbing device. OPGW jointing (splicing) and joint boxes installation including supporting device for joint boxes shall be executed by the Contractor. OPGW shall be dropped to the joint boxes along with tower braces by installing OPGW attaching clamps at about one meter interval.

1.9 Installation of Dampers

(1) **Spacer Dampers**

The two sub-conductors of each phase shall be secured to each other by means of spacer dampers installed strictly in accordance with data furnished.

The intervals, measured along the length of the conductors at which spacers are installed shall be as shown on the data sheets with tolerances not more than plus/minus 1.0 meter.

Spacer-dampers shall be installed in a span only after that span has been dead-ended and clipped-in. The installation of spacer dampers shall be completed in each section within 72 hours after the sub-conductors have been sagged.

The clamps shall be properly aligned on the conductors. Distorted shape of the spacer dampers will be considered an unsatisfactory installation and shall be corrected or the spacer damper replaced.

The bolts of the breakaway type shall be tightened until the outer head breaks off.

Spacer dampers shall be installed with the bolt heads in a downward position for viewing from the ground.

(2) **Vibration Dampers**

Vibration dampers shall be attached to the OPGW at the ends of all spans and as designated on the data sheets. The vibration dampers shall be fastened

securely to OPGW so that they will hang in vertical planes. Spacing of dampers shall be in accordance with the Drawings. Breakaway type bolts shall be tightened until the outer head breaks off.

2 PRE COMMISSIONING AND COMMISSIONING TESTS (whichever applicable)

2.1 Pre Commissioning Tests

(a) Mechanical Tests

1. For steel structures, ensure that structure type is as per specification/drawings/structure list.
2. Check galvanizing and thickness (rust is not acceptable).
3. Check bolt types and tightness (torque wrench method).
4. Ensure anti-climbing guards are correctly installed.
5. Check step bolt tightness.
6. For RTV Coated porcelain insulators, check insulators for chips, cracks, etc. Ensure correct number of insulators have been installed in each string. Ensure that cotter keys have been properly installed.
7. Make sure that insulators are clean and line is safe to be energized.
8. Check that all line hardware and fittings (insulators, corona rings, vibration dampers, spacer dampers, conductor clamps, armor rods, etc) is installed correctly and in correct locations as per specifications and drawings.
9. Check that all splices are correct and installed in correct span locations.
10. Check that all jumpers are installed correctly. Ensure correct clearances between jumper and structure as well as with other phases at acute angle locations.
11. Ensure there is no twist in the insulator string.
12. Check that OPGW is grounded to towers as specified.
13. Ensure that sags for phase and overhead ground conductors are even and according to the specification.
14. Check that ground clearances are as per specification.
15. Check circuit/phase identification plates, structure number plates, danger sign plates, etc. have been correctly installed at each structure and aerial markers at the required structures.

16. Check line/phase correctly transposed at the specified locations and clearance between the phases is as per specification.

(b) **Electrical Tests**

1. Check tower footing resistance as per specification.
2. Verification of physical phase arrangement.
3. Perform sequence impedance test (both zero and positive sequence).
4. Perform continuity and insulation test of complete transmission line with appropriate test equipment.
5. Tests on OPGW:
 - OTDR test of each fiber
 - Attenuation test
 - Continuity test

2.2 Commissioning Tests

1. Perform phase sequence/rotation check.
2. Inspection of Facilities for any visual/audible abnormality.

Bill of Quantities for Replacement of OPGW span on 220kV Sheikhupura-Ravi Transmission Line

BOQ FOR REPLACEMENT OF DAMAGED OPGW OF SPAN FROM TOWER NO. 14A TO TOWER NO. 14B OF 220KV SHEIKHUPURA-RAVI TRANSMISSION LINE

Item No.	Description	Unit of Measure ment	Quantity	Unit Rate	Total	Provincial Sales Tax (@16%)	Total Price Inclusive of Provincial Sales Tax
				PKR	PKR	PKR	PKR
1	2	3	4	5	6 = 4x5	7	8 = 6+7
A	<u>Stringing of OPGW</u>						
1	Transportation & installation of OPGW including installation of drop down lengths for joint boxes at the towers along with Allied hardware material including hardware assemblies, joint boxes accessories, dampers etc complete in all respect as per WAPDA/NGC specification & approved drawings from tower no. 14A to tower no. 14B on 220kV Sheikhupura - Ravi Transmission Line (Total 01 No. span)	Lumpsum	01				
2	Installation of New Joint Boxes OPGW to OPGW (A-Type) along-with testing of all 24 No. Fibers.	Lumpsum	02				
	Total of Item A:						
B	<u>Dismantling Work</u>			-			
1	Dismantling of existing OPGW from 220kV CCT along with allied hardware including Shifting and proper stacking of material at designated NGC warehouse.	Lumpsum	1				
	Total of Item B:						
C	<u>Testing and Commissioning</u>						
1	Testing and Commissioning of OPGW (end to end) as per technical specifications	Lumpsum	1				

BQ 1

	Total of Item C:				
	Total of Item A				
	Total of Item B				
	Total of Item C				
	Sub Total = (A+B+C)				
	Grand Total				

Notes:

1	Price of any other item specifically not covered in the Bill of Quantities but is required for the completion and satisfactory operation of the overhead line shall be deemed to be included in the Bill of Quantities.
2	If the Bidder failed to enter the rate of PST, the same shall be deemed to be included in unit price of the items. If the bidder explicitly mentions that the price is without PST, the bid shall be rejected.
3	Contractor has to shift the installation material from the NGC designated warehouse/store to site of work.
4	The Contractor shall be responsible for proper handling of the all material to be transported, dismantled and to be installed at site of work. Contractor has to shift the dismantled tower material from the site to NGC designated warehouse/store.
5	The Contractor shall take all safeguards at site for safety/security of men, material and machinery at his own responsibility and cost until the completion of works as per Scope/ BoQ.
6	In case of arithmetic error between total price and sum of product of line item unit rate and quantity of item, the later should prevail.

SECTION X

SOP FOR BLACKLISTING OF CONTRACTORS



NATIONAL TRANSMISSION & DESPATCH CO. LTD

Company Secretary

No. NTDC/CS/ 191-207

Dated: 27 - 02 - 2019

NOTIFICATION

Approval for revision of SoP for Blacklisting

Ref: This office notification No.NTDC/CS/1728-42 dated 25.07.2017.

The Board of Directors National Transmission & Despatch Company Limited (NTDC) in its 150th meeting held on 25.02.2019 against agenda item No.10 has unanimously resolved and approved the revised/amended SoP for Blacklisting.


Ijaz Ahmad
Company Secretary

Copy to:

1. Managing Director.
2. Dy. Managing Director (AD&M).
3. Dy. Managing Director (P&E).
4. All General Managers.
5. Chief Financial Officer.
6. Chief Law Officer.
7. Chief Internal Auditor.
8. Chief Information System.

A copy of the revised SoP for Blacklisting is enclosed.



NATIONAL TRANSMISSION & DESPATCH CO. LTD

Company Secretary

No. NTDC/CS/ 444-60

Dated: 29 - 03 - 2019

CORRIGENDUM

Approval for revision of SoP for Blacklisting

In continuation to this office Notification No.NTDC/CS/191-207 dated 27.02.2019 on the subject matter, the designation of Chief Engineer (Reliability Assessment) being a committee member in Chapter No.3 under Clause 3.1 at page # 7 of the approved revised/amended SoP for Blacklisting may be read as 'Chief Engineer (Reliability Compliance)'.

Note:

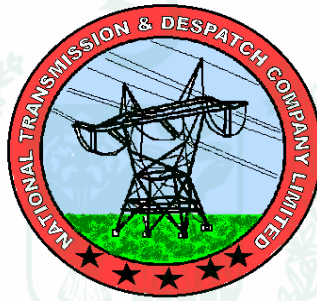
- All other contents of the notification will remain intact.

Ijaz Ahmad
Company Secretary

Copy to:

1. Managing Director.
2. Dy. Managing Director (AD&M).
3. Dy. Managing Director (P&E).
4. All General Managers.
5. Chief Financial Officer.
6. Chief Law Officer.
7. Chief Internal Auditor.
8. Chief Information System.

NATIONAL TRANSMISSION AND DESPATCH COMPANY LIMITED (NTDC)



REVISED SOP FOR BLACKLISTING

(As on 25.02.2019)

Table of Contents

CHAPTER NO.1.....	3
1.1 INTRODUCTION	3
1.2 EXTENT OF APPLICATION.....	3
CHAPTER NO. 2.....	5
2. REASONS OF BLACKLISTING	5
CHAPTER NO. 3.....	7
3. FORMULATION OF “NTDC’S RIGHTS PROTECTION COMMITTEE”	7
CHAPTER NO. 4.....	8
4.1 PROCEDURE FOR BLACKLISTING	8
4.2 INITIATION OF AN ACTION.....	8
4.3 DECISION.....	8
4.4 COMMUNICATION OF DECISION	9
4.5 PERIOD OF DEBARMENT FOR BLACKLISTED FIRMS	9
Note: All the penalties given herein above will be in addition to the consequences already agreed by the parties in the contract or any other document and other remedies provided under the law.	
4.6 ACTION AFTER FIRMS ARE PLACED ON BLACKLISTING	9
4.7 EFFECTIVENESS.....	10
APPENDIX-1	11
APPENDIX-2	13
REFERENCES	

CHAPTER NO.1

1.1 INTRODUCTION

The main objectives of any procurement process are transparency, economy, fairness and efficiency so that value for money is achieved.

Blacklisting is one of the most effective tools used in the struggle against inefficiencies and corruption in connection with public procurement. In addition, it serves as a major deterrent against any material breach of contract and further ensures the timely execution of projects by holding delinquent persons accountable.

Rule-19 “Blacklisting of suppliers and contractors” of the Public Procurement Rules, 2004 (hereinafter “**PPRA Rules**”) stipulates that;

“The procuring agencies shall specify a mechanism and manner to permanently or temporarily bar, from participating in their respective procurement proceedings, suppliers and contractors who either consistently fail to provide satisfactory performances or are found to be indulging in corrupt or fraudulent practices. Such barring action shall be duly publicized and communicated to the Authority: Provided that any supplier or contractor who is to be blacklisted shall be accorded adequate opportunity of being heard.”

In the light of the Clause above, this SOP has been drafted for procurements made by NTDC.

Any capitalised terms and abbreviations used in this SOP which are not defined herein shall have the meanings given to them in Public Procurement Regulatory Authority Ordinance, 2002 (hereinafter “**PPRA Ordinance**”) and PPRA Rules.

1.2 EXTENT OF APPLICATION

- i. The procedure shall be applicable and remain in force, along with any amendments thereto, within NTDC until any clear instructions or guidelines are imparted by the Government through PPRA, PEC, or any other competent forum.
- ii. The procedure shall also be applicable on the pre-qualified firms.
- iii. The procedure shall be applicable on any “Person”, which for the purposes of this SOP shall *interalia* include suppliers, bidders, contractors, consultants, firms, individuals, and organizations transacting business with NTDC.
- iv. Wherever any provision of this SOP shall be in conflict with provisions of any applicable guidelines of donor agencies, or any other applicable Statute / Law or Rule enforced at the time in Pakistan, the provisions of such applicable guidelines, laws, or rules shall prevail.

- v. This SOP shall become a part of the future Bidding Documents and the person(s) will submit an Undertaking along-with his bid that he has read and accepts the provisions of this SOP. Non-submission of an Undertaking may result in rejection of his bid. The said Undertaking will subsequently become part of the Contract Agreement as well.



CHAPTER NO. 2

2. REASONS OF BLACKLISTING

2.1 The causes and reasons to be taken into consideration for Debarment / Blacklisting of any person are given as under:

2.1.1 Pre- Award Stage:

The following shall be considered, *interalia*, the causes / reasons for initiating proceedings under this SOP at the Pre-Award Stage:

- i. Indulging in Corrupt, Fraudulent as well as Collusive practices.
- ii. Submission of false and spurious documents, making false statements, making frivolous complaints and allegations to gain undue advantage.
- iii. Commission of embezzlement, criminal breach of trust, theft, cheating, forgery, bribery, falsification or destruction of records, receiving stolen property, false use of trademark, securing fraudulent registration, giving false evidence, furnishing of false information of serious nature.
- iv. Submission of false bid security or infringement of documents to get undue monetary or any other benefit.
- v. Breach of confidentiality of evaluation process as mentioned in Appendix-1 based on illegal access or in any way to get undue benefit or to provide benefit or to frustrate the bidding/evaluation process. This will also include attempts to sabotage the bidding process directly or indirectly.

2.1.2 Post- Award Stage:

The following shall be considered, *interalia*, the causes / reasons for initiating proceedings under this SOP at the Post-Award Stage:-

- i. Extraordinary delay in signing or refusal to accept the Notification of Award and/or the contract without any cogent reason.
- ii. Misconduct, i.e., failure to proceed with the signed contract, withdrawal of commitments, quoting an unreasonably and unfairly low financial offer and subsequently withdrawing such an offer, frustrating the evaluation/bidding process and not responding to written communication in a reasonable time.
- iii. Causes mentioned in Clause 2.1.1 (i, ii & iii) above.
- iv. Submission of fake / frivolous or mutilated Performance Guarantee or Advance Payment Guarantee etc.

- v. Non-satisfactory performance as mentioned in Appendix-2 during the execution of the contract.
- vi. Non-performance or Breach of provisions / clauses of the contract agreements.
- vii. Notwithstanding the warranty/defect liability period, any defect in a product, equipment, plant, facility or services rendered that may subsequently surface during field operations within 5 years of its commissioning.
- viii. Failure to honour obligations within warranty period or defect liability period as defined in the contract.

2.1.3 Other Causes

- i. The person is blacklisted by any Government department in Pakistan, or it is established that the firm is involved in any kind of corruption or corrupt practices anywhere in the world.
- ii. Violations of provisions / instructions set down in the Bidding Documents.
- iii. Any attempt / activity to malign or bring NTDC into disrepute and harm its interest(s).
- iv. Person(s) blacklisted by International Financial Institutions (donor agencies) will be liable to be blacklisted after receipt of confirmation from the donor agencies without any further proceeding.
- v. Any other cause deemed just and appropriate by NTDC in the given circumstances.

Note:

- (1) If above mentioned causes occur either on part of the principal bidder or the local agent, both shall be considered for blacklisting / debarment.
- (2) The authorization of the foreign bidder to local agent shall contain his complete particulars including the name of the company, name of the owner, National Tax number (NTN), CNIC (Computerized National Identity Card) No. etc. In case, the said information is found to be missing, even after calling for the same within a reasonable time, the authority letter shall not be accepted.
- (3) The Bidding Documents shall be issued against original authority letter or in case of scanned copy, the email of the foreign bidder shall be enclosed. However, at the time of bidding, the original authority letter shall be attached with the bid. In the absence of the same, the bid shall be rejected.

CHAPTER NO. 3

3. FORMULATION OF “NTDC’S RIGHTS PROTECTION COMMITTEE”

3.1 A permanent Committee namely “NTDC’s Rights Protection Committee (**RPC or Committee**)” comprising of the following members shall examine the justification of the reasons given by the Project Authority prior to blacklisting / debarment of any firm/supplier/contractor/ individual.

- | | |
|--|----------|
| • General Manager (Performance Assessment) NTDC | Convener |
| • Chief Engineer (Reliability Compliance) NTDC | Member |
| • Representative of the Chief Law Officer’s Office | Member |

Depending upon the nature of the case, the Committee may consult or appoint / nominate additional members from within NTDC with the approval of Managing Director (NTDC), provided that the Committee consists of an odd number of individuals as per spirit of Rule 48(1) of the PPRA Rules. Independence of any additional members shall be ensured while making the selection of such additional members. Furthermore, the aforementioned RPC shall also be authorized to seek external expert advice as and when required.

CHAPTER NO. 4

4.1 PROCEDURE FOR BLACKLISTING

Upon receipt of or obtaining information and/or knowledge that any person(s) is involved in practices mentioned in Chapter-2 earlier, the concerned Project Authority / formation shall promptly formulate its recommendations and submit through MD NTDC to NTDC RPC along with its findings, details of charges and documentary evidences to initiate proceedings under this SOP.

4.2 INITIATION OF AN ACTION

- (i) Within a period of 15 days after receiving the recommendations of Blacklisting / Debarment from the concerned Project Authority, the Convener of the Committee shall issue a Show Cause Notice (“**Notice**”) thereby informing the Person about the alleged charges and shall provide an opportunity to the defend said charges within a time period of 15 (fifteen) days.
- (ii) The person(s) shall be accorded adequate opportunity of hearing in order to defend the charges within the given timelines.
- (iii) The Notice to the Person shall be sent at the mailing/postal address as provided under the Contract or any other address provided by way of subsequent written communication by the Person. The non-receipt of the Notice due to incorrect / change in mailing address without any written communication shall not be attributable to NTDC. In case of non-receipt of any reply from the accused person within the formulated time, but not less than the time given in 4.2 (i) above, the Committee shall have the right to proceed on Ex-parte basis.

4.3 DECISION

- i. The committee shall hold an independent inquiry/investigation as the case may be, and, which may include site visits and interviews with the parties concerned. The Committee shall complete the entire inquiry/investigation, preferably within a period of 30 days after receipt of response from the person against whom proceedings under this SOP have been initiated and shall present the report to the MD NTDC.

- ii. If required, the Committee may report the case to an appropriate law enforcement agency depending upon the nature of the case for detailed investigations with the prior approval of Managing Director (NTDC).
- iii. The person against whom proceedings have been initiated under this SOP shall not proceed for arbitration/litigation during the proceedings for blacklisting.

4.4 COMMUNICATION OF DECISION

After recommendation for blacklisting by “NTDC’s Rights Protection Committee (RPC)”, the person concerned shall be informed within 10 days of such decision. The decision of the Committee will be notified on NTDC’s and PPRA’s websites and shall also be conveyed to Pakistan Engineering Council. Blacklisting of firms shall also be conveyed by circular to other Government Departments. All other relevant procuring agencies including PEPCO, DISCOs, and WAPDA, etc., will also be informed simultaneously.

4.5 PERIOD OF DEBARMENT FOR BLACKLISTED FIRMS

- (i) The Blacklisting on the grounds and reasons specified herein above in Chapter No. 2 shall be for a reasonable specified period of time and as a general rule of prudence, the period may not exceed three years, except in cases where debarment/blacklisting has been done by any other government department or an International Financial Institution (Donor Agency).
- (ii) In case the person has been blacklisted by the government department or the International Financial Institution (donor agency), the period of blacklisting/debarment shall be for a maximum period of 3 years or the time period for which the concerned government department/International Financial Institution (Donor Agency) debarred the contractor (whichever is higher).

4.6 ACTION AFTER PERSONS ARE PLACED ON BLACKLISTING LIST.

- i. The decision of blacklisting will be immediately circulated to all concerned as mentioned at Clause 4.4 above.
- ii. In case of a contract already awarded to a person which has been blacklisted and termination is either not possible or not feasible, the concerned Project Authority may proceed in this case to complete the contract with the approval of Competent Authority.
- iii. The blacklisted person shall stand disqualified from bidding from the date of decision against them. Any pending bids shall also stand rejected. If a contract has

already been awarded to person, it shall be voidable at the option of NTDC as per 4.6 (ii) above.

- iv. A separate register or data base will be maintained for blacklisted firms indicating reasons and period.

4.7 EFFECTIVENESS

These guidelines / SOP or any amendments thereof shall take effect immediately after its approval from Board of Directors of NTDC.



APPENDIX-1

PROCESS TO DEAL WITH FRIVOLOUS COMPLAINTS

It has been frequently observed that after opening of tenders, the bidders start to influence the evaluation process. Such attempts result in delay in finalizing of award of contract and cause financial loss to the National exchequer. The evaluation process is confidential till publication of award of contract process.

Provision of guidelines of international donor agencies and PPRA provides sufficient opportunity to bidders for redressal of their grievances. Hence, the attempts made by the bidders during evaluation process or thereafter to influence the contract award decisions fall under the definition of corrupt and fraudulent practices. Therefore, during bidding stage, the following mechanism shall be adopted in case of receipt of any frivolous complaint from the bidder.

- i. Anonymous complaints shall not be entertained.
- ii. The Procuring Agency reserves the right to call for an affidavit from the complainant verifying the truthfulness and correctness of the contents of the complaint.
- iii. The notice of displeasure and explanation will be immediately sent to those persons who lodge frivolous complaint(s) during the evaluation process.
 - iii (a) If the person itself or through its agent or any third party does not refrain from making frivolous complaints in the same tender or any other tender, an official warning will be sent and their case may be sent to “NTDC’s Rights Protection Committee” which may analyse the situation and suggest action including the rejection of the bid of the complainant. However, Project Authority may reject the bid even in first instance depending upon nature of the case or provision of the Bidding Documents.
 - iii (b) If the same person itself or through its agent or any third party lodges a frivolous complaint in another tender floating in parallel before decision of the Grievance Committee, its bid will straight forwardly be rejected by the project authority. It may also be debarred to participate in the next tender for a minimum period of six months under intimation to the Grievance Committee and MD NTDC.
- iv. In order to monitor the record of the persons, a data base will be maintained at NTDC’s website and the offices of the project authorities regarding such persons who consistently lodge frivolous complaints during the evaluation process by making clandestine access to confidential record and hamper the award of contract process.

NOTE: It is clarified that the process provided above in Appendix 1 is to discourage anonymous and frivolous complaints only, and does not bar any person feeling aggrieved by any act of the procuring agency from lodging a genuine complaint/grievance as provided under Rule 48 of the PPRA Rules, 2004.



APPENDIX-2

GUIDELINES FOR EVALUATION OF PERFORMANCE OF CONTRACTORS

- i. After signing of the contract, the Project authority (or the Consultant / Engineer) must monitor and evaluate the Contractor's performance, that is, whether the Contractor is fulfilling his obligations based on the terms of the contract and plans that were developed and agreed upon with the Project authority at the time of signing of contract or during kick-off meetings..
- ii. Though the performance evaluation of any person is an on-going process, which takes place throughout the duration of the contract and also during the Defect Liability / Warranty Period, nevertheless, a person's Performance Evaluation Report may be prepared for the consumption and benefit of the procuring agency or for any other purpose at the completion of the project, as the case may be.
- iii. The performance evaluation report shall be prepared for all contracts of more than Rs. 100 million. When based on the Evaluation Report, the performance of a person is non-satisfactory, the procuring agency may initiate the case for blacklisting of the person in accordance with the terms of this SOP. For the avoidance of doubt, consistent failure to provide satisfactory performance shall also include performances in a single or multiple contracts executed or being executed by the same person, as the case may be.
- iv. In case of any extra-ordinary delay in performance of a single contract of vital and critical importance, the procuring agency shall have the right to initiate proceedings under this SOP and/or avail any other remedy provided under the law which may *interalia* include: termination of the contract, recovery of losses, debarring the person from participation in future tenders. The procuring agency shall be the sole judge to determine the projects of vital or critical importance.
- v. In case of ordinary delay in performance in 2 consecutive contracts within a period of 3 years, the procuring agency shall have the right to initiate proceedings under this SOP and/or avail any other remedy provided under the law which may *interalia* include: termination of the contract, recovery of losses, debarring the person from participation in future tenders.
- vi. The proceedings under this SOP shall not prejudice any other rights and/or remedies available to the procuring agency under the contract documents and/or any other law in force.

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: _____

Page _____ of _____ pages

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:	[insert period (start and end dates) for which this Contractor’s Representative or Key Personnel is available to work on this contract]
Time commitment:	[insert period (start and end dates) for which this Contractor’s Representative or Key Personnel is available to work on this contract]

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.