



**GOVERNMENT OF KHYBER PAKHTUNKHWA  
PAKHTUNKHWA ENERGY DEVELOPMENT ORGANIZATION  
(PEDO)**

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**BIDDING DOCUMENTS**

**(Single Stage Two Envelope)**

**FOR**

**Design, Manufacture, Supply, Installation, Testing & Commissioning  
of 132 kV Gas Insulated Switchgear (GIS) and Associated Works**

**17 MW Ranolia Hydro Power Project**

**PROJECT ID : RHPP-GIS-01**

**JUNE, 2024**

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# **INVITATION FOR BIDS**

**INVITATION FOR BID FOR “DESIGN, MANUFACTURE, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 132 kV GAS INSULATED SWITCHGEAR (GIS) AND ASSOCIATED WORKS AT 17 MW RANOLIA HYDROPOWER PROJECT”**

Date : \_\_\_\_\_  
Loan/Credit No. : \_\_\_\_\_  
Bid Reference No. : \_\_\_\_\_

The Pakhtunkhwa Energy Development Organization has applied for a loan from the Asian Development Bank towards the cost of **Rehabilitation and Reconstruction of 17 MW Ranolia Hydropower Project, District Kohistan Lower**. It is intended that part of the proceeds of the loan/ will be applied to eligible payments under the Contract for the Design, Manufacturing, Installation, Commissioning and Testing of 132 kV Gas Insulated Switchgear and Associated Works at 17 MW Ranolia Hydropower Project on *Single Stage Two Envelope* procedure. Bidding is open to all eligible Bidders. The following terms and conditions shall apply.

1. The bidder must have a valid Pakistan Engineering Council registration in the Category C-1 or above. A foreign bidder is entitled to bid only in a joint venture with a Pakistani constructor in accordance with the relevant provisions of bidding documents.
2. The local bidder can engage a foreign Manufacturer, as a JV partner or a specialized sub-contractor, with proven performance of the work. The local bidder must have authorization letter from the specialized sub-contractor / Manufacturer for the subject work.
3. The bidder must be registered with Khyber Pakhtunkhwa Revenue Authority (KPRA) and Federal Board of Revenue (FBR).
4. Bidders may obtain further information from, inspect at and acquire the Bidding Documents from the office of the Employer, addressed below, during working hours or can download from PEDO website via [pedokp.gov.pk/Main/tenders](http://pedokp.gov.pk/Main/tenders), upon submission of a written application along with a non-refundable fee of Rs 3000/- only in the form of Deposit at Call from a scheduled Bank of Pakistan in favor of CEO, PEDO.
5. The bid must be accompanied by a Bid Security in the shape of Deposit at Call from a Scheduled Bank of Pakistan, in the amount **2%** of the bid price or an equivalent amount in a freely convertible currency.
6. A Pre-bid meeting will be held at the Project Director, RHPP office at the address given below on July 09, 2024 at 1100 Hrs.
7. The last date for submission of bids is 25<sup>th</sup> July, 2024 at 1500 Hr. Bids will be opened on the same day, in the presence of bidders' representatives who choose to attend at Main Committee Room PEDO House, Address: 38/B-2, PEDO House, Phase-5, Hayatabad Peshawar at 1530 Hr.

**Project Director (RHPP)**  
PEDO House, 2<sup>nd</sup> Floor, Room No 331,  
Sector B/2, Phase -V, Hayatabad, Peshawar  
Islamic Republic of Pakistan  
Tel: 091-9217004, Fax: 091-9217340

# **Part-I**

## **Instruction To Bidders**

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## INSTRUCTIONS TO BIDDERS AND APPENDICES

### (A) GENERAL

#### IB.1 Scope of Bid and Source of Funds

##### 1.1 Scope of Bid

\_\_\_\_\_ (hereinafter called the “Employer”) wishes to receive bids for the following scope of work:( *For Brief description of the Works – Refer to Bidding Data Sheet*)

Bidders must quote prices for the complete scope of work. Any Bid covering partial scope of work will be non-responsive, pursuant to Clause IB.24.

##### 1.2 Source of Funds

The Employer has received funds from the [ *Refer to Bidding Data Sheet* ] and it is intended that part of the proceeds of the funds will be applied to eligible payments under the Contract for which these Bidding Documents are issued.

#### IB.2 Eligible Bidders

##### 2.1 Bidding is open to all firms and persons meeting the following requirements:

- a) Duly licensed by the Pakistan Engineering Council (PEC) in Category or above [*Refer to bidding Data Sheet*].
- b) Foreign Bidders from eligible countries as per Appendix ‘A’ to Instructions to Bidders.
- c) duly enlisted/prequalified with the Employer (if applicable). [*Refer to bidding Data Sheet*].

#### IB.3 Eligible Goods and Services

##### 3.1 All Goods & ancillary Services to be supplied under this Contract shall have their origin in eligible countries as per Appendix ‘A’ to Instructions to Bidders and all expenditures made under the Contract will be limited to such Goods and Services.

##### 3.2 For purpose of this Clause, “origin” means the place where the Goods are mined, grown or produced or from where the ancillary services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembling of components, a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.

##### 3.3 The origin of Goods and Services is distinct from the nationality of the Bidder.

#### IB.4 Cost of Bidding

##### 4.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding process.

### (B) BIDDING DOCUMENTS

#### IB.5 Contents of Bidding Documents

##### 5.1 In addition to Invitation for Bids, the Bidding Documents are those stated below, and should be read in conjunction with any Addenda issued in accordance with Clause IB.7.

1. Instructions to Bidders (ITB) with Appendices to ITB

2. Letter of Technical Bid & Schedules to Bid  
Schedules to Bid are the following:

Schedules to Bid are the following:

- (i) Schedule A: Specific Works Data
  - (ii) Schedule B: Work to be Performed by Subcontractors
  - (iii) Schedule C: Proposed Programme of Works
  - (iv) Schedule D: Deviations from Technical Provisions
  - (v) Schedule E: Deviations from Contractual Conditions
  - (vi) Schedule F: Method of Performing Works
  - (vii) Schedule G: Proposed Organization
  - (viii) Schedule H: Integrity Pact
3. Schedule of Prices
  4. Preamble to Conditions of Contract
  5. General Conditions of Contract
  6. Particular Conditions of Contract
  7. Standard Forms include the following:
    - (i) Form of Bid Security
    - (ii) Form of Contract Agreement
    - (iii) Form of Performance Security
    - (iv) Form of Bank Guarantee/Bond for Advance Payment
  8. Specifications - Special Provisions
  9. Specifications - Technical Provisions
  10. Drawing
- 5.2 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 Bidders own risk. Pursuant to Clause IB.24, Bids which are not substantially responsive to the requirements of the Bidding Documents will be rejected.

#### **IB.6 Clarification of Bidding Documents**

- 6.1 A prospective bidder requiring any clarification(s) in respect of the Bidding Documents may notify the Employer with a copy to the Engineer in writing or by telex or fax at the address:  
***[Refer to bidding Data Sheet]***

Employer will examine the request for clarification of the Bidding Documents which it receives not later than twenty-eight (28) days prior to the deadline for the submission of bids and if needed will issue the clarification/amendment of the Bidding Documents at least fourteen (14) days before the date of submission of Bids (without identifying the source of enquiry) to all prospective bidders who have purchased the Bidding Documents.

#### **IB.7 Amendment of Bidding Documents**

- 7.1 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 by issuing addendum.
- 7.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub-Clause

7.1 hereof, and shall be communicated in writing to all purchasers of the Bidding Documents. Prospective Bidders shall acknowledge receipt of each addendum in writing to the Employer. The Bidder shall also confirm in the Form of Bid that the information contained in such addenda have been considered in preparing his Bid.

- 7.3 To afford prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Employer may at its discretion extend the deadline for submission of Bids in accordance with Clause IB.19.

### (C) PREPARATION OF BIDS

#### **IB.8 Language of Bid**

- 8.1 The Bid prepared by the Bidder and all correspondence and documents relating to the Bid, exchanged by the Bidder and the Project Manager/Engineer shall be written in the English language, provided that any printed literature furnished by the Bidder may be written in another language so long as accompanied by an English translation of its pertinent passages in which case, for purposes of interpretation of the Bid, the English translation shall govern.

#### **IB.9 Documents Comprising the Bid**

- 9.1 The Bid prepared by the Bidder shall comprise the following components:
- (a) Covering Letter
  - (b) Letters of Bids duly filled, signed and sealed, in accordance with Clause IB.17.
  - (c) Schedules (A to L) to Bid duly filled and signed, in accordance with the instructions contained therein.
  - (d) Schedule of Prices completed in accordance with Clauses IB.11 and IB.12 in separate sealed envelope.
  - (e) Bid Security furnished in accordance with Clause IB.15.
  - (f) Power of Attorney in accordance with Clause IB 17.5.
  - (g) Joint Venture Agreement (if applicable). A foreign Bidder is entitled to bid only in a joint venture with a Pakistani constructor in accordance with the provisions of relevant PEC bye-laws. *[Refer to bidding Data Sheet]*
  - (h) Documentary evidence established in accordance with Clause IB.13 that the Bidder is eligible to Bid and is qualified to perform the Contract if its Bid is accepted (past performance and present commitments to be filled in as per schedule I to Bid).
  - (i) Documentary evidence established in accordance with Clause IB.14 that the Plant and ancillary Services to be supplied by the Bidder are eligible Plant and Services and conform to the Bidding Documents.
  - (j) Bidders applying for eligibility for domestic preference in bid evaluation shall supply all information & evidence to establish the claim for domestic preference required to satisfy the criteria for eligibility as described in Clause IB.27. The particulars for domestic Goods prescribed in Appendix C to these Instructions shall also be filled in to substantiate claim for domestic preference. *[Refer to bidding Data Sheet]*
  - (k) Any other documents prescribed in Particular Conditions of Contract or Technical Provisions to be submitted with the Bid.

#### **IB.10 Letters of Bids and Schedules**

- 10.1 The Bidder shall complete, sign and seal the Letters of Bids, Schedules (A to L, or as modified) to Bid and Schedule of Prices furnished in the Bidding Documents and shall also enclose other information as detailed in Clause IB.9.

- 10.2 For the purpose of granting a margin of domestic preference pursuant to Clause IB.27, the Employer will classify the Bids, when submitted in one of three groups as follows subject to change, if any, as per policy of the Federal Government as applicable on the date of bid opening: *[Refer to bidding Data Sheet]*
- (a) **Group ‘A’ Bid.** (i) For Goods for which labour, raw materials and components from within Pakistan account for at least 20% of the ex-factory bid price of the products offered (ii) For Goods for which labour, raw materials and components from within Pakistan account for over 20% and up to 30% of the ex-factory bid price of the products offered (iii) For Goods for which labour, raw materials and components from within Pakistan account for over 30% of the ex-factory bid price of the products offered;
  - (b) **Group ‘B’ Bid.** For Goods manufactured in Pakistan for which the domestic value added in the manufacturing cost is less than 20% of the ex-factory bid price; and
  - (c) **Group ‘C’ Bid.** For Goods of foreign origin.  
In preparing their bids, the Bidders, whether local or foreign, shall enter in the Schedule of Prices, ex-factory price for indigenously manufactured products and CIF price as well as customs duty and sales tax and other import charges for products to be imported from outside Pakistan.

#### **IB.11 Bid Prices**

- 11.1 The Bidder shall fill up the Schedule of Prices attached to these documents indicating the unit rates and prices of the Works to be performed under the Contract. Prices on the Schedule of Prices shall be entered keeping in view the instructions contained in the Preamble to the Schedule of Prices.
- 11.2 The Bidder shall fill in rates and prices for all items of the Works described in the Schedule of Prices. 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 Schedule of Prices.
- 11.3 The Bidder’s breakup of price components in accordance with Sub-Clause 11.1 above will be solely for the purpose of facilitating the comparison of Bids by the Employer and will not in any way limit its right to contract on any of the terms offered.
- 11.4 Unless otherwise stipulated in the Conditions of Contract, prices quoted by the Bidder shall remain fixed during the Bidder’s performance of the Contract and not subject to variation on any account. When the Bidders are required to quote only fixed price(s), a Bid submitted with an adjustable price quotation will be treated as non-responsive, pursuant to Clause IB.24.
- 11.5 Any discount offered shall be valid for at least the period of validity of the Bid. A discount valid for lesser period shall be considered null and void.

#### **IB.12 Currencies of Bid**

- 12.1 Prices shall be quoted in the following currencies:
- (a) For Plant/Goods and Services which the Bidder will supply from within Pakistan, the prices shall be quoted in the Pak. Rupees.
  - (b) For Plant/Goods and Services which the Bidder will supply from outside Pakistan, the prices shall be quoted either in the U.S Dollars or in any other freely convertible currency. *[Refer to bidding Data Sheet]*
- 12.2 Further, a Bidder expecting to incur a portion of its expenditure in the performance of the Contract in more than one currency (but use no more than 3 foreign currencies), and wishing to be paid accordingly, shall so indicate in its bid. *[Refer to bidding Data Sheet]*

- 12.3 The currencies of payment shall be as stated in Particular Conditions of Contract. However, provisions in Subclause 12.1 & 12.2 above, shall not in any way constitute a contractual or legal binding on the Employer for the payment in currencies required by the contractor.

### **IB.13 Documents Establishing Bidder's Eligibility and Qualifications**

**13.1** Pursuant to Clause IB.9, the Bidder shall furnish, as part of its Bid, documents establishing the Bidder's eligibility to Bid and its qualifications to perform the Contract if its Bid is accepted.

**13.2** The documentary evidence of the Bidder's eligibility to Bid shall establish to the Employer's satisfaction that the Bidder, at the time of submission of its Bid is from an eligible source country as defined under Clause IB.2.

**13.3** The documentary evidence of the Bidder's qualifications to perform the Contract if its Bid is accepted, shall establish to the Employer's satisfaction:

- (a) that, in the case of a Bidder offering to supply Plant under the Contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized by the Plant manufacturer or producer to supply the Plant to Pakistan;
- (b) that the Bidder/Manufacturer has the financial, technical and production capability necessary to perform the Contract; and
- (c) that, in the case of a Bidder not doing business within Pakistan the Bidder is or will be (if successful) represented by an agent in Pakistan equipped and able to carry out the Supplier's maintenance, repair and spare parts stocking obligations prescribed by the Conditions of Contract and/or Technical Provisions.

**13.4** (a) Bidder/Manufacturer must possess and provide evidence of the following experience: *[Refer to Bidding Data Sheet]*

The Bidder shall certify the capacity and capability of the plant (from which Goods are now offered) for manufacturing, quality assurance and testing facilities, qualified man-power and production/delivery of quality materials according to bid specifications and delivery requirements. Besides, such plant should have produced same items for at least \_\_\_\_\_ years and such Goods (Insert the number of years) shall have proven successful in the field for at least \_\_\_\_\_ (Insert the number of years) years and the bidder shall submit with the bid all necessary documentation in this regard. The Employer/Engineer will have the right to verify the particulars regarding the plant and other related information furnished with the bid and the joint venture as well as the partners thereof shall be liable for disqualification in the event of any mis-statement/mis-representation on their part.

The bidder shall furnish documentary evidence of qualification on the Form "Evidence of Bidder's Capability" (Appendix B to these Instructions)

- (b) The bidder should have an average annual turnover in the last five years equal to or more than the Total Bid Price. Alternately, the bidder should have successfully completed in the last five years any specific project having value equal to or higher than the total Bid Price. *[Refer to bidding Data Sheet]*

### **13.5 Joint Venture**

In order for a Joint Venture to qualify:

- (a) at least one of the partners of joint venture shall satisfy the relevant experience criteria specified in Sub-Clause 13.4(a) hereinabove.
- (b) All firms comprising the joint venture shall be legally constituted as per PEC by-Laws
- (c) All partners of the joint venture shall at all times and under all circumstances be liable jointly and severally to Employer for the execution of the entire Contract in accordance with the Contract terms and conditions and a statement to this effect shall

- be included in the authorization mentioned under para (f) below as well as in the Form of Bid and Form of Contract Agreement (in case of a successful Bidder).
- (d) The Form of Bid, and in the case of successful Bidder, the Form of Contract Agreement, shall be signed so as to be legally binding on all partners.
  - (e) 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.
  - (f) The partner-in-charge shall be authorized to incur liabilities, receive payments and receive instructions for and on behalf of any or all partners of the joint venture.
  - (g) 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.
- 13.6** The Bidder shall propose, in order of his priority; plant, equipment or goods of not more than three (3) Manufacturers. Employer at his own jurisdiction will evaluate the plant, equipment or goods of only one of such Manufacturers.
- IB.14 Documents Establishing Plant's Eligibility and Conformity to Bidding Documents**
- 14.1 Pursuant to Clause IB.9, the bidder shall furnish, as part of its bid, documents establishing the eligibility and conformity to the Bidding Documents of all Goods and Services which the bidder proposes to perform under the Contract.
- 14.2 The documentary evidence of the Goods and Services eligibility shall establish to the Employer's satisfaction that they will have their origin in an eligible source country as defined under Clause IB.3. A certificate of origin issued at the time of shipment will satisfy the requirements of the said Clause.
- 14.3 The documentary evidence of the Goods and Services' conformity to the Bidding Documents may be in the form of literature, drawings and data and shall furnish:
- (a) A detailed description of the Goods, essential technical and performance characteristics.
  - (b) Complete set of technical information, description data, literature and drawings as required in accordance with Schedule A to Bid, Specific Works Data. This will include but not be limited to the following:
    - (i) A sufficient number of drawings, photographs, catalogues, illustrations and such other information as is necessary to illustrate clearly the significant characteristics such as general construction dimensions and other relevant information about the Goods to be furnished.
    - (ii) Details of equipment and machinery with capacity.
    - (iii) Any other information which is required for evaluation purposes.
  - (c) A clause-by-clause commentary on Technical Provisions, provided with the Bidding Documents, demonstrating the Goods' and Services' substantial responsiveness to those Specifications or a statement of deviations and exceptions to the provisions of the Technical Provisions as required in Schedule D to Bid.
- 14.4 For purpose of the commentary to be furnished pursuant to Sub-Clause 14.3(c) above, the

Bidder shall note that standards for workmanship, material and equipment, and references to brand names or catalogue numbers, designated by the Engineer in the Technical Provisions are intended to be descriptive only and not restrictive. The bidder may substitute alternative standards, brand names and/or catalogue numbers in its bid, provided that it demonstrates to the Engineer's satisfaction that the substitutions are substantially equivalent or superior to those designated in the Technical Provisions. Copies of the standards proposed by the bidder other than those specified in the Bidding Documents shall be furnished.

#### **IB.15 Bid Security**

- 15.1 Each Bidder shall furnish, as part of his Bid, a Bid Security of an amount not less than [*Refer to Bidding Data Sheet*]..... in Pak Rupees or an equivalent amount in any 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 or an insurance company having atleast AA rating from PACRA/JCR in favour of the Employer valid for a period twenty-eight (28) days beyond the bid validity date. [*Refer to bidding Data Sheet*]
- 15.3 The Bid Security is required to protect the Employer against the risk of Bidder's conduct which would warrant the security's forfeiture, pursuant to Sub-Clause 15.7 hereof.
- 15.4 Any Bid not accompanied by an acceptable Bid Security shall be considered by the Employer as non-responsive, pursuant to Clause IB.24.
- 15.5 The Bid securities of unsuccessful Bidders will be returned upon award of contract to the successful Bidder or on the expiry of validity of Bid Security whichever is earlier.
- 15.6 The Bid Security of the successful Bidder will be returned when the Bidder has furnished the required Performance Security, pursuant to Clause IB.34 and signed the Contract Agreement, pursuant to Clause IB.35.
- 15.7 The Bid Security may be forfeited:
  - (a) if a Bidder withdraws his Bid during the period of Bid validity; or
  - (b) if a Bidder does not accept the correction of his Bid Price, pursuant to Sub-Clause 24.2 hereof; or
  - (c) in the case of a successful Bidder, if he fails to:
    - (i) furnish the required Performance Security in accordance with Clause IB.34, or
    - (ii) sign the Contract Agreement, in accordance with Clause IB.35.

#### **IB.16 Validity of Bids**

- 16.1 Bids shall remain valid for [*Refer to Bidding Data Sheet*] days after the date of Bid opening as prescribed in Clause IB.19.
- 16.2 In exceptional circumstances prior to expiry of original Bid validity period, the Employer may request the Bidders to 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 forfeiture of his Bid Security. A Bidder agreeing to the request 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 in which case, the Employer will be obligated to compensate the Bidders, upon substantiation for their increase in costs (if it is a fixed price bid).

### **IB.17 Format and Signing of Bid**

- 17.1 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.
- 17.2 All Schedules to Bid are to be properly completed and signed.
- 17.3 No alteration is to be made in the Form of Bid nor in the Schedules thereto except in filling up the blanks as directed. If any alteration be made or if these instructions be not fully complied with, the Bid may be rejected.
- 17.4 Each Bidder shall prepare one (1) Original and [*Refer to Bidding Data Sheet*] copies, of the documents comprising the bid as described in Clause IB.9 and clearly mark them "ORIGINAL" and "COPY" as appropriate. In the event of discrepancy between them, the original shall prevail.
- 17.5 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign (in the case of copies, Photostats are also acceptable). This shall be indicated by submitting a written Power of Attorney authorizing the signatory of the Bidder to act for and on behalf of the Bidder. All pages of the Bid and Schedules to Bid shall be initialed and stamped by the person or persons signing the Bid.
- 17.6 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.
- 17.7 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.
- 17.8 Bidders should retain a copy of the Bidding Documents as their file copy.

### **(D) SUBMISSION OF BIDS**

### **IB.18 Sealing and Marking of Bids**

- 18.1 Each Bidder shall submit his Bid as under:
  - (a) ORIGINAL and each COPY of the Bid shall be separately sealed and put in separate envelopes and marked as such.
  - (b) The envelopes containing the ORIGINAL and COPIES of both Technical Bids and Price Bids will be put in one sealed envelope and addressed/identified as given in Sub-Clause 18.2 hereof.
- 18.2 The inner and outer envelopes shall;
  - (a) be addressed to the Employer at the address given in Sub-Clause 6.1 heretofore.
  - (b) bear the Project name, Contract No. and Date of opening of Bid.
  - (c) provide a warning not to open before the time and date for Bid opening.
- 18.3 The Bid shall be delivered in person or sent by registered mail at the address to Employer as mentioned in the Invitation to Bids.
- 18.4 In addition to the identification required in Sub-Clause 18.2 hereof, the inner envelope shall indicate the name and address of the Bidder to enable the Bid to be returned unopened in case it is declared "late" pursuant to Clause IB.20.
- 18.5 If the outer envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.

### **IB.19 Deadline for Submission of Bids**

- 19.1 (a) Bids must be received by the Employer at the address specified in Invitation for Bids not later than the time and date stipulated in the Invitation for Bids.
- (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.
- (c) Where delivery of a Bid is by mail and the Bidder wishes to receive an acknowledgment of receipt of such Bid, he shall make a request for such acknowledgment in a separate letter attached to but not included in the sealed Bid package.
- (d) Upon request, acknowledgment of receipt of Bids will be provided to those making delivery in person or by messenger.
- 19.2 Bids submitted through telegraph, telex, fax or e-mail shall not be considered.
- 19.3 The Employer may, at his discretion, extend the deadline for submission of Bids by issuing an addendum in accordance with Clause IB.7, 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.20 Late Bids**

- 20.1 (a) Any Bid received by the Employer after the dead line for submission of Bids prescribed in Clause IB.19 will be returned unopened to such Bidder.
- (b) Delays in the mail, delays of person in transit, or delivery of a Bid to the wrong office shall not be accepted as an excuse for failure to deliver a Bid at the proper place and time. It shall be the Bidder's responsibility to determine the manner in which timely delivery of his Bid will be accomplished either in person, by messenger, courier service or by mail.

### **IB.21 Modification, Substitution and Withdrawal of Bids**

- 21.1 Any Bidder may modify, substitute or withdraw his Bid after Bid submission provided that modification, substitution or written notice of the withdrawal is received by the Employer prior to the deadline for submission of Bids.
- 21.2 The modification, substitution or withdrawal of any Bid shall be prepared, sealed, marked and delivered in accordance with the provisions of Clause IB.18 with the outer and inner envelopes additionally marked "MODIFICATION", "SUBSTITUTION" or "WITHDRAWAL", as appropriate.
- 21.3 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 pursuant to Clause IB.15.

## **(E) BID OPENING AND EVALUATION**

### **IB.22 Bid Opening**

- 22.1 A committee consisting of nominated members by the Employer and by the Engineer will open the Bids, including withdrawals, substitution and modifications made pursuant to Clause IB.21, in the presence of Bidders' representatives who choose to attend, at the time, date and location stipulated in the Invitation for Bids.

The Bidders' representatives who are present shall sign in a register evidencing their attendance. [*Refer to Bidding Data Sheet* ]

- 22.2 Envelopes marked “MODIFICATION”, “SUBSTITUTION” or “WITHDRAWAL” shall be opened and read out first and the name of the Bidder shall be read out. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause IB.21 shall not be opened.
- 22.3 The Bidder’s name, Bid Prices, unit rates, any discount offered, Bid modifications, substitutions and withdrawals, the presence or absence of Bid Security, and such other details as the Employer at its discretion may consider appropriate, will be announced by the Employer at the Bid opening. The Employer will record minutes of Bid opening.
- Any Bid Price or discount which is not read out and recorded at Bid opening will not be taken into account in the evaluation of Bid.
- 22.4 Discounts offered for lesser period than the Bid validity shall not be considered in evaluation.

### **IB.23 Clarification of Bids**

- 23.1 To assist in the examination, evaluation and comparison of Bids, the Engineer may, at its discretion, ask the Bidder for a clarification of its Bid. The request for clarification and the response shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted.

### **IB.24 Preliminary Examination & Determination of Responsiveness of Bids**

- 24.1 Prior to detailed evaluation pursuant to Clause IB.26,
- (a) the Engineer will examine the Bids to determine whether;
    - (i) the Bid is complete and does not deviate from the scope,
    - (ii) any computational errors have been made,
    - (iii) required sureties have been furnished,
    - (iv) the documents have been properly signed,
    - (v) the Bid is valid till required period,
    - (vi) the Bid prices are firm during currency of contract if it is a fixed price bid,
    - (vii) completion period offered is within specified limits,
    - (viii) the Bidder/Manufacturer is eligible to Bid and possesses the requisite experience,
    - (ix) the Bid does not deviate from basic technical requirements; and
    - (x) the Bids are generally in order.
  - (b) A bid is likely not to be considered, if;
    - (i) it is unsigned,
    - (ii) its validity is less than specified,
    - (iii) it is submitted for incomplete scope of work,
    - (iv) it indicates completion period later than specified,
    - (v) it indicates that Works and materials to be supplied do not meet eligibility requirements,
    - (vi) it indicates that Bid prices do not include the amount of income tax,
  - (c) A bid will not be considered, if;
    - (i) it is not accompanied with bid security,
    - (ii) it is submitted by a Bidder who has participated in more than one Bid,
    - (iii) it is received after the deadline for submission of Bids,
    - (iv) it is submitted through fax, telex, telegram or email,
    - (v) it indicates that prices quoted are not firm during currency of the contract whereas the Bidders are required to quote fixed price(s),
    - (vi) the Bidder refuses to accept arithmetic correction,
    - (vii) it is materially and substantially different from the Conditions/ Specifications of

the Bidding Documents.

24.2 Arithmetical errors will be rectified on the following basis:

If there is a discrepancy between the unit price and total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If there is a discrepancy between the words and figures the amount in words shall prevail. If there is a discrepancy between the total Bid price entered in Form of Price Bid and the total shown in Schedule of Prices Summary, the amount stated in the Form of Price Bid will be corrected by the Employer/Engineer in accordance with the Corrected Schedule of Prices.

If the Bidder does not accept the corrected amount of Bid, his Bid will be rejected and his Bid Security forfeited.

24.3 Prior to the detailed evaluation, pursuant to Clause IB.26 the Employer/Project Manager/Engineer will determine the substantial responsiveness of each Bid to the Bidding Documents. For purpose of these Clauses, a substantially responsive Bid is one which conforms to all the terms and conditions of the Bidding Documents without material deviations.

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) whose rectification/adoption would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

The Employer's/Engineer's determination of a Bid responsiveness will be based on the contents of the Bid itself without recourse to irrelevant evidence.

24.4 A Bid determined as substantially non-responsive will be rejected and will not subsequently be made responsive by the Bidder by correction of the non-conformity.

24.5 Any minor informality or non-conformity or irregularity in a Bid which does not constitute a material deviation may be waived by Employer, as long as the waiver does not prejudice or affect the relative ranking of any Bidder.

#### **IB.25 Conversion to Single Currency**

25.1 To facilitate evaluation and comparison, the Employer/Engineer will convert all Bid Prices, expressed in the amounts in various currencies in which bid Price is quoted, to Pak Rupees at the telegraphic Transfer and Over Draft (TT&OD) composite selling exchange rate published/authorized by the State Bank of Pakistan and applicable to similar transaction, on the date of bid opening. *[Refer to bidding Data Sheet]*

#### **IB.26 Detailed Evaluation of Bids**

26.1 The Employer/Engineer will evaluate and compare only the bids previously determined to be substantially responsive pursuant to Clause IB.24 as per requirements given hereunder.

26.2 Evaluation and Comparison of Bids

- (a) Bids will be evaluated for each item and/or complete scope of work. *[Refer to bidding Data Sheet]*
- (b) Basis of Price Comparison The prices will be compared on the basis of the Evaluate Bid Price pursuant to Para (e) herein below.
- (c) Technical Evaluation *[Refer to bidding Data Sheet]*

It will be examined in detail whether the Goods offered by the bidder comply with the Technical Provisions of the Bidding Documents. For this purpose, the bidder's data submitted with the bid will be compared with the specific work data prescribed by the Employer and technical features/criteria of the Goods detailed in the Technical Provisions. Other technical information submitted with the bid regarding the Scope of Work will also be reviewed.

(d) Commercial Evaluation

It will be examined in detail whether the bids comply with the commercial/contractual conditions of the Bidding Documents. It is expected that no major deviation/stipulation shall be taken by the bidders.

(e) Evaluated Bid Price

In evaluating the bids, the Employer will determine for each bid in addition to the Bid Price, the following factors (adjustments) in the manner and to the extent indicated below to determine the Evaluated Bid Price:

- (i) making any correction for errors pursuant to Sub-Clause 24.2 hereof.
- (ii) excluding Provisional Sums, if any, but including priced Daywork.
- (iii) making an appropriate adjustment for any other acceptable variation or deviation.

### 26.3 Evaluation Methods

Pursuant to Sub-Clause 26.2, Para (e)(iii) following evaluation methods for price adjustments will be followed:

- (a) Price Adjustment for Completeness in Scope of Work
- (b) Price Adjustment for Technical Compliance
- (c) Price Adjustment for Commercial Compliance
- (d) Price Adjustment for Deviations in Terms of Payment
- (e) Price Adjustment for completion Schedule
- (i) Price Adjustment for Completeness in Scope of Work

In case of omission in the scope of work of a quoted item no price adjustment for the omitted item(s) shall be applied provided that the Bidder has mentioned in his bid that the same is covered in any other item.

The price adjustment shall not justify any additional payment by the Employer. The price(s) of omitted item(s) shall be deemed covered by other prices of the Schedule of Prices.

(ii) Price Adjustment for Technical Compliance

The cost of making good any deficiency resulting from technical non compliance will be added to the Corrected Total Bid Price for comparison purposes only. The adjustments will be applied taking the highest price quoted by other Bidders being evaluated in detail in their original Bids for corresponding item. In case of non availability of price from other Bidders, the price will be estimated by the Engineer.

(iii) Price Adjustment for Commercial Compliance

The cost of making good any deficiency resulting from any quantifiable variations and deviations from the Bid Schedules and Conditions of Contract, as determined by the Engineer will be added to the Corrected Total Bid Price for comparison purpose only. Adjustment for commercial compliance will be based on Corrected Total Bid Prices.

(iv) Price Adjustment for Deviation in Terms of Payment

If a bid deviates from the terms of payment/payment conditions as specified in the Conditions of Contract and if such deviation is considered acceptable to the Employer, mark-up earned for any earlier payments involved in the terms outlined in the Bid as compared to those stipulated in the Conditions of Contract shall be calculated at the following mark-up rates: **[Refer to Bidding Data Sheet]**

- for foreign currency component: \_\_\_\_\_ per annum (insert rate)

- for local currency component: \_\_\_\_\_ per annum (insert rate)

and shall be added to the Corrected Total Bid Price for comparison purposes only.

(v) Price Adjustment for Completion Schedule

Bids indicating completion in advance of the dates stated in Preamble to Conditions of Contract, no credit will be given in this evaluation.

Bids indicating completion period later than the period set out in Preamble to Conditions of Contract shall be adjusted in the evaluation by adding a factor of 0.05% of the Corrected Total Bid Price for each calendar day of completion later than specified period of the completion. **[Refer to bidding Data sheet]**

Bids indicating completion beyond \_\_\_\_\_ days later (insert number) than the dates set out in Preamble to Conditions of Contract, shall not be considered and rejected as non-responsive.

- 26.4 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 Schedule of Prices 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.34 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.

**IB.27. Domestic Preference [Refer to bidding Data sheet]**

- 27.1 In the comparison of evaluated Bids, the Goods manufactured in Pakistan, will be granted a margin of preference in accordance with the following procedures, provided the Bidder shall have established to the satisfaction of Employer that the manufacturing cost of such Goods includes a domestic value addition equal to at least 20% of the ex-factory Bid price of such Goods. Bidders applying for domestic preference shall fill in Appendix C to these Instructions to substantiate their claim.
- 27.2 The Employer/Project Manager/Engineer will first review the Bids to determine, the Bid group classification in accordance with Sub-Clause 10.2 hereof.
- 27.3 The comparison shall be ex-factory price of the Goods to be offered from within Pakistan (such prices to include all costs as well as custom duties and taxes paid or payable on raw materials and components incorporated or to be incorporated in the Goods) and the DDP (CIF + Customs duty, sales tax and other import charges) Pakistan seaport price of the Goods to be offered from outside Pakistan.
- 27.4 The lowest evaluated Bid of each Group shall first be determined by comparing all evaluated Bids in each Group among themselves taking into account:
- (a) In the case of Goods manufactured in Pakistan, sales tax, local body charges and other similar taxes which will be payable on the furnished Goods in Pakistan.
  - (b) In the case of Goods of foreign origin offered from abroad, customs duties, sales tax and other import charges which will be payable on furnished Goods in Pakistan.

- (c) In the case of Goods of foreign origin already located in Pakistan, customs duty, sales tax and import charges on CIF price as applicable for Sub-Clause 27.4(b) here above.
- 27.5 The price preference to Group A bids will be:
- (i) 15% of the ex-factory bid price, if the value addition through indigenous manufacturing is at least 20%;
  - (ii) 20% of the ex-factory bid price, if the value addition through indigenous manufacturing is over 20% and up to 30%; and
  - (iii) 25% of the ex-factory bid price, if the value addition through indigenous manufacturing is over 30%.
- 27.6 The applicable price preference i.e., as per Sub-Clause 27.5 here above will be applied to Group A Bid by reducing the ex-factory bid price.

#### **IB.28 Process to be Confidential**

- 28.1 Subject to Clause 23 heretofore, no Bidder shall contact Employer and/or Project Manager/Engineer on any matter relating to its Bid from the time of the Bid opening to the time the Bid evaluation result is announced by the Employer. The evaluation result shall be announced at least ten (10) days prior to award of Contract. 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.
- 28.2 Any effort by a Bidder to influence Employer and/or Project Manager/Engineer in the Bid evaluation, Bid comparison or Contract Award decisions may result in the rejection of his Bid. Whereas any Bidder feeling aggrieved may lodge a written complaint not later than fifteen (15) days after the announcement of the Bid evaluation result; however, mere fact of lodging a complaint shall not warrant suspension of the procurement process.

### **(F) AWARD OF CONTRACT**

#### **IB.29. Post-Qualification**

- 29.1 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 therefore in writing. They shall form part of the records of that bid evaluation report.
- 29.2 The determination will take into account the Bidder's financial, technical and production capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualification submitted under Appendix B to Instructions to Bidders "Evidence of Bidder's Capability" by the Bidder pursuant to Clause IB.13, as well as such other information as required under the Bidding Documents.
- 29.3 An affirmative determination will be a pre-requisite for award of the Contract to the lowest evaluated Bidder. A negative determination will result in rejection of that Bidder's Bid in which event, Employer will proceed to undertake a similar determination of the next lowest evaluated Bidder's capabilities to perform the Contract satisfactorily.

#### **IB.30 Award Criteria**

- 30.1 Subject to Clause IB.32, 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 qualified to satisfactorily perform the Contract in accordance with the provisions of Clause IB.29.

**IB.31 Employer’s Right to Vary Quantities**

31.1 Employer reserves the right at the time of award of Contract to increase or decrease by up to 15% the quantity of Plant and Services contained in the Schedule of Prices without any change in the unit price or other terms and conditions.

**IB.32 Employer’s Right to Accept any Bid and to Reject any or all Bids**

32.1 Notwithstanding Clause IB.30, 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 to inform the affected Bidders of the grounds for the Employer’s action except that the grounds for its rejection 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.

32.2 No negotiation with the Bidder having been evaluated as lowest responsive or any other Bidder shall be permitted. However, the Employer may have clarification meeting(s) to get clarified any item(s) in the Bid evaluation report. [*Refer to bidding Data Sheet*]

**IB.33 Notification of Award**

33.1 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 design, execution and completion of the Works/facility by the Contractor as prescribed by the Contract (hereinafter and in the Conditions of Contract called the “Contract Price”).

33.2 The Letter of Acceptance 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.

33.3 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.

**IB.34 Performance Security**

34.1 The successful Bidder shall furnish to the Employer a Performance Security in the form and the amount stipulated in the Conditions of Contract within a period of twenty eight (28) days after the receipt of Letter of Acceptance.

34.2 Failure of the successful Bidder to comply with the requirements of Sub-Clauses IB.34.1, IB.35 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

**IB.35 Signing of Contract Agreement**

35.1 Within fourteen (14) days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the Employer will send to the successful Bidder the Form of Contract Agreement provided in the Bidding Documents, duly filled in and incorporating all agreements between the parties for signing and return it to the Employer.

35.2 The formal Agreement between the Employer and the successful Bidder shall be executed within fourteen (14) days of the receipt of such Form of Contract Agreement by the successful Bidder from the Employer.

**(G) ADDITIONAL INSTRUCTIONS**

**IB.36 Instructions not Part of Contract**

36.1 Bids shall be prepared and submitted in accordance with the above Instructions to Bidders including Additional Instructions which are provided to assist Bidders in preparing their Bids,

and do not constitute part of the Bid or the Contract Documents.

### **IB.37 Contract Documents**

37.1 The Documents which will be included in the Contract are listed in the Form of Contract Agreement set out in these Bidding Documents.

### **IB.38 Sufficiency of Bid**

38.1 Each Bidder shall satisfy himself before bidding as to the correctness and sufficiency of his Bid and of the rates and prices entered in the Schedule of Prices. Except insofar as it is otherwise expressly provided in the Contract, the rates and prices entered in the Schedule of Price shall cover all his obligations under the Contract and all matters and things necessary for the proper completion of the Works/facility.

### **IB.39 One Bid per Bidder**

39.1 Each Bidder shall submit only one Bid either by himself, or as a partner in a joint venture. A Bidder who submits or participates in more than one Bid will be disqualified and Bids submitted by him shall not be considered for evaluation and award.

### **IB.40 Bidder to inform himself**

40.1 The Bidder is advised to obtain for himself at his own cost and responsibility all information that may be necessary for preparing the Bid and entering into a Contract for execution of the Works/facility. This shall include but not be limited to the following:

- (a) inquiries on Pakistani Income Tax to the Commissioner of the Income Tax and Sales Tax, .....[Refer to Bidding Data Sheet ]
- (b) inquiries on customs duties and other import taxes, to the concerned authorities of Customs and Excise Department.
- (c) information regarding port clearance facilities, loading and unloading facilities, storage facilities, transportation facilities and congestion at Pakistan seaports.
- (d) investigations regarding transport conditions and the probable conditions which will exist at the time the Plant will be actually transported

### **IB.41 Alternate Proposals by Bidder [Refer to Bidding Data Sheet ]**

41.1 Should any Bidder consider that he can offer any advantage 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.

41.2 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.42 Site Visit and Local Conditions**

42.1 Bidder must verify and supplement by his own investigations the information about site and local conditions. However, Employer will assist the Bidder wherever practicable and possible.

### **IB.43 Integrity Pact**

43.1 The Bidder shall sign and stamp the Integrity Pact provided in Schedule-H 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 Bid non-responsive.

## **BIDDING DATA SHEET (BDS)**

<b>BIDDING DATA SHEET (BDS)</b>	
<b>IB Clause Reference</b>	<b>A. GENERAL</b>
<b>IB 1</b>	<b>Scope of Bid and Source of Funds</b>
1.1	<p><b>Scope of Work</b> The scope covers the Design, Manufacture, Supply, Testing, Installation and Commissioning of 132 kV GIS (GAS INSULATED SWITCHGEAR), Power transformer and Associated Works for 17 MW Ranolia Hydropower Plant. The plant was affected by the floods of August 2022 The scope also include replacement, restoration and refurbishment works of components of the installed system. Further details are available in bidding documents (Schedule-A to Bid - Specific Works Data).</p> <p>The location is at Project Site of Ranolia Hydropower Plant (35°02'44.5" N ,72°53'36.9" E) which is a run-of-the-river type hydropower project with installed capacity of 17 MW located on Ranolia Khwar, a tributary of Dubair Khwar, District Kohistan of Khyber Pakhtunkhwa Province. The Hydropower plant has been constructed about 850 m upstream of Dubair Bazar which is 20 Kilometers North of Besham on main Karakorum Highway. Besham is about 272 Km from Islamabad via Abbottabad and about 270 Km from Peshawar via Swat.</p> <p>The existing AIS (Air Insulated Switchgear) has most of its components either washed away or damaged by the devastating floods of August 2022. The Switchyard constructed on the downstream side of the powerhouse got damaged and a transformer (Transformer # 02) along with other electrical components were washed away. Two 220 kV steel towers located on the right bank of Dubair Khwar along with stringing works of about 01 km were also washed away. Other damaged/washed away components consist of, but not limited to, isolators, surge arrestor bays, breakers, 132KV Busbars, isolators, and Bay panel boxes etc.</p> <p>Stipulated Period for Completion of Works: 18 months (540 days)</p>
1.2	<p><b>Source of Funds</b> Asian Development Bank under the Loan No. 3476-Pak</p>
<b>IB 2</b>	<b>Eligible Bidders</b>
2.1 (a)	<p>i. Duly licensed by Pakistan Engineering Council (PEC) in C-1 or above Category for Pakistani bidders. In the event, the bidder/JV becomes successful, the foreign bidder shall register himself with PEC in category "FC-1" before the award of the Contract.</p> <p>ii. All the local bidders including those in JV shall be registered with the Federal Board of Revenue (FBR) and Khyber Pakhtunkhwa Revenue Authority (KPRA) and shall preferably have 'Active' status as of the latest date for bid submission. In the case of registered firms with 'In-Active' status, the firm must register itself prior to the issuance of LOA if their bid becomes successful. Failure to do so shall lead to the rejection of their bids.</p> <p>iii. The Foreign Firms shall produce registration with FBR &amp; KPRA before award of the Contract.</p>
2.1 (c)	<p><b>Pre-Qualification:</b> Not-Applicable</p>
	<b>B. BIDDING DOCUMENT</b>
<b>IB 6</b>	<b>Clarification of Bidding Documents</b>

6.1	<p><b>(a) <u>For clarification and Bid Submission purposes only, the Employer's address is</u></b></p> <p>The contact office for requesting clarifications is:  <b>Project Director (RHPP),</b>  Room No. 331, PEDO House  Plot No. 38 B/2, Phase V, Hayatabad Peshawar  Ph No: (+92-91) 9217004  E-mail: <a href="mailto:aziz.ahmad@pedo.pk">aziz.ahmad@pedo.pk</a></p> <p>For bid clarification, if any, the client will examine the request for clarification of the Bidding Documents which it receives not later than 10 (Ten) days prior to the deadline for the bid submission and if needed will issue the clarification/amendment of the Bidding Documents at least 5 (five) days before the date of submission of Bids to all Bidders who have purchased the Bidding Documents.</p> <p><b>(b) <u>For Bid Opening only, the Employer's address:</u></b></p> <p><b>i. For Hard Copies</b></p> <p>Main Committee Room  PEDO House  Address: 38/B-2, PEDO House, Phase-V, Hayatabad Peshawar.</p> <p><b>ii. For Soft Copy</b>  <a href="mailto:etender.pedo.pk">etender.pedo.pk</a></p> <p>The bidder shall also submit /provide the soft copy (pdf format) of their technical and financial proposal at the time of Bid submission, in case the bidder is unable to upload the same on aforementioned website.</p>
<b>IB 9</b>	<b>Documents Comprising the Bid</b>
9.1 (g)	The Joint Venture Agreement shall be as per PEC format including schedules 1, 2, 3, & 4.
9.1 (j)	<b>Domestic Preference</b> Not Applicable
	<b>C. PREPARATION OF BID</b>
<b>IB 10</b>	<b>Letters of Bids and Schedules</b>
10.2	<b>Domestic Preference</b> Not Applicable
<b>IB 12</b>	<b>Currencies of Bid</b>
12.1	(b) For Goods and Services which the bidder will supply from outside Pakistan, the prices shall be quoted in US Dollars.
12.2	All payment shall be in Pak Rupees Only.
<b>IB 13</b>	<b>Documents Establishing Bidder's Eligibility and Qualifications</b>
13.4 (a)	<p>The bidder shall have successfully completed the following projects  Relevant Project = 01 Number  General Projects = 02 Numbers</p> <p>For detailed evaluation criteria, refer to <b>Appendix-1</b> under IB 26.2 (c) of the Bid Data Sheet. Bidder/Manufacturer must possess and provide evidence of the experience as per evaluation criteria mentioned under IB 26.2 (c) of the Bid Data Sheet.</p>
13.4 (b)	<p>Text of the ITB 13.4 (b) is hereby deleted and substituted with the following:</p> <p>The bidder should have an average annual turnover in the last five years starting from 2018-19, equal to or more than Rs. 1,000 million. Please attach audited financial statement for the year FY 2018-19, 2019-20, 2020-21, 2021-22, and 2022-23.</p>

<b>IB 15</b>	<b>Bid Security</b>
15.1	All Bids must be accompanied by a Bid Security @ 2% of the Price Bid in PKR or an equivalent amount in a freely convertible currency.  Note: The Bidder shall enclose the <b>2% Bid Security</b> with its Financial/Price Bid and furnish undertaking with its Technical Bid stating that the same is enclosed.
15.2	The Bid Security shall be, in the form of Deposit at Call or a Bank Guarantee on bid security form, 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 CEO, PEDO, valid for a period of twenty-eight (28) days beyond the bid validity date.
<b>IB 16</b>	<b>Validity of Bids</b>
16.1	Bids shall be valid for 180 days after the date of bid opening as prescribed in IB 19.1(a)
<b>IB 17</b>	<b>Format and Signing of Bid</b>
17.4	Each proposal (Technical & Financial) shall be sealed separately in an envelope and marked accordingly. Each bidder shall prepare i. Technical proposal (1 Nos Original & 2 Nos copies) ii. Financial proposal (1 Nos Original)  Technical and Financial/Price bid shall be clearly marked as "ORIGINAL" and "COPY". All the documents must be properly sealed and signed.
	<b>(E) BID OPENING AND EVALUATION</b>
<b>IB 22</b>	<b>Bid Opening</b>
22.1	The following is added at the end of IB 22.1  "Technical Bids will be opened first. 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 opening of the Price Bids."
<b>IB 25</b>	<b>Conversion to Single Currency</b>
25.1	Date of exchange rate: Twenty-eight (28) days prior to the latest date for opening of Bids.
<b>IB 26</b>	<b>Detailed Evaluation of Bids</b>
26.2 (a)	The bid will be evaluated for the complete scope of work
26.2 (c)	<b>Technical Evaluation:</b>  Criteria for the evaluation of Technical Bid is attached as <b>Appendix-1</b> to the Bidding Data Sheet (BDS).
<b>26.3</b>	<b>Evaluation Methods</b>
26.3 (iv)	<b>Price Adjustment for Deviation in Terms of Payment</b>  If a bid deviates from the terms and procedures of payment/payment conditions as specified in the condition of Contract and if such deviation is considered acceptable to the Employer, mark-up earned for any earlier payments involved in the terms outlined in the bid as compared to those stipulated in the conditions of Contract shall be calculated at the following mark-up rates: - for foreign currency component: 8% per annum - for local currency component: 11% per annum and shall be added to the Corrected Total Bid Price for comparison purposes only.
26.3 (v)	<b>Price Adjustment for Completion Schedule</b>  Bid indicating completion beyond the date set out in Preamble to Conditions of Contract shall not be considered and rejected as non-responsive.

<b>IB 27</b>	<b>Domestic Preference</b>
	Not Applicable
	<b>(F) AWARD OF CONTRACT</b>
<b>IB 32</b>	<b>Employer's Right to Accept any Bid and to Reject any or all Bids</b>
32.2	The text of IB 32.2 is deleted and modified as under:  The Employer may in addition to clarification meeting(s), also conduct Price negotiation meeting(s) as per KPPRA Rules.
	<b>(G) ADDITIONAL INSTRUCTIONS</b>
<b>IB 40</b>	<b>Bidder to Inform Himself</b>
40.1 (a)	For inquiries on Pakistani Income Tax, the bidder may refer to the Commissioner of the Income Tax and Sales Tax, Peshawar Khyber Pakhtunkhwa, Pakistan.
<b>IB 41</b>	<b>Alternate Proposals by Bidder</b>
	Alternate proposals are not permitted.

## APPENDIX-1 TO BID DATA SHEET

### Evaluation & Qualification Criteria and Requirements pursuant to IB 26.2 (c)

This Attachment contains all the methods, criteria, and requirements that the Employer shall use to evaluate Bidders. The information to be provided in relation to each requirement and the definitions of the corresponding terms are included in the respective Forms.

Eligibility and Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Members Combined	Each Member	Lead Member	
<b>1. Financial Situation and Performance</b>							
<b>1.1</b>	<b>Financial Capabilities</b>	The Bidder shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, project specific lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as <b>PKR 600 Million</b> for the subject contract net of the Bidder's other commitments.	Must meet requirement	Must meet requirement	N/A	Must meet 40 %, [Forty percent] of the requirement	Appendix B - Form B14(a) & Form B14(b)
<b>1.2</b>	<b>Average Annual Turnover (AAT)</b>	Minimum average annual construction turnover of <b>PKR 1000 Million</b> , calculated as total certified payments received for contracts in progress and/or completed within the last Five (05) years starting from 2018-19. Please attach audited financial statements since 2018-19.	Must meet requirement	Must meet requirement	Must meet 25 %, [Twenty Five percent] of the requirement.  The requirement is not applicable for Designer partner of the JV.	Must meet 40 %, [Forty percent] of the requirement	Appendix B - Form B3 & Form B-4  The audited balance sheets or, if not required by the laws of the Bidder's country, other financial statements acceptable to the Employer, for the last <b>Five (5) Years</b> shall be submitted and must demonstrate the current soundness of the Bidder's financial position and indicate its prospective long-term profitability.

Eligibility and Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Members Combined	Each Member	Lead Member	
<b>2. Experience</b>							
2.1	<b>Specific Experience</b>	<p>A minimum number of GIS (Gas Insulated Switchgear) contract(s) specific to the current procurement below, that have been satisfactorily and substantially<sup>1</sup> completed as a prime contractor, joint venture member<sup>2</sup>, management contractor or subcontractor during last Seven years commencing from <b>1<sup>st</sup> June 2017</b> and Application submission deadline:</p> <p>a. The bidder has Designed, Manufactured, Constructed, Supplied, Installed and Commissioned at least one 132 kV and above Gas Insulated Switchgear (GIS) with a minimum value of Pak Rupees 600 million or above, complete in all respect.</p> <p>b. The bidder shall have a minimum 10 years of experience in Manufacturing and Supply of 132 kV GIS with all auxiliary items (2014 to 2024) and demonstrated track record of success in the field for at least 5 years since 2019.</p>	<p>Must meet requirement<sup>3</sup></p> <p>The following activities may be complied by the bidder or its proposed Specialist Sub-Contractor</p> <p>1. Designing 2. Manufacturing</p>	<p>Must meet requirement<sup>3</sup></p> <p>The following activities may be complied by the bidder or its proposed Specialist Sub-Contractor</p> <p>1. Designing. 2. Manufacturing</p>	N/A	<p>Must meet the following requirement</p> <p>“Installation and Commissioning of 132kV GIS”</p>	<p>Form B12 (a) &amp; (b)</p> <p>Completion or Substantial<sup>1</sup> Completion certificate issued by the employers shall be attached as an evidence.</p>
2.2	<b>General Experience</b>	<p>A minimum number of experiences under construction contracts specified below that have been satisfactorily and substantially<sup>1</sup> completed as a prime contractor, joint venture member<sup>2</sup>, management contractor or subcontractor during last Ten years commencing from <b>1<sup>st</sup> June 2014</b> and Application submission deadline:</p> <ul style="list-style-type: none"> <li>The bidder has completed at least Two (02) No’s general electrical works with NTDCL/ DISCOS/ WAPDA/ CPPAG.</li> </ul>	<p>Must meet requirement<sup>3</sup></p>	<p>Must meet requirement<sup>3</sup></p>	N/A	N/A	

<sup>1</sup> Substantial completions shall be based on 80% or more works completed under the contract.

<sup>2</sup> For contracts under which the Applicant participated as a joint venture member or sub-contractor, only the Applicant’s share, by value, and role and responsibilities shall be considered to meet this requirement.

<sup>3</sup> In the case of JV, the value of contracts completed by its members shall not be aggregated to determine whether the requirement of the minimum value of a single contract has been met. Instead, each contract performed by each member shall satisfy the minimum value of a single contract as required for single entity. In determining whether the JV meets the requirement of total number of contracts, only the number of contracts completed by all members each of value equal or more than the minimum value required shall be aggregated.

## **(H) APPENDICES**

The Appendices to ITB are as given below:

- Appendix-A: Name of Eligible Countries
- Appendix-B: Evidence of Bidder's Capabilities
- Appendix-C: Domestic Goods (value added in Pakistan)

**Appendix A to**

**Instructions to Bidders**

**NAME OF ELIGIBLE COUNTRIES**

(All countries of the World with whom Islamic Republic of Pakistan have commercial relations.)

**Appendix B to**

**Instructions to Bidders**

**EVIDENCE OF BIDDER'S CAPABILITY**

Note: Bidders to provide the following information with the Bid separately and indicate herein its references where this information is available.

Sr. No.	Information to be Supplied	Bid References
1	Name of Bidder, business address and country of incorporation.	Form B1: Bidders Information Sheet
2	Type of firm whether individually owned, partnership corporation or joint venture and the names of its owners or partners.	Form B1 & B2: JV Information Sheet
3	<p>The annual reports giving general description of the firm, sort of business carried out, balance sheets, profit and loss statements, turn over and business done by the firm, duly authenticated, for the last Five (5) years. Audited Balance Sheets for the preceding Five (5) years and projected assets and liabilities for the next Five (5) years shall be provided.</p> <p>i. Total value of works in hand on bid opening / preparation date.</p> <p>ii. Total value of works completed in last Five years.</p>	<p>Form B3: Financial Situation</p> <p>Form B4: Average Annual Turnover</p>
4	<b>The annual reports or qualification statements giving general description of the firm, sort of business carried out, balance sheets, profit and loss statements, turn over , Business license for Design, Manufacture, supply Installation, Testing and Commissioning of 132 kV GIS or above and business done by the firm, duly authenticated by completion certificates and performance certificates .</b>	Schedule-I
5	Location and address of manufacturing facilities as applicable.	Form B5: Owned and Other Manufacturing Facility Information
6	Full description of factories owned and the manufacturing capacities of various items made therein.	Form B6: Owned Manufacturing Facility Information
7	Details of the facilities where the offered equipment is proposed to be manufactured. This description should include the facilities and capacities of the particular factories including testing facilities and the processes used in manufacturing and testing. Where parts or components are purchased from outside, the details of equipment purchased and the names and experience record of the suppliers.	Form B7: Manufacturing Facility Information other than Owned

8	Detailed description of the quality control testing and research. If the equipment is manufactured under license, the name of the licensee and details of the licensing arrangements, such as the duration of the license, the facilities provided to the Bidder by the licensee and whether future improvements are available or not etc. A copy of the license agreement may be attached. Quality Control/ Quality assurance plan must also be submitted.	Form B8: Quality Control Facilities in Owned Manufacturing Facility.
9	Names, qualifications and experience of the key technical personnel along with Resumes.	Form B9 (a): Personnel Form B9 (b): Resume of Proposed Personnel
10	The time since the manufacturer has been in this business and the time since he has been doing work of similar nature.	Form B10: E&M Works Contractor Business Details
11	The time since the particular equipment offered has been manufactured and the time for which it has been in service. The manufacturer shall have the experience stated in Sub-Clause IB 13.4(a).	Form B11: Offered Equipment Manufacturer Details
12	(a) Reference lists of similar works done by the Bidder in its country and abroad indicating the name of customer description and quantity of product, year of supply and the approximate value. This is an important consideration and should be filled in with full details (attach separate sheet if needed).  (b) Past performance & present commitments	Form B12 (a): List of Similar Works Done  Form B12 (b): Past performance & present commitments
13	Details of projects under execution and future contractual commitments (for each partner, in case of a joint venture).	Form B13: Projects Contractual Commitments
14	a) Banking reference, names of banks and addresses may be given to whom reference regarding financial capability of the Bidder may be made, with authority to make inquiries from the Bidder's bankers and clients regarding any financial and technical aspects (for each partner, in case of a joint venture). b) Detail of OD limit allowed to the firm by the bank for the business including amount and its validity period.	Form B14(a): Financial Resources  Form B14(b) Bank Credit Letter
15	Health, Safety, Environmental Management and Emergency Plan as well as Risk Management plan for the project.	Form B15: Health, Safety Environmental Management & Emergency Plan
16	Detailed/ Integrated work plan along with methodology to complete the assignment.	Refer: Schedule C
17	Information on any litigation or arbitration resulting from contracts completed or under execution by the Bidder over the last fifteen (15) years. The information shall indicate the parties concerned, the matter of dispute, the disputed amounts and the result thereof (for each partner, in case of a joint venture).	Form B17: Litigation or Arbitration

**Form B1: Bidder’s Information Sheet**

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

<b>Bidder’s Information</b>	
<b>Bidder’s legal name and registration in their own country</b>	
<b>Type of Firm, Name of owners and Partners / In case of JV, legal name of each Partner</b>	
<b>Bidder’s country of Incorporation</b>	
<b>Bidder’s year of Incorporation</b>	
<b>Bidder’s legal address in country of incorporation</b>	
<b>Bidder’s authorized Representative</b> (Name, address, telephone numbers, fax numbers, e-mail address)	
<p><b>Attached are copies of the following original documents.</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> In case of single entity, articles of in-incorporation of the legal entity named above, in accordance with IB 2.</li> <li><input type="checkbox"/> Authorization to represent the firm or JV named in above, in accordance with IB 17.5.</li> <li><input type="checkbox"/> Registration with Pakistan Engineering Council in Category C-1, in accordance with IB2.</li> <li><input type="checkbox"/> Organization Chart</li> <li><input type="checkbox"/> Registration of foreign firms in their country. The information provided on the projects must be substantiated by certification.</li> </ul>	

**Form B2: JV Information Sheet**

Each member of JV of a JV must fill in this form.

<b>JV/Authorized Manufacturer Information</b>	
<b>Bidder's legal name</b>	
<b>JV/AM Partner's legal name</b>	
<b>JV/AM Partner's country of constitution</b>	
<b>JV/AM Partner's year of constitution</b>	
<b>JV/AM Partner's legal address in country of constitution</b>	
<b>JV/AM Partner's authorized representative information (Name, address, telephone numbers, fax numbers, e-mail address)</b>	
<p><b>Attached are copies of the following original documents.</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Articles of incorporation of the legal entity named above, in accordance with IB 2.</li> <li><input type="checkbox"/> Authorization to represent the firm named above, in accordance with IB 17.5.</li> <li><input type="checkbox"/> Registration with Pakistan Engineering Council in Category C-1, in accordance with IB2.</li> <li><input type="checkbox"/> Registration of foreign firms in their country. The information provided on the projects must be substantiated by certification.</li> </ul>	

**Form B3: Financial Situation**

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

<b>Financial Data for Previous 5 Years [ US\$ Equivalent ]</b>				
<b>Year 1:</b> (2018-19)	<b>Year 2:</b> (2019-20)	<b>Year 3:</b> (2020-21)	<b>Year 4:</b> (2021-22)	<b>Year 5:</b> (2022-23)

**Information from Balance Sheet**

<b>Total Assets</b>					
<b>Total Liabilities</b>					
<b>Net Worth</b>					
<b>Current Assets</b>					
<b>Current Liabilities</b>					

**Information from Income Statement**

<b>Total Revenues</b>					
<b>Profits Before Taxes</b>					
<b>Profits After Taxes</b>					

- Attached are copies of financial statements (balance sheets including all related notes, and income statements) for the last Five years, as indicated above, complying with the following conditions.
- All such documents reflect the financial situation of the Bidder or partner to a JV, and not sister or parent companies.
  - Historic financial statements must be audited by a certified accountant.
  - Historic financial statements must be complete, including all notes to the financial statements.
  - Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

Signature and Seal of Bidder:

**Form B4: Average Annual Turnover**

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

<b>Year</b>	<b>Amount in Pak Rs.</b>	<b>Exchange Rate (Average Annual)</b>	<b>US\$ Equivalent</b>
<b>1.</b>			
<b>2.</b>			
<b>3.</b>			
<b>4.</b>			
<b>5.</b>			
<b>Average Annual Turnover (Last 5 Years)</b>			

The information supplied should be the Annual Turnover of the Bidder or each member of a JV or Authorized Manufacturer in terms of the amounts billed to clients for each year for contracts in progress or completed, converted to US Dollars at the rate of exchange at the end of the period reported.

<b>Year</b>	<b>Amount in Pak Rs.</b>	<b>Exchange Rate (Average Annual)</b>	<b>US\$ Equivalent</b>
<b>1.</b>			
<b>2.</b>			
<b>3.</b>			
<b>4.</b>			
<b>5.</b>			
<b>Average Equity Capital (Last Five Years)</b>			

Signature and Seal of Bidder:

**Form B5(a): Owned and Others Manufacturing Facility Information**

The E&M works contractor as member of JV or Authorized Manufacturer must provide information of all manufacturing facilities that it will use for manufacturing of all plants and equipment. These facilities may be owned or not.

<b>Manufacturing Facility Information</b>					
<b>Sr. No.</b>	<b>Name of Facility</b>	<b>Facility Location</b>	<b>Address</b>	<b>Owned or Not</b>	<b>Annual Manufacturing Capacity</b>
1					
2					
3					
4					
5					
6					

**Form B5(b): Manufacturer Experience**

Description of Similarity for Equipment in accordance with Criteria given in clause 13.6 (Bid data Sheet):

S.No	Contract Date	Project Name	Qty	Year of Supply	Employer's/Client Name	No of year in Service	Performance Certificate (Yes/No)
1							
2							
3							
4							

Note: Bidder has to fill-up above details to verify the Qualification of his proposed Manufacturers

**Form B5(c): Manufacturer's Authorization**

To,

**Project Director (RHPP),  
Room No. 331 PEDO House  
Plot No. 38 B/2 Phase-V, Hayatabad, Peshawar  
Ph No: (+92-91) 9217004  
E-mail: [aziz.ahmad@pedo.pk](mailto:aziz.ahmad@pedo.pk)**

WHEREAS

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

**Goods to be supplied**

- 1) .....
- 2) .....
- 3) .....

We hereby extend our full guarantee and warranty in accordance with Clause 30 of Conditions of Contract, with respect to the goods offered by the above firm.

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

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

Title:..... [insert title]

Duly authorized to sign this Authorization on behalf of: [insert signature and complete name of Bidder]

Dated on \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ [insert date of signing]

**Form B6: Owned Manufacturing Facility Information**

The E&M works contractor as member of JV or Authorized Manufacturer must provide information of all manufacturing facilities that it will use for manufacturing of all plants and equipment. The following information be provided for owned facility by E&M Works Contractor.

<b>Owned Manufacturing Facility Information</b>				
<b>Sr. No</b>	<b>Name of Various Items being Manufactured</b>	<b>Name of Facility and Location</b>	<b>Address</b>	<b>Annual Manufacturing Capacity</b>
1				
2				
3				
4				
5				
6				

**Form B7: Manufacturing Facility Information of Other than Owned**

The E&M works contractor as member of JV or Authorized Manufacturer must provide information of all manufacturing facilities that it will use for manufacturing of all plants and equipment. The following information be provided for facility (other than owned) by E&M Works Contractor from where it wants to manufacture offered equipment.

<b>Manufacturing Facility Information</b>				
<b>Sr. No</b>	<b>Name of Equipment offered to be Manufactured</b>	<b>Name of Facility and Location</b>	<b>Address</b>	<b>Annual Manufacturing Capacity</b>
1				
2				
3				
4				
5				
6				

This description should include the following of the particular factories:

- (i) Facilities and capacities of the particular factories.
- (ii) Testing Facilities and the processes used in manufacturing and testing
- (iii) Detailed of equipment and parts purchased outside along with experience record of the supplier.

**Form B8: Quality Control Facilities in Owned Manufacturing Facility**

The Bidders shall provide detailed description of the quality control testing and research facilities. If the equipment is manufactured under license, the name of the licensee and details of the licensing arrangements, such as the duration of the license, the facilities provided to the Bidder by the licensee and whether future improvements are available or not etc. A copy of the license agreement may be attached. Quality Control/ Quality assurance plan must also be submitted.

**Form B9 (a): Personnel**

Bidders should provide the names of suitably qualified personnel to meet the requirements. The data on their experience should be supplied using the Form B9 (b) for each candidate. In addition, bidder shall provide Number of total permanent staff and total number of qualified engineers on the company’s pay roll.

<b>Total No. of Staff</b>	
<b>Permanent Staff</b>	<b>Qualified Engineers</b>

<b>1.</b>	<b>Title of position: Project Manager Electrical</b> (Total Exp/Similar Exp = 15/10)
	<b>Name</b>
	<b>Qualification/ Experience:</b>
<b>2.</b>	<b>Title of position: Deputy Manager</b> (Total Exp/Similar Exp = 10/5)
	<b>Name</b>
	<b>Qualification/ Experience</b>
<b>3.</b>	<b>Title of position: Design Manager</b> (Total Exp/Similar Exp = 10/5)
	<b>Name</b>
	<b>Qualification/ Experience</b>
<b>4.</b>	<b>Title of position: Quality Control Engineer</b> (Total Exp/Similar Exp = 10/5)
	<b>Name</b>
	<b>Qualification/ Experience</b>

**Form B9 (b): Resume of Proposed Key Personnel**

Resumes of the proposed persons should be duly signed by the concerned individuals or by the respective firm, otherwise the Resumes will not be considered for the evaluation purposes.

<b>Resume of Proposed Personnel</b>		
<b>Position</b>		
<b>Personnel Information</b>	<b>Name</b>	<b>Date of birth</b>
	<b>Professional Qualifications (Engineering Degree with Year)</b>	
<b>Present Employment</b>	<b>Name of Employer</b>	
	<b>Address of Employer</b>	
	<b>Telephone</b>	<b>Contact (manager / personnel officer)</b>
	<b>Fax</b>	<b>E-mail</b>
	<b>Job title</b>	<b>Years with present employer</b>
	<b>Overall Experience (Years)</b>	<b>Relevant Experience (Years)</b>

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

<b>From</b>	<b>To</b>	<b>Company / Project / Position / Relevant technical and management experience</b>

**Form B10: E&M Works Contractor Business Details**

The Bidder / E&M Works Contractor must provide details that the time since the manufacturer has been in this business and the time since he has been doing work of similar nature.

**Form B11: Offered Equipment Manufacturer Details**

The time since the particular equipment offered has been manufactured and the time for which it has been in service. The manufacturer shall have the experience stated in Sub-Clause IB 13.4(b).

**Form B12 (a): List of Similar nature Works (To be used both for Specific and General Experience)**

Reference lists of similar works (DESIGN, MANUFACTURING, SUPPLY, INSTALLATION, COMMISSIONING AND TESTING 132 kV GAS INSULATED SWITCHGEAR AND GENERAL ELECTRICAL WORKS by the Bidder in his country and abroad indicating the name of customer/client, description and quantity of product, year of supply and the approximate value. This is an important consideration and should be filled in with full details (attach separate sheet if needed). Proof of Completion / Substantial Completion, in the shape of completion certificates issued by the Employer must be attached.

Name of the Project: .....

Order Placed by (full address of Employer)	Order No. and date	Firm Experience of Works including Design, manufacturing of 132 kV GIS	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 completion certificate from the Employer)	Contact person of the employer along with Telephone No., Fax No. and email address

Signature and Seal of the Bidder.....

**Form B12 (b): Past Performance And Present Commitments**

**Past Performance**

Sr. No.	Name of project(s)	Name of employer	completed cost	Start date	Planned completion date	Actual completion date	Satisfactory performance certificate from employer / Remarks regarding delays if applicable
1.							
2.							
3.							

<b>Contract of Similar Size and Nature</b>	
<b>Contract No</b> _____ <b>Of</b> _____	<b>Contract Identification</b>
<b>Award Date</b>	<b>Completion Date</b>
<b>Role in Contract</b>	<input type="checkbox"/> <b>Contractor</b> <input type="checkbox"/> <b>Management Contractor</b> <input type="checkbox"/> <b>Subcontractor</b>
<b>Total Contract Amount</b>	<b>US\$</b>
<b>If partner in a JV or subcontractor, specify participation of total contract amount</b>	<b>Percent of Total Amount</b>
<b>Employer's Name</b> <b>Address Telephone/Fax</b> <b>Number Email</b>	
<b>Description of the similarity in accordance with Criteria 13.4 (a) of IB</b>	

**Present Commitments**

Sr. No.	Name of ongoing project(s)	Name of employer	Total cost	Start date	Planned completion date	%age of works completed	Award letter / Remarks regarding delays if applicable
1.							
2.							
3.							
4.							
5.							
6.							
7.							

Any Bidder showing projects outside Pakistan, the information provided on the project needs to be substantiated by certification of concerned country’s embassy in Pakistan.

Initials of Signatory to Bid:.....

**Form B13: Projects under Contractual Commitments**

Each Bidder or member of a JV or Authorized Manufacturer (DESIGN, MANUFACTURING, SUPPLY, INSTALLATION, COMMISSIONING AND TESTING 132 kV GAS INSULATED SWITCHGEAR. Procurement, Civil Works, Erection, Stringing, Testing & Commissioning etc.) must fill in this form

<b>Sr. No.</b>	<b>Name of ongoing project(s)</b>	<b>Name of employer</b>	<b>Total cost</b>	<b>Start date</b>	<b>Planned completion date</b>	<b>percentage of works completed</b>	<b>performance certificate from the client</b>
1.							
2.							
3.							
4.							
5.							
6.							
7.							

**Form B14(a): Financial Resources**

Specify proposed sources of financing, such as liquidated 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.

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

<b>Financial Resources</b>		
<b>Sr. No.</b>	<b>Source of financing (Name of Bank and Address)</b>	<b>Amount (US\$ equivalent) and validity period</b>
1		
2		
3		
4		

Signature and Seal of Bidder:

**Form B14 (b): 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.

The bank credit letter will be valid up to \_\_\_\_ however it can be extended without amendment\_\_\_\_ upon request.

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.

The bank credit letter will be valid up to \_\_\_\_ however it can be extended without amendment upon request.

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

**Form B15: Health, Safety, Environmental Management & Emergency Plan**

The Bidders shall give his proposed plans for Health, Safety, **Environmental Management & Emergency** as well as risk management for the project to meet the requirements specified in the bidding documents.

**Form B16: Training & Employment Plan of Local Work Force**

The Bidders shall mention the proposed training and Employment plans to train the Employer staff to maintain and operate the facility after construction.

**Form B17: Litigation or Arbitration**

Information on any litigation or arbitration resulting from contracts completed or under execution by the Bidder over the last ten (10) years.

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

<b>Information on Litigation or Arbitration</b>				
<b>Year</b>	<b>Parties Concerned</b>	<b>Matter of Dispute</b>	<b>Dispute Amount in US\$ Equivalent</b>	<b>Result Thereof</b>

**Appendix C to  
Instructions to Bidders**

**Domestic Goods (Value added in Pakistan)**

(Not Applicable)

**LETTER OF TECHNICAL BID  
AND  
SCHEDULES TO BID**

## **LETTER OF TECHNICAL BID AND SCHEDULES TO BID**

### **Letter of Technical Bid**

### **Schedules to Bid**

- Schedule A to Bid: Specific Works Data/Technical Provisions
- Schedule B to Bid: Works to be Performed by Subcontractors
- Schedule C to Bid: Proposed Programme of Works
- Schedule D to Bid: Deviations from Technical Provisions
- Schedule E to Bid: Deviations from Contractual Conditions
- Schedule F to Bid: Method of Performing Works
- Schedule G to Bid: Proposed Organization for the Project
- Schedule H to Bid: Integrity Pact

## LETTER OF TECHNICAL BID

### Bid Reference No.

To:

**Project Director (RHPP),  
Room No. 331 PEDO House  
Plot No. 38 B/2 Phase V Hayatabad Peshawar  
Ph No: (+92-91) 9217004  
E-mail: [aziz.ahmad@pedo.pk](mailto:aziz.ahmad@pedo.pk)**

Gentlemen,

1. Having examined the Bidding Documents including Instructions to Bidders, Conditions of Contract, Specifications, Drawings, Schedules to Bid, Schedule of Prices and Addenda Nos. .... 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 ..... hereby offer to execute and complete such Works and remedy any defects therein in conformity with the said documents including Addenda thereto.
2. We understand that all the Schedules attached hereto form part of this Bid.
3. As security for due performance of the undertakings and obligations of this Bid, we submit herewith a Bid Security in the amount of Rs.----- drawn in the favor of, or made payable to the Employer, **Project Director, Rehabilitation and Restoration of 17 MW Ranolia HPP, PEDO House Peshawar** and valid for a period 28 days beyond the period of validity of Bid.
4. We undertake, if our Bid is accepted, to commence the Works and to deliver and complete the whole of the Works comprised in the Contract within the time(s) stated in Preamble to the Conditions of Contract.
5. We agree to abide by this Bid for the period of one hundred and twenty days (120 days) from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
6. Unless and until a formal Agreement is prepared and executed, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
7. We undertake, if our Bid is accepted to execute the Performance Security referred to in Clause 10 of Conditions of Contract for the due performance of the Contract.
8. 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.
9. We do hereby declare that our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries [*insert the nationality of the Bidder, including that of all parties that comprise the Bidder if the Bidder is a consortium or association, and the nationality of each Subcontractor and Supplier*].
10. We, including any subcontractors or suppliers for any part of the Contract, do not have any conflict of interest.
11. We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process.

12. We confirm, if our Bid is accepted, that all partners of the joint venture shall be liable jointly and severally for the execution of the Contract and the composition or the constitution of the joint venture shall not be altered without the prior consent of the Employer. (Please delete in case of Bid from a single firm).

Dated this ..... day of ..... 2023

Signature ..... in the capacity of ..... duly authorized to sign the Bid for and on behalf of .....

(Name of Bidder in Block Capitals)

(Seal of Bidder)

Bidder's Address

.....  
.....  
.....

Witness:

Signature: .....

Name: .....

Address:

.....  
.....  
.....

Occupation .....

**Schedule – A To Bid**

**SPECIFIC WORKS DATA / TECHNICAL PROVISIONS**

**Gas Insulated Switchgears**

**Scope of Work**

Scope of work under this section covers the provision of labor, tools, plants, materials and performance of work necessary for the design, manufacture, quality assurance, quality control, shop assembly, shop testing, delivery at site, site storage and preservation, installation, commissioning, performance testing, acceptance testing, training of Employer's personnel, handing over to Employer and guarantee for two years of 132 kV outdoor Switchyard as per the specifications hereunder, each complete with all auxiliaries, accessories, spare parts and warranting a trouble free safe operation of the installation.

The Supplier shall guarantee the coordination with the all-other Plant, Materials and Works specified in this Particular Requirements for electrical equipment in order to achieve the completion of Works and correct functioning of the complete electrical equipment.

The Supplier shall provide the complete Plant, Materials and Works even if such Plant, Materials or Works to be delivered or carried out are not specifically mentioned herein or explicitly indicated in the drawings but are necessary for the completion of Works and achievement of correct functioning of the HV (132 kV) equipment as whole in accordance with the performances required in these Technical Requirements. Supplier before procuring equipment get prior approval from NTDC/NEPRA.

**Standards**

The most important local and international publications to be observed, referring to the scope of supply for this clause (HV Equipment), are listed here bellow:

- WAPDA/NTDCP-223 132 kV and 220 kV Gas Insulated Substation & Latest Grid Codes
- IEC 60038 IEC standard voltages
- IEC 60060 High-voltage test techniques
- IEC 60071 Insulation co-ordination
- IEC 60085 Electrical insulation
- IEC 60099 Surge arresters.
- IEC 60137 Insulated bushings for alternating voltages above 1000 V
- IEC 60273 Characteristic of Outdoor and outdoor post insulators for systems with nominal voltages greater than 1000 V
- IEC 60376 Specification of technical grade sulfur hexafluoride (SF6) for use in electrical equipment
- IEC 60529 Degrees of protection provided by enclosures (IP Code)
- IEC 60815 Selection and dimensioning of high-voltage insulators intended for use in polluted conditions
- IEC 60909 Short-circuit currents in three-phase a.c. systems.
- IEC 61000 Electromagnetic compatibility (EMC).
- IEC 61869 Instrument transformers.
- IEC 62271 High Voltage Switchgear and Control gear.

## General

The design and manufacture of the 132 kV equipment shall be in accordance with the latest technical development in this field. Special attention shall be paid to a good overall design, easy access, and simple operation, logical arrangement of individual parts and to a smooth operation. Also, the design shall include every reasonable precaution and provision for the safety of the operating and maintenance personnel.

In continuous operation conditions, no part of the equipment shall sustain damage due to overheating. Also, change of position or form of any part shall not occur.

The HV equipment shall be designed such that, the influences of maximum short-circuit currents that may occur due to any reason, do not cause any damage; electrical or mechanical.

The HV equipment shall be able to withstand without damage the highest voltages and loads imposed which could occur in the network or may succeed tripping under any conceivable operating condition. All electrical connections and contacts shall be of ample cross-section and surface for carrying continuously the specified currents without undue heating and shall be secured by bolts or set screws of ample size, fitted lock nuts or lock washers of approved types. Lock nuts shall be used on stud connections carrying current.

Gas barrier insulators shall be provided so as to divide the GIS into separate compartments. They shall be suitably located in order to minimize disturbance in case of leakage or dismantling. They shall be designed to withstand any internal fault thereby keeping an internal arc inside the faulty compartment. Due to safety requirement for working on this pressurized equipment, whenever the pressure of the adjacent gas compartment is reduced, it should be ensured that adjacent compartment would remain in service with reduced pressure. The gas tight barriers shall be clearly marked on the outside of the enclosures.

All apparatus for outdoor installation shall be designed to obviate the risk of accidental short-circuits due to animals, birds and vermin. Also, all outdoor apparatus, including insulators and fittings shall be designed so that water cannot collect at any point.

Cubicles and similar enclosed compartments shall be adequately ventilated to prevent condensation and, suitable low temperature thermostatically controlled heaters shall be provided. All ventilation openings shall be furnished with insect nets.

Project site is more than 2000 m ASL. Supplier shall consider all factors related to Above Sea Level of project site during designing of all electrical Equipment and get prior approval from NTDC.

Particular attention shall be paid to the dust problem inside of the enclosed compartments. Doors or removable openings shall have moulded gaskets of weatherproof materials. No foam rubber shall be allowed. Ventilation louvers shall be backed with disposable filters which shall be easily removable without utilizing tools.

All interior surfaces including contactor or relay coils shall be treated in an approved manner to prevent mould growth; such treatment shall in no way interfere with the satisfactory operation of the Plant and Material either electrically or mechanically.

Plant and Material with the same characteristics shall be identical and fully inter-changeable. Spare parts shall be manufactured in such a way to exactly fit (without the need for additional adjustments) and to be easily replaced.

## Main Technical Data Of The Equipment

The main technical data of the 132 kV GIS switchgears are as follows:

### General Data

- Type	Gas Insulated Switchgear (GIS)
- Installation	outdoor
- Busbar Arrangement	Double Busbar
- Number of bays/cells - Total	As per SLD
• Step-up Transformer Bay	As per SLD
• OHTL Bay	As per SLD
• To 132 kV switch yard LCU	As per SLD
- Rated system voltage	132 kV
- Highest system voltage	145 kV
- Rated frequency	50 Hz
- Rated power frequency withstand voltage, AC (50 Hz, 1 min)	275 kV
- Rated lightning impulse withstand voltage, LI (1,2/50 $\mu$ s)	650 kV
- Rated bus-bar current	As per SLD
- Rated short time (3 s) withstand current	40 kA
- Rated peak withstand current	100 kA
- Grounding	Effectively earthed
- Maximum gas losses for complete installation as well as for all individual sections as per IEC 62271-203	

### Circuit Breaker

- Type	SF6
- Rated current	as per Single Line Diagram
- Rated short-circuit breaking current	40 kA/3s
- Rated short-circuit making current	100 kA
- First pole to clear factor	1.5
- Rated opening time	≤30ms
- Rated breaking time	<80ms
- Rated closing time	≤100ms
- Reclosing time	≤300ms
- Rated operating sequence	O - 0.3s - CO - 3min - CO
- Operating mechanism	motor operated, 240 V, 50 Hz
- Control voltage	110 V DC

### Disconnectors

- Type	SF6
- Rated current	as per Single Line Diagram
- Rated short time (3 s) withstand current	40 kA
- Rated peak withstand current	100 kA
- Capacitive current switching capability	0.25A
- Bus-transfer current switching capability	1600A/20V
- Operating mechanism	motor operated, 240 V, 50 Hz
- Control voltage	110 V DC

### Earthing Switch (Fast-Acting)

- Type	SF6
- Rated current	as per Single Line Diagram
- Rated short time (3 s) withstand current	40 kA
- Rated peak withstand current	100 kA

### Current transformer

- Type	SF6
- Primary current	as per Single Line Diagram
- Rated short time (3 s) withstand current	40 kA
- Rated peak withstand current	100 kA
- Secondary current	1A
- Number of cores	as per Single Line Diagram
- Accuracy class	0.2sFs5 for measuring circuit 5P20 for protection circuit
- Rated capacity of cores	as per Single Line Diagram

### Voltage transformer

- Type	SF6
- Primary winding voltage	132/√3

- Secondary windings voltage as per Single Line Diagram
- Number of secondary windings as per Single Line Diagram
- Accuracy class 0.2 for measuring circuit  
3P for protection circuit
- Rated capacity of cores as per Single Line Diagram

### Surge Arrester

- Type Metal-oxide
- Rated voltage 120 kV
- Rated discharge current 10kA

## Requirements For Outdoor Gas-Insulated Switchgear

### General

The GIS shall be of Outdoor installation, single-phase, encapsulated, SF6 gas insulated type and associated with circuit breakers, disconnecting and earthing switches, current and voltage transformers, surge arresters, bus-bars, joint boxes and necessary steel support structures.

The number of operations before operation and maintenance works shall be not less than:  
For circuit breakers:

- 10,000 mechanical operations. (Class M2 according to IEC 62271-100)
- 20 interruptions at max. rated fault current.

For disconnecting switch and maintenance earthing switches:

- 10,000 mechanical operations. (Class M2 according to IEC 62271-102) For fast acting earthing switch:
- 1,000 mechanical operations.
- 2 operations at making current capability. (Class E1 according to IEC 62271-102)

All necessary mechanical and electrical interlocking between GIS switching devices shall be provided to enable safe operation.

The GIS shall be designed so that easy removal of any component of the GIS is enabled.

The GIS shall be modular and standardized in design with as much as possible similar parts and assemblies being interchangeable. Future extensions shall be easily accomplished by adding extra feeders without dismantling any major parts of the Plant and Material.

Shipping sections shall be considered for transportation limit and civil structure of GIS room. The sections divided in the factory shall be joined in the field by using bolted and sealed flange connections only. Field welding of enclosure is not acceptable.

All joints and connections shall be able to withstand the forces of expansion, vibration, contraction and specified seismic requirements without deformation, malfunction and leakage.

Plant and Material shall be designed by taking account for a seismic acceleration according to General Technical Requirements. Seismic withstand capability for GIS and structure shall be proved by detailed calculation.

Each component of GIS shall conform to the related IEC standard.

### Switchgear Enclosure

Material of GIS enclosure shall be aluminum alloy in order to be perfectly corrosion-proof and to minimize both electromagnetic and resistive losses. All flanges shall be directly bolted together with good metallic contact to make enclosures equipotent. Insulators or insulating material between flanges shall be avoided in order to get the best electrical connection between the different enclosure modules.

The enclosure shall have mechanical and thermal stability in accordance with IEC. Test report for internal arc fault and current–time curve for enclosure burning through shall be submitted by the Supplier.

Enclosure and seals shall be able to withstand normal and transient pressure in operation. Enclosure design pressure shall take the following into consideration:

- Possible maximum pressure may be reached during normal operation condition and under designed temperature.
- Possible vacuum occurred before gas filling of enclosure.
- Pressure rise caused by internal fault.

After all enclosure are manufactured, non-destructive pressure test shall be made based on pressure vessel standard.

Designed temperature shall be maximum ambient air temperature plus temperature rise when rated current runs through main circuit conductor. Influence of solar radiation shall be taken into consideration for outdoor branch enclosure temperature and measures shall be taken to prevent solar radiation.

The enclosure and seals shall be designed to withstand the gas pressure encountered under normal and short circuit conditions. Pressure relief devices must be provided for safety purpose.

The enclosure shall be directly earthed with power house earthing system.

## Gas Compartment

The GIS shall be divided into the gas compartments based on the GIS layout in main configuration and single line diagram shown in drawings, while satisfying normal operation condition. In principle, division of gas compartments shall be based on erection unit.

The following shall be considered during division of gas compartments:

- Not only normal operation is satisfied, but also external effect of arc inside gas compartment shall be limited.
- Division of gas compartment shall be such that internal fault is limited in the compartment or relevant bus-bar section where that equipment locates without influencing the normal operation of adjacent feeder bay.
- When one feeder bay is in repair, no influence to the normal operation of the adjacent feeder.

Separate gas compartment can be used for circuit breakers, disconnectors, voltage transformers, surge arresters and SF6-to-air bushings.

Separate gas compartment shall be used for connection piece between GIS and step-up transformers. Such compartment can be common to adjacent compartment during operation, while being separate compartment during repair.

Compartments for bus-bar voltage transformers can be separate during repair, while those compartments shall be common to the bus-bar compartment during operation.

Separate compartment can be made for main bus-bar. The division of compartment shall be designed such that the gas reclaiming works during repair require minimum interruption. The removable connector shall be provided on main bus-bar conductor circuit for the repair of main bus-bar.

In the case of gas leakage or pressure drops during repair for each compartment, normal operation of the adjacent compartment shall not be interrupted.

Each compartment shall be equipped with absorbent, temperature compensated density relay with pressure gauge and gas replenishing non-return valve connector. Location of temperature compensated density relay with pressure gauge and gas replenishing non-return valve shall take convenience of routine maintenance and observation into consideration.

## Sealing

All gas seals shall be designed such that leakage rates are kept to an absolute minimum under all normal pressure, temperature, electrical load and fault conditions. All gas seals located in the flanges of the equipment enclosure shall have at least double sealing. Sealing materials for all Plant and Material parts shall be new, long duration, high qualified commercial product.

Enclosure shall be closely sealed with SF6 annual leakage rate of each compartment no more than 0.1%. Sealing structure shall be easy for sealing ring repair and replacement.

The lifetime of sealing ring shall be no less than 30 years. The Supplier shall provide aging test report of sealing ring lifetime with actual lifetime of sealing ring clearly indicated.

The Supplier shall provide method, way and relevant instrument to measure compartment sealing.

### Pressure Relief Devices

Automatic pressure relief devices shall be provided for GIS components.

Operation pressure of pressure relief devices shall be coordinated with enclosure design pressure with no mal-operation and shall not influence the adjacent compartments with normal operation.

Pressure relief shall be performed by means of a metallic bursting disc with a preset opening pressure. Materials of bursting discs made of graphite or non-metallic material shall not be acceptable.

One pressure relief device per gas compartment shall be supplied. Internal pressure relief devices shall not be acceptable.

Position of pressure relief device shall take account that the equipment internal gas shall be released safely for site operation personnel.

### Support and Foundation

All support parts, foundation embedded part of all GIS equipment and ladder, support structure, platform and safety fence required for equipment maintenance and repair shall be supplied and installed including all necessary accessories such as erection bolt, earthing copper bus-bar, earthing wire and terminals, fixing part, etc.

Design of support part shall satisfy the most severe force caused by combination of various loads, including:

- Weight of GIS and structure.
- Normal load of equipment and operation load of equipment.
- Short circuit load of equipment.
- Load caused by foundation uneven subsidence and misplacement.
- Seismic load.
- Stress on support part caused by thermal expansion and cold contraction.
- Dynamic load caused by maintenance, repair personnel with tools working on equipment.

All support parts, ladder, platform and fence shall be hot-galvanized including connection pieces, bolts, nuts, washers, etc. and shall conform to the requirements of recognized safety standards.

### Earthing

#### *Earthing of Main Circuit*

Main circuit earthing shall be designed such as to ensure the safety of repair work. GIS shall be equipped with removable earthing fixing ring that shall not damage the main circuit conductor to be convenient for connecting main circuit to the earthing network through earthing wire during repair period when enclosure is opened.

#### *Earthing of Enclosure*

GIS enclosure shall be earthed at multiple points. Design of earthing points shall be such that induced voltage of equipment enclosure, structure and parts easily to be touched doesn't exceed 24 V under normal operation, not exceed 100 V under fault with temperature rise no more than 30 K.

All metal parts not belonging to main and auxiliary circuits (such as equipment enclosures, drive boxes, local control cubicles, control and terminal boxes, all support parts, etc.) shall be earthed.

Not less than two earthing copper bus-bars (better to be closed loop) shall be placed for GIS. Copper bus-bar shall be connected with the earthing mesh in GIS floor slab at multiple points.

#### **Internal Fault**

The provisions shall be made to restrict and avoid GIS internal fault arc.

Influence of GIS internal fault arc shall be limited in the compartment where arc starts or adjacent compartments of fault section (if there's pressure release device between internal compartments of the faulted section). After faulted compartment or faulted section is separated, the remaining equipment can resume normal operation.

In order for the human safety, proper protection measures shall be taken to limit the external effect of arc to the enclosure without being broken anywhere.

The GIS internal fault location measurement device shall be provided and installed.

#### **Circuit Breakers**

Circuit breakers shall be of Outdoor, puffer type; SF6 gas insulated and shall consist of interrupting arcing chambers.

Circuit breakers shall be in accordance with IEC 62271-100.

Circuit breakers shall be of electrically trip-free type. Detectors for low stored operating energy shall be provided.

Circuit breaker driving mechanism shall be of hydraulic charge or spring energy storage type. Drive mechanism shall be equipped for each circuit breaker phase. The electric motor of the driving mechanism shall be DC operated. The mechanism shall have sufficient energy storing capacity to perform an O-CO cycle in case of auxiliary power supply failing.

Circuit breakers shall be classified as class M2 for mechanical endurance (10,000 operations).

The mechanical position indicator and operation counter shall be installed for phases, its installation position shall be convenient for direct reading for operator.

Enclosure of circuit breaker structure shall be designed such that arcing chamber parts are easy to be taken out without removing enclosure of adjacent components.

Circuit breakers shall be provided with at least two trip coils and one closing coil.

Circuit breakers noise during breaking and making, at 2 m closest from circuit breaker and drive and

1.2 m above ground shall be not more than 90 dB.

### Disconnectors

Disconnectors shall be SF6 insulated type, and designed, manufactured and tested in accordance with IEC 62271-102.

GIS shall be equipped with adequate inspection window in order that position of disconnector is clearly visible. Also, clear close/open position indicator shall be equipped with the disconnector drive convenient to operator for direct reading.

Drive shall be AC and/or DC electrical motor type with local manual operation. Disconnectors shall be classified as class M2 for mechanical endurance (10.000 operations).

Handles or hand cranks shall be provided for local manual operation. During manual operation, electrical control shall be blocked.

### Maintenance Earthing Switches

Maintenance earthing switches shall be SF6 insulated type. It shall be designed, manufactured and tested in accordance with IEC 62271-102.

Maintenance earthing switches shall be installed on all incoming and joint circuits.

GIS shall be equipped with adequate inspection window in order that position of maintenance earthing switches is clearly visible. Also, clear close/open position indicator shall be equipped with the maintenance earthing switch drive convenient to operator for direct reading.

Drive shall be AC and/or DC electrical motor type with local manual operation.

Handles or hand cranks shall be provided for local manual operation. During manual operation, electrical control shall be blocked.

### Fast acting Earthing Switches

Fast acting earthing switches shall be SF6 insulated type. It shall be designed, manufactured and tested in accordance with IEC 62271-102.

Fast acting earthing switches shall be installed on all outgoing circuits.

Fast acting earthing switch shall be able to withstand the full making capability two times.

GIS shall be equipped with adequate inspection window in order that position of fast acting earthing switches is clearly visible. Also, clear close/open position indicator shall be equipped with the fast acting earthing switch drive convenient to operator for direct reading.

Drive shall be AC electrical motor type with local manual operation.

Handles or hand cranks shall be provided for local manual operation. During manual operation, electrical control shall be blocked.

### Voltage Transformers

Voltage transformers shall be of inductive type, metal enclosure encapsulated; SF6 insulated type and shall have possibility to be erected vertically or horizontally. It shall be designed, manufactured and tested in accordance with IEC 61869-3.

MCBs shall be equipped on secondary circuit of each voltage transformer and installed in terminal box. The secondary leads shall be brought out to the terminal box.

The Supplier shall be responsible for ensuring that the voltage transformers characteristics are matched to the protective relays and measuring devices.

### Current Transformers

Current transformers (CT) shall be toroidal design and shall be mounted within switchgear enclosure. Alternative designs can be offered subject to approval of Employer. Cores of all CTs shall be located outside the SF6 gas and enclosure separated from the primary core. The design, manufacture and testing of current transformers shall be in accordance with IEC 61869-2.

Measures shall be provided to prevent influence on secondary winding and circuit caused by discharging at primary circuit.

The Supplier shall be responsible for ensuring that the CTs characteristics are matched to the protective relays and measuring devices.

### SF6 Surge Arrester

Surge arresters shall be of non-linear, gapless, metal oxide and SF6 gas insulated type. The design, manufacture and test of surge arresters shall be in accordance with IEC 60099.

Surge arrester enclosure shall be equipped with pressure relief device.

Each surge arrester shall be equipped with discharging counter and discharging current recorder to be installed at position easy for observation.

### Air-SF6 Bushing

Bushings shall be outdoor, single-phase type, with hollow structure.

The Supplier shall provide hot-galvanized support structure for bushing erection; its design shall be convenient for erection and repair satisfying rigidity and strength requirement.

## Bus-bar

GIS bus-bars shall be single or three phase type, SF6 gas insulated encapsulated. Bus-bar material shall be aluminum alloy with high conductivity.

Design of conductor and enclosure shall take into consideration the thermal expansion and cold contraction and adjustment during erection with bellows at certain places.

For each section of bus-bars under any condition (such as temperature change, foundation uneven level, position change, and manufacture and erection tolerance) shall be allowed to have certain contraction and expansion without additional stress to the connecting equipment (such as step- transformers, bushings, etc.).

Best coordination shall be obtained for conductor and enclosure diameter to avoid internal discharging under any operation condition. Measures shall be taken to prevent corona at elbow and T- connections and conductor terminals.

Conductor shall be finely machined with smooth surface. Conductor connectors shall be plug in type with silver-coating contact. The design of connectors shall take into consideration the thermal expansion, cold contraction, operation vibration; manufacture tolerance, expansion and contraction and misplacement caused by equipment erection error. Electrical and mechanical performance of conductor connectors shall at least be the same as that of the conductor it connects during operation period. Its lifetime would satisfy GIS overhaul period.

## Local Control Cubicles (LCC)

Local Control Cubicles/cabinets shall be according to NTDC Specification P-223 latest version. Each bay of the switchgear shall be provided with a Local Control Cubicles for the local control and monitoring of the respective bay components and shall be preferably placed in front of respective GIS bays.

The Local Control Cubicles shall be freestanding, made of sheet steel and provided with lockable- hinged door and door operated lights. The Local Control Cubicles shall be self-contained, fully assembled and factory wired for the required application and designed as per IEC60439.

The Local Control Cubicles shall accommodate auxiliary relays, contactors, all necessary control switches including the local/off/ remote lockable selector switch, interlocks, devices, "Close" and "Open" push buttons (momentary contact type), all position indicators for circuit breakers, disconnect switches and grounding switches, alarms, instruments AC, DC supply terminals, terminal blocks or multiple plugs for electrical connections to components, auxiliary power supplies etc. of the assigned bay so as to facilitate full and independent control and monitoring of the switchgear locally. All electronic components inside the bay Local Control Cubicles shall be designed to work satisfactorily for the specified ambient temperature. At least 10% spare contacts (NO & NC) shall be provided with each auxiliary relay.

Alarm/annunciators shall be window type per IEC 60255 (applicable parts) or ANSI/IEEE C37.1 with a minimum of 10% spare windows. Annunciators shall be provided for

monitoring the gas density of each gas compartment, high gas pressure before operation of rupture disc/pressure relief device, operating mechanism failure and its motor excessive running, operation of breaker pole discrepancy and trip circuit failures and operating mechanism/control circuit failure.

Alarm/annunciator equipment shall be microprocessor based with high noise immunity and reliability and of modular design with LED type indicators for visual display. The alarm/annunciator system shall be designed for continuous operation of all alarms independently and simultaneously. Annunciator system shall be provided with push buttons for “Silence”, “Acknowledge”, “Reset” and “Test or Simulation”.

Suitable provisions (wired terminals) shall be made to enable all alarm conditions (per SCADA Point List) to be connected to remote signaling system (SOE and SCADA) of NTDC/PESCO.

A mimic diagram shall be provided on the front of the cabinet showing:

- Necessary control switches and local/remote changeover switch (lockable), for operation of circuit breakers, motorized disconnect switches and (applicable) grounding switches.
- Position indicators (semaphores) for all circuit breakers, disconnect and grounding switches in the assigned bay.
- Key-switch for overriding interlocks between disconnects and grounding switches associated with circuit breakers.
- SF6 gas partitions.
- The color of mimic bus shall be as per NTDC. RAL 3003-Rubinrot 132kV

RAL 9017-Black for ground

The cabinet shall be provided with thermostatically controlled anti- condensation space heater along with the 240V AC interior lighting with door switch, safety shrouds, and one 15A, 240V AC tandem slot type receptacle.

One ammeter each for each transformer bay, bus coupler bay and transmission line bays, and one voltmeter with selector switch for each bus coupler and Lines/Transformer bays and key-switch for overriding interlocks between disconnects and grounding switches associated with circuit breakers during maintenance shall also be provided in the Local Control Cubicles.

All control power circuits shall be protected by miniature circuit breakers (MCBs), in each Local Control Cubicles. Other circuits supplying loads, such as heaters, receptacles, or lights, shall have separate overload and short-circuit protection.

DC supply voltage shall be 110V for all control and protection and annunciator circuits. Backup supply shall be provided for the annunciator system.

A copper ground bus bar of suitable dimensions shall be provided at the bottom of the cabinet for grounding. The hinged door of the panel(s) shall be grounded by a flexible grounding connection.

The approved schematic diagram of the part of the control system, Local Control Cubicles to the control cabinet, identifying various components within the cabinet and the respective switchgear bay and referring to the appropriate drawings and instruction manual shall be affixed inside of the Local Control Cubicles access door. The schematic diagram shall be protected with a durable, non-fading material, suitable for the specified climatic conditions.

### Online Partial Discharge Monitoring System

The online partial discharge monitoring system for GIS shall be provided that includes the following at least;

- Internal Sensors
- Data Acquisition Units
- Diagnosis Unit
- PDM Software
- PD Measurement
- Alarms
- Connection with SCADA System

The special tools as required for assembly and disassembly, maintenance or adjustment are part of supply.

## INSTALLATION REQUIREMENTS

In addition to General Technical Requirements, the following requirements shall be applied:

- The Supplier shall install the HV equipment accurately, in accordance with the specification, instructions and drawings.
- All HV equipment shall be installed in such way that enough space for maintenance is enabled.
- All HV equipment shall be installed on appropriate steel supporting structures.
- 132 kV GISs shall be installed in outdoor area.
- Rust on the metal surface, oil and dirt on the surface of the parts to be embedded in concrete shall be removed and cleaned thoroughly before installing.
- The Supplier shall, before testing, thoroughly dry all equipment that may absorb humidity during Installation, to obtain the dielectric strength.

### Documentation

The Supplier shall submit the following documentation:

- Single line diagrams of the 132 kV GISs.
- Drawings (lay-out and cross-section drawings) showing general arrangement and overall dimensions of the 132 kV GISs.
- General drawings concerning the proposed 132 kV GIS equipment, giving general arrangement, cross-sections, construction and overall dimensions, weights, foundations

and support system details.

- Descriptive catalogues and literature of the proposed Plant and Materials.
- Reference lists of the proposed Plant and Materials.
- Detailed inspection test plan (ITP) with the descriptions and methods proposed for carrying out workshop and Site tests.
- Type test certificates for similar Plant and Materials from an independent testing authority.
- Quality management system manual and ISO certificate of the equipment manufacturer.

## Test

### Type Tests

All equipment proposed according to this specification for type tests shall be type tested for typical units in accordance with the latest relevant IEC Standards. An evidence of type testing at NTDC approved international test laboratory for the particular model and according to NTDC type test policy and similar configuration being offered shall be submitted with the proposal. The test reports shall be in English Version. The following type tests shall have been performed:

- Dielectric voltage withstands tests
  - o Power frequency withstand voltage
  - o Impulse withstand voltage
  - o Switching impulse withstand voltage
- Making and breaking capability test
- Short time current test and peak current test
- Mechanical endurance test
- Continuous current carrying and temperature rise test
- Current path resistance measurement
- Pressure Tests
- Partial discharge test

### Shop Tests

Production tests shall be made either in the course of component assembly, and/or on the complete shipping unit assembly.

Routing tests shall be performed at the factory on every unit of GIS as per relevant IEC and to be submitted with inspection offer letter.

Following routine/acceptance tests on GIS assembly at GIS manufacturers works shall be carried out in presence of representatives of Employer and Employer as per relevant IEC.

- Power Frequency Voltage Withstand test on main circuit (as per IEC 62271-203, subclause 7.1.1) shall be carried out combined with partial discharge measurement (as per IEC 62271-203, sub-clause 7.1.2). This includes measurement of resistance of main circuit as per sub clause 7.3, IEC 62271-203.
- Gas Tightness Test (as per IEC 62271-203, sub clause 7.4) shall be carried out on any one of the feeder bay. Additionally, checking by Gas Leakage Detector will be carried out on each bay assembly.

- Circuit Breakers : Following tests shall be carried out on circuit breaker.
  - o Mechanical operation test as per sub-clause 7.102, IEC 62271-203
  - o Dielectric test on auxiliary & control circuit as per sub-clause 7.2, IEC 62271-203
  - o Test on auxiliary circuit, equipment and interlocks in the control mechanism as per sub - clause 7.103, IEC 62271-203
- Disconnecter / Earthing Switches :
  - o Mechanical operation test as per sub-clause 7.102, IEC 62271-203
  - o Dielectric test on auxiliary & control circuit as per sub-clause 7.2, IEC 62271-203
  - o Test on auxiliary circuit, equipment and interlocks in the control mechanism as per sub- clause 7.103, IEC 62271-203
- Current Transformer & Voltage Transformer
  - o Visual check for verification of nameplate, terminal markings etc as per IEC 61869-2 for CT & IEC 61869-3 for VT and approved drawing.
  - o Verification of Factory acceptance/routine test report ( to be submitted along with inspection call letter)
- Verification of Factory Routine/acceptance test reports of offered GIS assembly (to be submitted along with inspection call letter).
- Calibration certificates for the test equipment's shall be handed over to the Employer and/or Employer at manufacturer's premises during inspection.
- Visual/dimensional check of each complete bay of GIS assembly.

### Site Tests

The following tests shall be performed on the completely assembled switchgear at site after installation. Test results as well as test conditions like ambient temperature, gas pressure, dew point etc. shall be documented and the results compared with the relevant instructions and factory test reports. A final site test report shall be supplied to the Employer within 4 weeks after the tests have been finished.

- Visual inspection, checks and verifications
- SF6 gas leakage test
- DC resistance measurement of the main circuits
- Gas density monitor check
- Interlock test
- Measurement of moisture content
- Manual operating check of circuit breaker, disconnect switch, earthing switch and fault making earthing switch
- Power frequency withstand or main circuit.
- Power frequency test of control circuit 2 kV r.m.s. (1 min.)
- CT and VT Test
- Partial Discharge measurement Test (measurement only).

## **Generator Step Up Transformer (15 MVA)**

### **Scope Of Work**

This section covers the provision of labor, tools, plants, materials and performance of work necessary for the design, manufacture, quality assurance, quality control, shop assembly, shop testing, delivery at site, site storage and preservation, installation, commissioning, performance testing, acceptance testing, training of Employer's personnel, handing over to Employer and guarantee for two years of Generator Step-Up (GSU) transformers as per the specifications hereunder, each complete with all auxiliaries, accessories, spare parts and warranting a trouble free safe operation of the installation.

The scope of work shall be a comprehensive functional system covering all supply and services including but not be limited to following:

- One (1) two-winding transformers (15 MVA, 132/11 kV)
- One (1) set of rails with all related embedment and hardware for handling and installation of the above transformers,
- One (1) set of piping required for oil water separator and soak pit,
  
- Continuous on-line moisture-in-oil indicator system for indicating, monitoring and data acquisition and integration with plant SCADA system for each GSU transformer,
- Coordination and provision of necessary contacts and/or ports for integration with plant SCADA system
- Spare parts if any
- Tools & instruments

The Supplier shall guarantee the coordination with the other Plant and Materials and Works specified in this Particular Requirements for electrical equipment, especially with the generator voltage equipment, HV switchgears, and control and protection system in order to achieve the completion of Works and correct functioning of complete electrical equipment.

The Supplier shall provide complete Plant, Materials and Works even if such Plant, Materials or Works to be delivered or carried out are not specifically mentioned herein or explicitly indicated in the drawings but are necessary for the completion of Works and achievement of correct functioning of the step-up transformers as whole in accordance with the performances required in these Technical Requirements.

### **General**

Step-up transformers shall be three-phase, two-winding, oil-immersed, outdoor type for full load rating corresponding to total capacity of the generators at subject HPP

The transformers shall be as per WAPDA/NTDC Specification P-46 Power Transformers. Transformers with the same characteristics shall be identical and fully inter-changeable.

The transformers shall meet the latest stage of development reached in the design and construction of power transformers.

The step-up transformers shall be capable of carrying rated power, in continuous service, at rated voltage  $U_{r\pm 10\%}$ , rated power factor 0.80 and rated frequency 50 Hz, without exceeding the temperature rise limitations as specified in IEC 60076-2.

The transformers shall be designed to ensure that leakage flux does not cause overheating in any part of the transformer.

Each transformer shall be capable to withstand for two (2) seconds an external short circuit between phases without any damage.

### Standards

The mechanical and electrical design of the transformers and their accessories shall strictly meet the following IEC and IEEE standards;

IEC 60038	IEC standard voltages.
IEC 60071	Insulation co-ordination.
IEC 60076	Power transformers (include all necessary parts of standard)
IEC 60085	Electrical insulation.
IEC 60137	Insulated bushings for alternating voltages above 1000 V.
IEC 60296	Fluids for Electrotechnical Applications – Unused Mineral Insulating Oils for Transformers and Switchgear
IEC 60354	Loading guide for oil-immersed power transformers.
IEC 60404	Magnetic materials.
IEC 60529	Degrees of protection provided by enclosures (IP Code).
IEC 60616	Terminal and tapping markings for power transformers.
IEC 60722	Guide to the lightning impulse and switching impulse testing of power transformers and reactors.
IEC 61672	Electroacoustics - Sound Level Meters
IEC 61869-2	Instrument transformers–Part 2: Additional requirements for current transformers.
IEEE Std C57.116	Guide for Transformers Directly Connected to Generators.
IEEE Std C57.91	Guide for Loading Mineral-Oil-Immersed Transformers.
IEEE Std C57.148	Standard for Control Cabinets for Power Transformers.
IEEE Std C62.92	Guide for the Application of Neutral Grounding in Electrical Utility Systems.

## Technical Requirements

The main technical data of the step-up transformers shall be as follows:

	<b>GSU TR-1</b>
Number of phases	3
Number of windings	2
Type	Oil-immersed
Installation	Outdoor
Rated power at site conditions	15 MVA
Rated frequency	50 Hz
Rated no-load voltage ratio	132/11 kV
Type of tap-changer as per NTDC Specification P-46	on-load 23 taps
Vector group	YNd11
Short circuit impedance:	
<ul style="list-style-type: none"> <li>for HV-LV</li> </ul>	$\geq 11\%$ (or as proposed by the vendor)
Highest voltage for equipment:	
<ul style="list-style-type: none"> <li>for HV</li> </ul>	145 kV
<ul style="list-style-type: none"> <li>for HV neutral</li> </ul>	72.5 kV
<ul style="list-style-type: none"> <li>for LV</li> </ul>	12 kV
Rated insulation level:	
<ul style="list-style-type: none"> <li>for HV (AC/LI)</li> </ul>	275/650 kV
<ul style="list-style-type: none"> <li>for HV neutral (AC/LI)</li> </ul>	140/325 kV
<ul style="list-style-type: none"> <li>for LV (AC/LI)</li> </ul>	28/75 kV
Cooling method	ONAN/ONAF
Efficiency power (at factor = 0.80)	$\geq 99.4\%$

The step-up transformers shall be equipped with all standard auxiliary equipment, such as:

- HV and HV neutral bushings
- LV bushings

- On-load tap-changer
- Oil conserver with magnetic oil level gauge
- Buchholz gas relay, including equipment for testing of the Buchholz gas relay
- Pressure relief device
- Thermometers
- Indicators
- Dehydrating breather with silica gel
- Equipment for implementation of “thermal image” function/temperature monitoring equipment
- Equipment for implementation of “Restricted Earth Fault” protection
- Control cubicle
- Lifting lugs
- Oil filling hole
- Oil drain valve
- Oil sampling valve
- Wheels for bi-directional drive
- Earthing terminals
- Rating plate
- Other appurtenant equipment, not explicitly mentioned here above

As a part of “thermal image” function system, each step-up transformer shall be supplied with built-in 132 kV current transformer in middle HV bushing, with the following characteristics:

	<b>GSU TR</b>
<input type="checkbox"/> Quantity	1 pc/step-up transformer
<input type="checkbox"/> Location	inside middle step-up transformer’s HV bushing
<input type="checkbox"/> Highest voltage for equipment	132 kV
<input type="checkbox"/> Rated transformation ratio	100/1 A
<input type="checkbox"/> Accuracy class and rated output	cl. 0.5, Fs=5, 30 VA

Also, for the purpose of restricted earth fault protection (64REF), each step-up transformer shall be supplied with built-in 132 kV current transformer in HV neutral point bushing, with the following characteristics:

***Note- HV CT and Neutral Bushing CT terminal boxes to be provided on the tank and should be oil leak proof. CT shorting link to be provided in terminal box.***

***Tolerances***

Permissible deviation between the required and guaranteed characteristics shall be within the following tolerances according to IEC 60076-1:

Total Losses (1)	+10% of the total losses
Component losses (1)	+15% of each component loss
(1) The loss tolerances of multi-winding transformers apply to every pair of windings unless the guarantee states that they apply to a given load condition.	
Voltage ratio at no load on principal tapping for a specified first pair of windings	The lower of the following values: a) $\pm 0,5\%$ of guaranteed ratio b) $\pm 1/10$ of the actual percentage impedance on the principal tapping
Voltage ratio on other tapings, same pair Voltage ratio for further pairs	To be agreed, but not less than the lesser of the values in a) and b) above  To be agreed, but not less than the lesser of the values in a) and b) above
Short-circuit impedance for a separate- winding transformer with two windings or a specified first pair of separate windings in a multi-winding transformer	
a) principal tapping	When the impedance value is $\geq 10\%$ , $\pm 7.5\%$ of the guaranteed value When the impedance value is $< 10\%$ , $\pm 10\%$ of the guaranteed value
b) any other tapping of the pair	When the impedance value is $\geq 10\%$ , $\pm 10\%$ of the guaranteed value When the impedance value is $< 10\%$ , $\pm 15\%$ of the guaranteed value
No-load current	+30% of the guaranteed value

### Operation Modes of GSU Transformers

The transformers shall be designed and constructed that can operate within the following operation modes:

#### The Load Rejection on Generator Transformer

According to Standard IEC 60076-1, the transformer shall be able to withstand 1.4 times rated voltage (LV:  $1.4 \times U_r - LV = 15.4$  kV) for 5 s at the transformer terminals to which the generator is to be connected in case of load rejection of generating Unit.

#### Operation at Frequency Different than Rated 50 Hz

The transformers shall be designed and constructed to operate within frequency deviations in the electric power system as defined in Pakistan Grid Code.

### **Operation at Voltage Different than Rated Value**

The transformers shall be designed and constructed to operate within voltage deviations in the electric power system as defined in Pakistan Grid Code.

### **Ability to Withstand Short Circuit**

According to Standard IEC 60076-5, the transformers shall be designed and constructed to withstand without damage the thermal and dynamic effects of external short circuits. Supplier shall submit all calculations necessary to prove ability to withstand these thermal and dynamic effects of external short circuits.

The transformers shall be designed and constructed for the value of short circuit apparent power of system not less than  $S=10.000$  MVA, as specified in Standard IEC 60076-5 for the system voltage of 145 kV.

Thermal ability to withstand short-circuit shall be demonstrated by calculation (according to IEC 60076-5).

The ability to withstand the dynamic effects of short-circuit shall be demonstrated by calculation and design consideration (according to Standard IEC 60076-5).

### **Tools**

The special tools as required for assembly and disassembly, maintenance or adjustment are part of supply.

The sets shall comprise at least for each transformer type described previously:

- Complete set of alloy steel, core hardened, single ended wrenches, spanners, socket wrenches, etc. to fit with all nuts and bolts of the supply.
- Complete set of the special tools for dealing with every component of the supply, such as tap changer, bushings windings, instruments etc.
- Jacking equipment for use when rotating the wheels to accomplish the change in direction of travel.

The tools shall be furnished orderly and stored on a suitable wrench board with reference mark of each tool for classified positioning and easy identification. A complete list of tools shall be provided.

### **Painting**

As far as practicable, all exterior metal parts shall be hot-dipped galvanized, and be provided with adequate durable and weather proof two coat paint finish. Parts not dipped galvanized, subject to the approval of Project Manager, shall have a 4-coat painting (rust primer, filler, 1st and 2nd finishing coat). The color of the final paint shall correspond to the RAL color code 7001.

### **Name Plates and Other Designation Plates**

- A rating plate according to IEC 60076 and WAPDA/NTDC specifications.
- A diagram plate is showing in an approved manner the internal connections and the voltage vector relationship of the several windings in accordance with IEC 60076, and in addition plans view of the transformer giving the correct physical relationship of the terminals.
- A plate showing the location and function of all valves and air release cocks or plugs.

This plate shall also warn the operator to refer to maintenance instructions before applying vacuum treatment.

- Numbered plates for all valves, cocks etc.
- A plate showing all electrical circuits and terminal blocks. This plate shall be located at the inner side of the hinged door of the marshalling kiosk.
- A clear marking of the transformer bays. spare parts as recommended by the manufacturer for five years of operation.

## **Installation Requirements**

In addition to General Technical Requirements, the following requirements shall be applied:

- The Supplier shall carry out all the necessary Works for installation of the step-up transformers on the places where they are to be placed.
- Transformers shall be filled with dry and purified oil which shall be properly tested thereafter.
- All surfaces on transformers shall be cleaned from oil and dust, paint repaired where required before putting the transformer under voltage.
- Proper attention shall be paid to the tightening of the bolts in order to get good electric contact between the components.

The transformer shall be equipped with four wheels to allow an installation on a pair of rails. The transformers shall be properly fixed to the rails by the wheel blocking devices.

## **Documentation**

### **Documentation to be Submitted after Commencement Date**

The Supplier shall submit the following documentation/information together with appropriate Schedules of Technical Data for Electrical Equipment duly filled in:

- General arrangement drawings, showing details of all associated equipment and accessories, their overall and shipping dimensions, particulars for lifting, weights of the complete transformer, of its components and oil.
- Detailed technical descriptions with characteristics of step-up transformers and pertaining/appurtenant equipment (catalogues, descriptive literature, manufacturing Specifications, etc.).
- Reference list of similar transformers installed in similar climatic and service conditions.
- Detailed Inspection Test Plan (ITP) with the descriptions and methods proposed for carrying out Workshop and Site tests.
- List of available type test certificates, giving details on the kind of tests, type of transformer tested, and date of tests.
- List of available previously tested similar transformers and/or representative models on which the short-circuit withstand test was performed (according to IEC 60076-5), mentioning the basic data (type, rated data of the transformer, year of testing and name of the laboratory where the testing was executed). For a transformer similar to the

reference transformer (offered transformer), the detailed descriptions of the components and the arrangement of the tested transformer, are required.

- Quality management system manual and ISO certificate of the equipment manufacturer.
- Technical description, erection drawings, list of drawings, diagrams, extracts from calculations, instructions for erection, operation, maintenance and overhaul of transformer.
- List of equipment for control, signaling, measuring and protection including their data as well as layouts.
- List of sensors with main data and installation method/place.

### Calculations

Together with the submitted documentation, the Supplier shall make available to the Employer all detailed calculations for new step-up transformers with descriptions (electro-magnetic calculations, mechanical, technical, calculations of short-circuits proving the ability of step-up transformers to withstand effects of short-circuits, etc.).

### Diagrams/Drawings

The Supplier shall submit to the Employer the following drawings/diagrams as a minimum:

- Outline drawings of transformers, including their dimensions.
- Drawings of cross sections within the transformer, including distances.
- Transport drawings.
- Connection diagrams of measuring, control and signaling.
- Other diagrams as deemed necessary by the Supplier.

### Other Documentation

The Supplier shall submit to the Employer the following documentation:

- Test program for workshop and Site tests.
- Schedule for production, erection, etc.
- Control and quality programmed.
- Installation, operation and maintenance manual.
- Technical reports.
- Test reports.

### Tests

#### General

The tests shall be made according to the requirements of the applicable standards. Type and routine tests, inspections, checks, measurements at factory shall be planned and performed under the full responsibility of the Supplier. The Supplier shall also be held responsible for damages which have been verified in the field tests. Employer reserves the right to arrange for his representatives to witness the tests. On this purpose notification shall be made at least 30 days before the beginning of each test, in any case a detailed test schedule with the minimal information specified below shall be submitted to Employer's approval in no later than 45 days before the commencement of tests:

- Diagrams of test circuits including electrical characteristics of the individual test components to be used.
- Connection diagram of the test circuit to the unit and/or component to be tested.
- Reference standards and the applicable clauses within those standards.
- Value to be checked before, during and after the tests.

The standards used for the purpose of testing shall also be clearly identified.

### **Type Tests**

Transformers for type tests shall be type tested for typical units in accordance with the latest relevant IEC Standards. An evidence of type testing at reputed Government approved International Test Laboratory for the particular model and similar configuration being offered shall be submitted with the proposal. The test reports shall be in English.

### **Shop Tests**

Routine tests:

- a) All routine tests shall be made in accordance with IEC 60076.

The following tests shall be made on each transformer.

- a) Tightness of transformer tanks shall be tested for oil leaks when filled at operating temperature.
- b) Measurement of winding resistance.
- c) Measurement of no-load losses and current.
- d) Measurement of voltage ratio and check of voltage vector relationship.
- e) Separate-source power frequency voltage-withstand test.
- f) Induced over voltage withstand test.
- g) Partial discharge measurements.
- h) Measurement of insulation resistance between windings and between each winding and tank.
- i) Measurements of loss angle.
- j) Measurement of impedance voltage, short-circuit impedance and load loss.
- k) Checks of gases dissolved oil (chromatographic analysis of the gases dissolved in the oil)
- l) Checks of breakdown of insulating oil.
- m) Quality control of paint application.
- n) Temperature rise test for each type of transformer.

The test reports, oscillograms and other data shall be submitted to the Employer for approval.

### **Site Tests**

On each transformer the following tests and checks shall be performed.

1. Measurement of insulation resistances (by Megger)
2. Checking of protective devices (The Buchholz relay shall be provided with adequate test devices)
3. Oil check and calibration and setting-on of the oil temperature relays
4. Check of operation of tap changer
5. Load test

6. Checking of vector group symbol
7. Calibration and setting-on the winding temperature relay

**Tests On Bushings**

Test certificates of the identical bushings in accordance with IEC 60137 shall be submitted to the Employer.

Initials of Signatory to Bid:.....

**Schedule – B To Bid**

**WORK TO BE PERFORMED BY SUBCONTRACTORS**

The bidder will do the work with his own forces except the work listed below which he intends to sub-contract.

<u>Items of Work to be Sub-Contracted</u>	<u>Name and address of Sub-Contractor</u>	<u>Statement of similar works previously executed (attach evidence)</u>
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**Note:**

1. No change of Sub-Contractor shall be made by the bidder without prior approval of the Employer.
2. The truthfulness and accuracy of the statement as to the experience of Sub- Contractors is guaranteed by the bidder. The Employers judgment shall be final as to the evaluation of the experience of Sub-Contractors submitted by the bidder.
3. Statement of similar works shall include description, location & value of work, year completed and name & address of the clients.

Initials of Signatory to Bid:.....

**Schedule – C To Bid**

**PROPOSED PROGRAMME OF WORKS**

Bidder shall provide a program in a 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, Procurement, shipment & Inspection Plan, 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 months from the effective date of contract
1.	Establishment of site office	
2.	Submission of Procurement, Shipment & Inspection Plan	
4.	Erection/Installation a) Commencement b) Completion	
5.	Testing & Pre-commissioning a) Commencement b) Completion	
6.	Commissioning	

The proposed program of Works shall base on the Schedule of Implementation (16 months) as per Bidding Documents.

Initials of Signatory to Bid:.....

**SCHEDULE – D TO BID**

**DEVIATIONS  
FROM TECHNICAL PROVISIONS**

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

Sr. No.	Clause No. / Section No.	Deviations/Clarifications
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**Not Applicable**

Note: Attach additional sheets, if necessary

Initials of Signatory to Bid:.....

**Schedule – E To Bid**

**DEVIATIONS FROM  
CONTRACTUAL CONDITIONS**

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

Sr. No.	Clause No. / Section No.	Deviations/Clarifications
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**Not Applicable**

Initials of Signatory to Bid:.....

[Note: Attach additional sheets, if necessary]

**Schedule –F To Bid**

**METHOD OF PERFORMING WORKS**

The bidder is required to submit a narrative outlining the method of performing the Works.

Initials of Signatory to Bid:.....

**Schedule – G To Bid**

**PROPOSED ORGANISATION**

The bidder shall list in this Schedule the key personnel he will employ from Head office and from Site office to direct and execute the Works, together with their names, qualifications, experience, positions held and their nationalities.

Designation	Name of Person	Summary of Qualifications Experience, Present	Position and Nationality
-------------	----------------	--	-----------------------------

- Head Office
  
  
  
  
  
  
  
  
  
  
- Site Office
  - Contractor's Representative Site Superintendent Supervising Engineer
  - Plant Erectors Construction Supervisors Other Key Staff

Initials of Signatory to Bid:.....

**Schedule – H To Bid  
(INTEGRITY PACT)**

*[To be filled and signed by the Bidder]*

**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 time 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: .....

Name of Seller/Supplier: .....

Signature: .....

Signature: .....

[Seal]

[Seal]

**Letter of Price Bid  
and  
Schedules to bid**

## **Letter of Price bid and Schedules to bid**

### **Letter of Price Bid**

### **Schedules to Bid**

- Schedule I to Bid: Estimated Progress Payments
- Schedule J to Bid: Lump Sum Cost Breakdown for Major Cost Items

### **Schedule of Prices**

- Preamble to Schedule of Prices
- Schedule of Prices
- Summary of Bid Prices

### Letter of Price Bid

**Bid Reference No.:** .....

To:

**Project Director (RHPP),  
Room No. 331 PEDO House  
Plot No. 38 B/2 Phase V Hayatabad Peshawar  
Ph No: (+92-91) 9217004  
E-mail: [aziz.ahmad@pedo.pk](mailto:aziz.ahmad@pedo.pk)**

Gentlemen,

1. Having examined the Bidding Documents including Instructions to Bidders, Conditions of Contract, Specifications, Drawings, Schedules to Bid, Schedule of Prices and Addenda Nos. .... 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 ..... hereby offer to execute and complete such Works and remedy any defects therein in conformity with the said Documents including Addenda thereto for the Total Bid Price comprising of Local Currency Component of Pak Rupees ..... (Rs. ....) or such other sum as may be ascertained in accordance with the said Documents.
2. We understand that all the Schedules attached hereto form part of this Bid.
3. The discount offered and methodology for its application is .....
4. We undertake, if our Bid is accepted, to commence the Works and to deliver and complete the whole of the Works comprised in the Contract within the time(s) stated in Preamble to the Conditions of Contract.
5. We agree to abide by this Bid for the period of ..... days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
6. Unless and until a formal Agreement is prepared and executed, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
7. We undertake, if our Bid is accepted to execute the Performance Security referred to in Clause 10 of Conditions of Contract for the due performance of the Contract.
8. We understand that you are not bound to accept the lowest or any Bid you may receive.
9. 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.
10. We confirm, if our Bid is accepted, that all partners of the joint venture shall be liable jointly and severally for the execution of the Contract and the composition or the constitution of the joint venture shall not be altered without the prior consent of the Employer. (Please delete in case of Bid from a single firm).

Dated this ..... day of ..... 2023

Signature ..... in the capacity of .....duly authorized to sign the Bid for and on behalf  
of .....  
(Name of Bidder in Block Capitals)

(Seal of Bidder)

Bidder's Address

.....  
.....

Witness:

Signature: .....

Name: .....

Address:

.....  
.....

Occupation .....

**Schedule – I 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 Programme of Works and the Rates in the Schedule of Prices, expressed in foreign and local currency of payments:

Period	Amounts	
	LCC (Rs.)	FCC
Ist Month		
2 <sup>nd</sup> Month		
3 <sup>rd</sup> Month		
.....		
.....		
.....		
.....		
.....		
18 <sup>th</sup> Month		
Defect Liability Period (DLP)		
After Defect Liability Period (DLP)		
<b>Total Bid Price</b>		

Initials of Signatory to Bid: .....

**Schedule – J To Bid**

**LUMP SUM COST BREAKUP FOR MAJOR COST ITEMS**

The Bidder is to provide a detailed breakup of his Lump sum costs in a manner that the overall picture for the quoted price can be understood. It should include major heading wise cost breakup including rate analyses for at least 6 major cost items as required to analyze it.

## **SCHEDULE OF PRICES**

### **Description**

1. Preamble to Schedule of Prices
2. Schedule of Prices
  2. (a) Summary of Bids
  2. (b) Design, Manufacture, Supply, Installation, Testing and Commissioning  
of 132 kV GIS For 17 MW Ranolia Hydropower Plant
  2. (c) Additional Recommended Spare Parts For Period of Five Years

## 1. PREAMBLE TO SCHEDULE OF PRICES

### 1. General

- 1.1 The Schedule of Prices shall be read in conjunction with the Conditions of Contract together with the Specifications delineated in SCHEDULE – A TO BID “SPECIFIC WORKS DATA”.
- 1.2 The Contract shall be for the whole of the Works as described in these Bidding Documents. Bids must be for the complete scope of Work.

### 2. Description & Quantities

- 2.1 The general directions and descriptions of work and materials are not necessarily repeated nor summarized in the Schedule of Prices. References to the relevant sections of the Bidding Documents shall be made before entering prices against each item in the Schedule of Prices.
- 2.2 The quantities shown in the Schedule of Prices are estimated quantities only as an indication of the Scope of Work to enable the bidder to bid for different items of the Works for his estimate of costs. The estimated quantities shall be used for comparing the bids. It is, however, to be noted that in the event of any increase or decrease in the quantity of any item of Works and subject to provisions of the Conditions of Contract herein, the actual quantities executed will be paid.

### 3. Units & Abbreviations

- 3.1 Units of measurement, symbols and abbreviations expressed in the Bidding Documents shall comply both with FPS & MKS System.

The following abbreviations shall be used in the Schedule of Prices:

	<b><u>Abbreviation</u></b>
Foreign Currency Component	FCC
Local Currency Component	LCC
United States Dollars	US\$
Pakistani Rupees	PKR/Rs
Number	No.
Kilometer	km
Kilogram	Kg
Cubic Meter	Cu.m
Provisional Sum	PS
Percent	%

#### 4. Rates and Prices

- 4.1 Except as otherwise expressly provided under the Conditions of Contract, the unit rates and lump sum amounts entered in the Schedule of Prices 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 Works, the provision of services including his overheads, income tax, super tax, other indirect costs, customs & other duties, 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.

The unit rates shall be extended to show the total amount for each item. The total of the Schedule of Prices is the Total Bid Price and shall be entered in Paragraph 1 of the Form of Price Bid. Where a discrepancy exists between the unit rate and the extended total amount, the unit rate shall be taken as correct and the total amount adjusted accordingly.

- 4.2 Unless otherwise stipulated in the Conditions of Contract, the rates and prices entered by the Bidder shall be fixed and firm and shall not be subject to adjustment during the performance of the Contract.
- 4.3 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on 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 a Bidder.

Additional/reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed/deducted as per provisions of the Conditions of Contract.

- 4.4 The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Schedule of Prices, 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 and no separate payment will be made for those items.

The rates, prices and amounts shall be entered against each item in the Schedule of Prices. Any item against which no rate or price is entered by the bidder will not be paid for by the Employer when executed and shall be deemed covered by the rates and prices for other items in the Schedule of Prices.

- 4.5 The Bidder shall be deemed to have obtained all information as to port clearance facilities and charges, loading and unloading facilities and charges, storage facilities and charges, transportation facilities and charges, congestion and/or other conditions to be expected at Karachi Port and or any other seaport of Pakistan and all requirements related thereto.

The Contractor shall be responsible to make complete arrangements for the transportation and proper storage of the Plant at the Site.

The Bidder shall be deemed to have included all clearing, forwarding and other incidental costs in this regard in his Bid. The Contractor will have the option to use either Karachi Port or any other seaport of Pakistan.

- 4.6 The Contractor shall provide all parts of the Works to be completed in every respect for commercial operation. Notwithstanding that any details, accessories, etc. required for the complete installation and satisfactory operation of the Plant, are not specifically mentioned in the Schedule of Prices, Specifications including Bid Drawings, such details shall be

considered as included in the Contract Price. All charges for the supply of goods, materials, accessories or work not specifically mentioned herein but necessary for the completion and operation of the Works shall be deemed to have been included in the quoted prices.

- 4.7 All costs in connection with inspection and witnessing of Factory Acceptance Tests within and outside Pakistan as per provisions of Sub-Clause 20.6 of Particular Conditions of Contract shall be borne by the Contractor and shall be deemed to have been included in the quoted prices.

All costs in connection with the holding of meetings shall be borne by the Contractor.

The rates in the Schedule of Prices shall also include Contractor's cost for providing Performance Security and other Bank Guarantees required for performance of the Contract.

## 5. Bid Prices

### 5.1 Break-up of Bid Prices

The various elements of Bid Prices shall be quoted as detailed below:

#### a) FOB port of Shipment

The bidder shall quote prices for FOB Port of Shipment for all individual items and for each sub-total of Plant, Erection Equipment and Spare Parts to be supplied from outside Pakistan on FOB (Port of Shipment) basis.

The FOB Port of Shipment price shall include the cost of the following:

- i. Design, manufacture, finishing, factory testing, packing for transport and all transportation costs incurred in placing the Plant, Erection Equipment and Spare Parts and other materials on board the vessel.
- ii. Provision of clean on-board bills of lading.
- iii. Export taxes, fees or charges levied on exporting Plant, Erection Equipment and Spare Parts and other materials in the country of origin, in the case of Plant imported to Pakistan.
- iv. Provision of certificates of origin, consular invoices (if required) or any other documents issued in the country of origin.

#### b) Insurance & Shipping

##### i) Insurance

The Bidder shall quote prices for insurance cover from ex-factory/ex-works to the Site (warehouse to warehouse) for the sub-totals of the Plant, Erection Equipment, Spare Parts, Workshop Equipment and other materials to be imported in Pakistan for the Contract. Such prices shall include all insurance costs covering the responsibility for all loss or damages while loading, unloading, storing and trimming on board the vessel at the port of shipment or on inland carrier and transportation to Site.

The prices for transportation/marine insurance cover shall be quoted on the basis of insurance through insurers from any country(ies) of the world acceptable to the Employer.

##### ii) Shipping

The bidder shall quote prices for shipping from port of shipment to the port of entry in Pakistan for the sub-totals of the Plant, Erection Equipment, Spare Parts and other materials to be imported for the Contract in Pakistan. Such prices shall include all marine transportation costs including ocean freight and other charges, etc.

The prices for shipping/marine transportation shall be quoted for shipment through reputed shipping lines including Pakistan National Shipping Corporation (PNSC).

Cost of shipment(s) effected by the Contractor at his option by aircraft shall be deemed to be included in the Total Bid Price.

c) CIF (Pakistan Seaport) Price

CIF (Pakistan Seaports) price will be the total of FOB price, insurance and shipping prices, described hereabove.

d) Customs Duties

Customs duty for Plant, Erection Equipment, Spare Parts and other materials, if any, offered from outside Pakistan shall also include sales tax, import duty and other import charges.

e) DDP (Pakistan Seaport) Price

DDP (Pakistan Seaport) price will be the total of CIF price and customs duties, described hereabove.

f) Ex-factory Price for Local Goods

The bidder shall quote prices for Local Goods, materials (other than materials required for civil works such as concrete and reinforcement etc. Cost of which will be included in the price of civil works) and equipment in the relevant column of Ex-Factory (Pakistan) of "Schedule of Prices". Such prices shall include:

- i) Design documentation, drawings, drafting, planning services, manufacturing, testing and packing of finished goods ready for delivery to Site.
- ii) All custom duties, sales tax and other taxes already paid or payable on the components and raw materials used in the manufacture or assembly of Local Goods, materials and equipment.

g) Insurance of Local Goods

Insurance of Local Goods and other materials from factory to Site shall include all insurance costs covering the responsibility of all losses or damages, while loading, unloading, storing, trimming on the carrier and transporting to Site. Checking and verifying of consignments, issuance of receiving reports and damage reports (when applicable) shall be the Contractor's responsibility. The cost of insurance shall be quoted on the basis of insurance through National Insurance Company (NIC) of Pakistan or any other insurance company operating in Pakistan and acceptable to the Employer.

h) Local Transport

Inland transportation for the Plant, Erection Equipment and Spare Parts shall be the Contractor's responsibility in respect of:

i) the Plant, Erection Equipment, Spare Parts and other materials offered from outside Pakistan; from the port of entry in Pakistan to the storage area at the Site, and

ii) indigenous Plant, Erection Equipment, Spare Parts and other materials if any, offered from within Pakistan; from the factory in Pakistan to the storage area at the Site, and

all charges occurring therefrom including octroi, zila tax, fees etc. and charges for loading, forwarding and unloading expenses shall be borne by the Contractor. Unloading at the Site, handling of the Plant, Erection Equipment, Spare Parts and other materials to the designated point of Site storage, checking and verifying all shipments received against shipping documents, issue of all receiving reports and issues of damage reports (when applicable) shall be the Contractor's responsibility.

The bidder shall recognize such elements of the costs which he expects to incur in the performance of the Works and shall include all such costs in the rates and amounts entered in the Schedule of Prices.

i) Erection & Other Work

The bidder shall quote prices for Erection & Other Work (foreign and local currency portion) for the sub-totals of the Plant at the Site. Such prices shall include the costs of handling of the Plant and other materials from Site storage to point of final installation, erection, installation, testing, commissioning including all inspection, reliability tests, the cost of foreign and local erection staff and labour, tools and equipment, etc. It shall also cover the services of qualified representative(s) of the supplier(s) of Plant or adviser(s) to assure proper erection and commissioning of the Plant. The price shall also include cost of arranging insurances in respect of Contractor's operations in Pakistan which insurances shall be effected by the Contractor with the National Insurance Company (NIC) of Pakistan or any other insurance company operating in Pakistan and acceptable to the Employer.

j) **Civil Works:**

The Bidder shall quote prices for Civil Works separately. Such prices shall include all costs of materials used for civil works and other construction works, supervision including all costs of construction staff and labour, Contractor's Equipment and tools etc. Contractor will be paid for actual measured value of work performed.

## 5.2 Total Bid Price

The total of bid prices under foreign currency and local currency columns in the Schedule of

Prices shall be entered in the Summary of Bid Prices. The unit rates and prices and lumpsum amount entered in the Schedule of Prices will be the rates at which the Contractor will be paid, and shall be deemed to be the full inclusive value of the work including all costs of performing the Works such as overheads, income tax, super tax, profits, costs of accepting the general risks, liabilities and obligations set forth or implied in the Contract except for the amounts reimbursable, if any, to the Contractor under the Contract. The rates shall also include Contractor's cost for providing Performance Security and other Bank Guarantees required for performance of the Contract.

## **6. Erection and Testing Equipment and Maintenance Tools**

- 6.1 In the Schedule of Prices, under Erection and Testing Equipment & maintenance tools the Employer has drawn up a list of Erection and Testing Equipment and Maintenance Tools along with estimated quantities. The bidder shall enter the price only in FOB price column for all individual items and shall give the break-up of the prices into FOB Port of Shipment, Shipping to wharf at the port of entry in Pakistan, Insurance to Site and Local Transport in Pakistan against each sub-total. These Erection and Testing Equipment and Maintenance Tools shall be furnished and the cost included in the Bid Price.

The Employer shall have the option of ordering additional quantities of these essential Erection and Testing Equipment and Maintenance Tools, at the unit rates entered in the Schedule of Prices no later than one year after the Commencement Date.

The unit rate for any item shall be computed by dividing the total amount by the quantity of that item.

- 6.2 The bidder shall also list, in the space provided in the Schedule of Prices, Additional Recommended Erection and Testing Equipment and Maintenance Tools, any Erection and Testing Equipment and Maintenance Tools which he recommends be provided for the Works, in addition to those already specified by the Employer in the Schedule of Prices. The bidder shall enter against each such item, its recommended quantity, and price. The cost of such Additional Recommended Erection and Testing Equipment and Maintenance Tools will not be taken into account in the evaluation of bids.

The Additional Recommended Erection and Testing Equipment and Maintenance Tools may be selected by the Engineer/Employer and the Contract Price will be adjusted in accordance with the prices set against those items in the Schedule of Prices.

## **7. Spare Parts**

- 7.1 In the Schedule of Prices, under Spare Parts, the Employer has drawn up a list of spare parts along with estimated quantities. The bidder shall enter the price only in FOB price column for all individual items and shall indicate the breakup of price into FOB Port of Shipment, Shipping to wharf at the port of entry in Pakistan, Insurance to Site and Local Transport in Pakistan against each sub-total. These spare parts shall be furnished and the cost included in the Bid Price.

The successful Bidder shall prepare and at the time of preparation of Letter of Acceptance submit to the Employer the unit rates of all individual items of the spare parts. The unit rates of the spare parts for the required quantities shall give a total cost equal to the amount entered in the Schedule of Price for spare parts.

The Employer shall have the option of ordering additional quantities of these essential spare parts, at the unit rates entered in the Schedule of Prices, no later than one year after the Commencement Date.

The unit rate for any item shall be computed by dividing the total amount by the quantity of that item.

- 7.2 The Bidder shall also list in the space provided in the Schedule of Prices any Spare Parts which he recommends be provided for the Works, in addition to those specified by the Employer in the Schedule of Prices. The Bidder shall enter against each such item, its recommended quantity, rate and price. The cost of such Additional Recommended Spare Parts will not be considered in the evaluation of bids.

The Additional Recommended Spare Parts may be selected by the Engineer/ Employer and the Contract Price will be adjusted in accordance with the prices set against those items in the Schedule of Prices.

## **8. Reimbursable Costs**

- 8.1 If provided in the Particular Conditions of Contract, the Contractor shall be reimbursed the actual amounts (without any overhead charges and profits) disbursed by him in respect of non-exempt Pakistani customs, import duties, and taxes, levied upon Plant, Erection Equipment and Spare Parts imported directly by him or his subcontractors into Pakistan for the purpose of this Contract for incorporation in the Works.
- 8.2 The bidder shall recognize such elements of the costs which he expects to incur in the performance of the Works and which are reimbursable, and he shall not include any such costs in the rates and amounts entered in the Schedule of Prices.

## **9. Provisional Sums**

- 9.1 Provisional Sums included and so designated in the Schedule of Prices if any, shall be expended in whole or in part at the direction and discretion of the Employer/ Engineer. The Contractor will only receive payment in respect of Provisional Sums if he has been instructed by the Employer/Engineer to utilize such sums.

**2.(a) SCHEDULE OF PRICES - SUMMARY OF BID PRICES**

<b>Bill No.</b>	<b>DESCRIPTION</b>	<b>Total Amount (in USD)</b>	<b>Total Amount (in PKR)</b>
1	Design, Manufacture, Supply, Installation, Testing and Commissioning of 132 kV GIS and Associated Works		
2	Provisional Sums		<b>100,000,000</b>
Specify Exchange rate of USD in accordance with the IB 25.1			
<b>Grand Total to be carried forward to Letter of Price Bid in Equivalent Pak Rs.</b>			

**Name of Bidder:** \_\_\_\_\_

**Bidder's Signature & Stamp:** \_\_\_\_\_

**2. (b) SCHEDULE OF PRICES**

**Design, Manufacture, Supply, Installation, Testing and Commissioning of 132 kV GIS and Transmission Line For 17 MW Ranolia Hydropower Plant**

S.No	Description	FOREIGN Currency Component (USD)	Local Currency Component (PKR)
1	Design, supply, installation, testing and commissioning of 132 kV Gas Insulated Substation based on attached Single Line Diagram. with commissioning and testing as per approved standards and Type policy 2023 of NTDC.		
2	Replacement of three numbers of damaged 220 kV towers (including conductors, insulators and dampers) for Power transmission line from the 132 kV GIS switchyard for approximate length of about one kilometer, including installation, testing and commissioning.		
3	Procurement, installation and testing of energy meters and back up metering system as per NTDC Standards.		
4	Procurement, installation, testing and commissioning of new 12.5 MVA Power Transformer. Qty 01 No		
5	Procurement and installation of Lightning Arrester 132 kV, Qty 02 Nos		
6	Refurbishment of SCADA system including PLC"s (Programable Logic Controllers) , Electronic Circuit Boards and all relevant items, Software and testing/ commissioning.		
7	Refurbishment, Testing commissioning of Protection Relays.		
8	Replacement of damaged control and Power cables between control room, switchgear room and the GIS Switchyard.		
9	Replacement of damaged HVAC system for main control room and control building.		
10	Restoration of damaged lighting system in switchyard and around Powerhouse control building.		
11	Replacement of Earthing and Lightening Protection in Switch Yard Area and around plant building		
12	Battery System 52 Number (600AH/2V), Per Battery Monitoring SDXJ600 3 Number & 24V, 48V Charging module.TH48V30A-110, C1-5 ER11040/T5 3 Number supported by P&I Equipment's.		
13	GE Main PLC for Unit LCU's, 132 KV Switchyard, (PAC system RX3i) Power Supply 40W DC IC695PSD040, input 60W, 4-24V, AWG 14-22, Torque 0.5Nm with IO modules Complete Sets.		
14	Testing & Commissioning of whole system Switchyard & Power House as Per NTDC Standard & rectification of any fault(s) prior to synchronization.		
<b>Total Bid Amount (PKR)</b>			

**Total Bid Price in Words (PKR):** \_\_\_\_\_  
\_\_\_\_\_

**Sign & Stamp by the bidder:** \_\_\_\_\_

**2. (c) SCHEDULE OF PRICES (OPTIONAL) – ADDITIONAL  
RECOMMENDED SPARE PARTS FOR PERIOD OF FIVE YEARS**

1. The bidder shall propose in the space provided, a detailed list of Spare Parts which are recommended by him in addition to those specified by the Employer under Schedule 2(b) above.
2. The purchase of additional recommended Spare Parts would be at the discretion of the Employer and the cost of such equipment will not be taken into consideration in the evaluation of bids. However, the Contract Price will be adjusted to include the cost of additional Spare Parts which are selected by the Employer.
3. The list of Spare Parts shall include description as well as quantity of each item and the unit rate and prices for the total quantity proposed for each item of Spare Parts.

Item No.	Description	Unit	Qty	Unit Rate										Total Price		
				Foreign Currency Component					Local Currency Component					Foreign Currency Component	Local Currency Component	
				FOB Price	Shipping	Insurance	CIF Pak Sea Port	Total	Customs Duty for Col No.8	Ex-Factory Pakistan (For Local Goods)	Local Trans-Port	Total				
<b>A</b>	<b>132 kV GIS</b>															
1	Circuit breaker	Pc	1													
2	Disconnecter for GIS	Pc	2													
3	Maintenance Earthing Switch for GIS	Pc	2													
4	Fast acting Earthing Switch for GIS	Pc	2													
5	Current Transformer for GIS	Pc	3													
6	Voltage Transformer for GIS	Pc	3													
7	Surge Arrester for GIS	Pc	3													
8	Bushing for GIS	Pc	3													
9	Motor driven mechanism for each item	Pc														
10	Indicating instrument of Each type	Pc	1													

11	Auxiliary relay, contactors, push buttons, miniature circuit breakers:	Pc	1										
12	bolts, nuts, washers, gasket, etc., which could be removed or required for routine maintenance	%	10										
<b>B</b>	<b>15 MVA Power Transformer</b>												
1	Complete gaskets for the transformer	set	1										
2	Complete dehydrating breather	Pc	1										
3	Silica gel filing	set	1										
4	Oil Level Guage	Pc	1										
5	Pressure relief device	Pc	1										
6	Complete Buchholz relay	Pc	1										
7	Thermometers (of each type	Pc	1										
8	Spare parts for control cubicle (including but not restricted to relays, contactors, instruments, terminals, circuit breakers, fuses, etc.	set	1										
9	HV bushing	Pc	2										
10	HV neutral bushing	Pc	1										
11	LV bushing	Pc	2										
12	Bolts, nuts, washers, sealing compounds, etc., which could be removed or required for replacement due to routine maintenance	%	10										

132 kV GIS RHPP  
 Volume-I of Bidding Documents

13	Current transformer for "thermal image"	Pc	1										
14	Current transformer for "REF" protection	Pc	1										
15	RTD for oil and windings temperature(per centage quantity for each transformer	%	10										
16	Auto Tap Changer	Set	1										
Total (not to be carried to Summary of Bid Price)													

## **Part- II Conditions of Contract**

## Preamble To Conditions of Contract

<b>Commencement Date.</b>	Sub-Clause 1.1.1.(i) The date for commencement of the Works is the date of issuance of the Engineer's Written Order to Commence which shall be issued within 14 days of signing of Contract Agreement.
<b>Defect Liability Period</b>	Sub-Clause 1.1.11 The Defect Liability Period is 12 months (365 Days) after the date certified in Taking Over Certificate but subject to extension as provided under Sub Clause 30.4
<b>The Employer</b>	Sub-Clause 1.1.12. The Employer is Pakhtunkhwa Energy Development Organization (PEDO), Government of Khyber Pakhtunkhwa, Pakistan and is represented by the Chief Executive Officer (CEO), PEDO.
<b>The Employer Representative</b>	The Employer Representative is <b>Project Director, Rehabilitation of 17 MW Ranolia HPP, PEDO House 38-B-II, Phase V, Hayatabad, Peshawar,</b> Or a person appointed by Employer and notified to the contractor
<b>The Engineer</b>	Sub-Clause 1.1.15. <b>The Engineer is; Project Director, Rehabilitation of 17 MW Ranolia HPP, PEDO House 38-B-II, Phase V, Hayatabad, Peshawar,</b> or a person appointed by Employer and notified to the contractor
<b>Time for Completion</b>	Sub-Clause 1.1.35. The Time for Completion for whole of the Works is 18 Months reckoned from the Commencement Date for the project excluding Defects Liability Period.
<b>Warranty Period</b>	Sub-Clause 1.1.40 The Warranty Period is two <u>(02)</u> year for (goods/equipment).
<b>Engineer's Duties &amp; Authorities</b>	Sub-Clause 2.1. The duties & authorities of the Engineer are specified in Particular Conditions of Contract.

<b>Confirmation in Writing</b>	<p>Sub-Clause 2.6</p> <p>(i) The Contractor shall notify to the Project Manager Engineer within ten (10) days, if he requires any confirmation.</p> <p>(ii) The Project Manager/ Engineer shall confirm the decision/instruction within ten (10) days of the requirement.</p>
<b>Ruling Language</b>	<p>Sub-Clause 5.1.</p> <p>The version in English language (ruling language) shall prevail.</p>
<b>Day to Day Communications</b>	<p>Sub-Clause 5.2.</p> <p>The language for day-to-day communication is English.</p>
<b>Program to be Furnished</b>	<p>Sub-Clause 12.1.</p> <p>The Program must be submitted in the form of Bar-Chart on Primavera P6 with critical path for individual activities and overall Project activities and as specified Conditions of Contract within 28 days from date of receipt of letter of Acceptance.</p>
<b>Employer's Equipment</b>	<p>Sub-Clause 14.4.</p> <p>There will be no Employer's Equipment available for use by the Contractor.</p>
<b>Working Hours</b>	<p>Sub-Clause 18.3.</p> <p>The normal working hours on the Site are to conform to the applicable Labour laws and the existing customs of Pakistan.</p>
<b>Time for Completion</b>	<p>Sub-Clause 25.1</p> <p>Period of Completion is as stated under Sub-Clause 1.1.35 hereof.</p>
<b>Earlier Completion</b>	<p>Sub-Clause 26.3 (a)</p> <p>(i) Amount of Bonus per day: Decimal zero five percent (0.05%) of the Contract Price.</p> <p>(ii) Max. Amount of Bonus. Ten percent (10%) of the Contract Price.</p>
<b>Delay in Completion</b>	<p>Sub-Clause 27.1.</p> <p>Failure of the Contractor to meet the Time for Completion entitles the Employer to deduct from the Contract Price, the liquidated damages @ 0.05 % percent of the Contract Price as stated in Letter of Acceptance, excluding Provisional Sums for each and every day, including holidays, of delay or part thereof; but to a maximum limit of 10% of contract price as stated in the Letter of Acceptance, excluding Provisional Sums.</p>

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<b>Prolonged Delay</b>	<p>Sub-Clause 27.2.</p> <p>Maximum amount recoverable from the Contractor by the Employer shall be 10% of Contract Price as stated in the Letter of Acceptance, excluding Provisional Sums.</p>
<b>Terms of Payment</b>	<p>Sub-Clause 33.1.</p> <p>In addition to the provisions under Clause 33, the terms of payment shall be as stated in Sub-Clause 33.1 of Particular Conditions of Contract.</p>
<b>Payment in Foreign Currencies</b>	<p>Sub-Clause 35.1.</p> <p>Payment will only be made in local currency</p> <ol style="list-style-type: none"><li>i. The Amount in Local currency (PKRs) shall be determined by applying TT &amp; OD composite selling exchange rate published / authorized by State Bank of Pakistan (SBP) for the day 28 days prior to Contractor's Payment Request / Bill submission bill.</li><li>ii. In case the Contractor fails to complete the work within the time for completion prescribed under sub-clause 1.1.35 of Preamble to the Conditions of Contract or within the extended time granted pursuant to GCC26.1, the payment in equivalent local currency for foreign exchange component shall be determined using either the SBP exchange rate prevailing on day 28 days prior to stipulated completion date or the SBP notified exchange rate for the day 28 days prior to Contractor's Bill / Payment Request submission date after the expiry of Contract completion/ Extended Time whichever is more beneficial to the employer.</li></ol>
<b>Insurance of Works</b>	<p>Sub-Clause 43.1.</p> <p>The amount of insurance shall be for full replacement value of the Works. For the deductibles, if any, the Contractor shall submit an undertaking that he shall indemnify and keep indemnified the Employer for the amount of deductibles provided in the insurance policy.</p> <p>Sub-Clause 43.1.(a)</p> <p>The additional risks to be insured are as stated in Sub-Clause 43.1(a) of the Particular Conditions of Contract.</p>
<b>Third Party Liability</b>	<p>Sub-Clause 43.3.</p> <p>The amount of insurance against third party liability taken out by the Contractor shall not be less than Pak Rs. Two million per occurrence with number of occurrences unlimited.</p>
<b>Payment on Termination for Employer's Default</b>	<p>Sub-Clause 46.3.</p> <p>The additional amount payable by the Employer on termination shall not exceed the actual cost of work executed.</p>

<b>Labour, Materials and Transport</b>	Sub-Clause 47.1. The procedure for Price Adjustment is prescribed in Annexure – I, attached to Sub-Clause 47.1 of PCC.
<b>Notices to Employers and Engineer</b>	Sub-Clause 49.2. The address of the Employer for notices is the same as given in Sub- Clause 1.1.12 here above. The address of the Engineer for notices is the same as given in Sub-Clause 1.1.15 here above.
<b>Applicable Law</b>	Sub-Clause 51.1. The Contract in all respects be read and construed and shall operate as a Pakistani Contract in conformity with the Laws of Islamic Republic of Pakistan.
<b>Procedural Law for Arbitration</b>	Sub-Clause 51.2. The procedural law for arbitration shall be the Rules of Pakistan Arbitration Act 1940 as amended from time to time.
<b>Language and Place of Arbitration</b>	Sub-Clause 51.3. The language of arbitration is English. The place of arbitration is PESHAWAR Islamic Republic of Pakistan.

## **General Conditions of Contract**

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## **General Conditions of Contract**

### **Definitions and Interpretations**

#### **1.1 Definitions**

In the Contract (as hereinafter defined) the following words and expressions shall have the meanings hereby assigned to them:

**1.1.1** "Commencement Date" means whichever the latest is of:

- i) the date specified in the Preamble as the date for commencement of the Works or the date when the Contractor receives,
- ii) such payment in advance of the commencement of the Works as may be specified in the terms of payment, or
- iii) notice of the issue of any import license necessary for commencing performance of the Contract, or
- iv) notice that any legal requirements necessary for the Contract to enter into force have been fulfilled, or
- v) notice that any necessary financial or administrative requirements specified in Part II as conditions precedent to commencement have been fulfilled.

**1.1.2** "Conditions" means the Preamble to and these Conditions of Contract, Parts I and II.

**1.1.3** "Contract" means the agreement between the Employer and the Contractor for the execution of the Works incorporating the Conditions, Specification, Employer's Drawings and Contractor's Drawings, priced and completed Schedules, Tender, Letter of Acceptance and such further documents as may be expressly incorporated by the Letter of Acceptance.

**1.1.4** "Contract Agreement" means the documents recording the terms of the Contract between the Employer and the Contractor.

**1.1.5** "Contract Price" means the sum stated in the Letter of Acceptance as payable to the Contractor for the execution of the Works.

**1.1.6** "Contractor" means the person whose tender has been accepted by the Employer and the legal successors in title to the Contractor but not (except with the consent of the Employer) any assignee of the Contractor.

**1.1.7** "Contractor's Drawings" means all drawings, samples, patterns, models and operation and maintenance manuals to be submitted by the Contractor in accordance with Clause 6.

**1.1.8** "Contractor's Equipment" means all appliances or things of whatsoever nature required for the purposes of the Works but does not include Plant.

**1.1.9** "Contractor's Risks" means the risks defined in Sub-Clause 37.3.

**1.1.10** "Defects Liability Certificate" means the certificate to be issued by the Engineer to the Contractor in accordance with Sub-Clause 30.11.

**1.1.11** "Defects Liability Period" means one year or the period stated in Part II following taking over, during which the Contractor is responsible for making good defects and damage in

- accordance with Clause 30.
- 1.1.12** "Employer" means the person named as such in the Preamble and the legal successors in title to the Employer but not (except with the consent of the Contractor) any assignee of the Employer.
- 1.1.13** "Employer's Drawings" means all the drawings and information provided by the Employer or the Engineer to the Contractor under the Contract.
- 1.1.14** "Employer's Risks" means those risks defined in Sub-Clause 37.2.
- 1.1.15** "Engineer" means the person appointed by the Employer to act as Engineer for the purposes of the Contract and designated as such in the Preamble.
- 1.1.16** "Engineer's Representative" means any representative of the Engineer appointed from time to time by the Engineer under Sub-Clause 2.2.
- 1.1.17** "Final Certificate of Payment", means the certificate to be issued by the Engineer to the Employer in accordance with Sub-Clause 33.10.
- 1.1.18** "Force Majeure" has the meaning assigned to it under Sub-Clause 44.1.
- 1.1.19** "Foreign Currency" means a currency of a country other than that in which Plant is to be installed.
- 1.1.20** "Gross Misconduct" means any act or omission of the Contractor in violation of the most elementary rules of diligence which a conscientious contractor in the same position and under the same circumstances would have followed.
- 1.1.21** "Letter of Acceptance" means the formal acceptance by the Employer of the Tender incorporating any adjustments or variations to the Tender agreed between the Employer and the Contractor.
- 1.1.22** "Performance Security" means the security to be provided by the Contractor in accordance with Sub-clause 10.1. for the due performance of the Contract.
- 1.1.23** "Plant" means machinery, apparatus, materials and all things to be provided under the Contract for incorporation in the Works.
- 1.1.24** "Programme" means the Programme to be submitted by the Contractor in accordance with Sub-Clause 12.1 and any approved revision thereto.
- 1.1.25** "Provisional Sum" means a sum, described as such for the execution of work or for the supply of goods or services, to be used in accordance with Sub-Clause 36.1.
- 1.1.26** "Risks Transfer Date" means the date when the risk of loss of or damage to the Works passes from the Contractor to the Employer in accordance with Sub-Clause 39.1.
- 1.1.27** "Schedule of Prices" means the completed and priced Schedule of Prices, or any part or individual schedule thereof, submitted by the Contractor with his Tender and forming a part of the Contract documents.
- 1.1.28** "Section" means a part of the Works specifically identified as such as in the Contract.
- 1.1.29** "Site" means the place or places, provided or made available by the Employer where work is to be done by the Contractor or to which Plant is to be delivered, together with so much of the area surrounding the same as the Contractor shall with the consent of the Employer

use in connection with the Works otherwise than merely for the purposes of access.

- 1.1.30** "Specification" means the specification of the Works included in the Contract and any modification thereof made in accordance with Clause 31.
- 1.1.31** "Subcontractor" means any person (other than the Contractor) named in the Contract for any part of the Works, or any person to whom any part of the Contract has been subcontracted with the consent of the Engineer, and the Subcontractor's legal successors in title but not any assignee of the Subcontractor.
- 1.1.32** "Taking-Over Certificate" means the certificate to be given by the Engineer to the Contractor in accordance with Clause 29.
- 1.1.33** "Tender" means the Contractor's priced offer to the Employer for the Execution of the Works.
- 1.1.34** "Tests on Completion" means the tests specified in the Contract or otherwise agreed by the Engineer and the Contractor to be performed before the Works are taken over by the Employer.
- 1.1.35** "Time for Completion" means the time stated in the Preamble for completing the Works or any Section thereof and passing the Tests on Completion calculated from the Commencement Date unless extended in accordance with Clause 26.
- 1.1.36** "Variation Order" means any written order, identified as such, issued to the Contractor by the Engineer under Sub-Clause 31.1.
- 1.1.37** "Works" means all Plant to be provided and work to be done by the Contractor under the Contract.

## **1.2 Headings and Titles**

The headings and titles in these Conditions shall not be deemed part thereof or be taken into consideration in the interpretation or construction of the Contract.

## **1.3 Interpretation**

Words importing persons or parties shall include firms and corporations and any organisation having legal capacity.

Words importing the singular only also include the plural and vice versa where the context requires.

## **1.4 Written Communications**

Wherever in the contract provision is made for a communication to be "written" or "in writing" this means any hand-written, type-written or printed communication, including telex, cable and facsimile transmission.

## **1.5 Notices, Consents and Approvals**

Wherever in the Contract provision is made for the giving of notice, consent or approval by any person, such consent or approval shall not be unreasonably withheld. Unless otherwise specified, such notice, consent or approval shall be in writing and the word "notify" shall be construed accordingly.

## **1.6 Costs, Overhead Charges and Profit**

Whenever by these Conditions the Contractor is entitled to be paid cost, such cost shall be properly incurred and shall include any overhead charges properly allocable thereto but not profit unless so stated. Any profit entitlement shall be added to cost at the percentage stated in the Preamble.

## **1.7 Periods**

In these Conditions "days" means calendar day and "year" means 365 days.

## **Engineer and Engineer's Representative**

### **2.1 Engineer's Duties**

The Engineer shall carry out the duties specified in the Contract.

If the Engineer is required, under the terms of his appointment by the Employer, to obtain the specific approval of the Employer before carrying out any of these duties, full particulars of such requirements shall be set out in Part II.

Except as expressly stated in the Contract the Engineer shall have no authority to relieve the Contractor of any of his obligations under the Contract.

### **2.2 Engineer's Representative**

The Engineer's Representative shall be appointed by and be responsible to the Engineer and shall only carry out such duties and exercise such authority as may be delegated to him by the Engineer under Sub-Clause 2.3.

### **2.3 Engineer's Power to Delegate**

The Engineer may from time to time delegate to the Engineer's Representative any of the duties vested in the Engineer and may at any time revoke such delegation.

Any such delegation or revocation shall be in writing and shall not take effect until a copy thereof has been delivered to the Contractor and the Employer.

Any decision, instruction or approval given by the Engineer's Representative to the Contractor in accordance with such delegation shall have the same effect as though it had been given by the Engineer. However:

(a) any failure of the Engineer's Representative to disapprove any Plant or workmanship shall not prejudice the right of the Engineer to disapprove such Plant or workmanship and to give instructions for the rectification thereof.

(b) if the Contractor questions any decision or instruction of the Engineer's Representative he may refer the matter to the Engineer who shall confirm, reverse or vary such decision or instruction.

### **2.4 Engineer to Act Impartially**

Wherever under the Contract the Engineer is required to exercise his discretion by:

(a) giving his decision, opinion or consent, or

(b) expressing his satisfaction or approval, or

(c) determining value, or

(d) otherwise taking action which may affect the rights and obligations of the Employer or the Contractor,

he shall exercise such discretion impartially within the terms of the Contract and having regard to all the circumstances.

## **2.5 Engineer's Decisions and Instructions**

The Contractor shall proceed with the decisions and instructions given by the Engineer in accordance with these Conditions.

## **2.6 Confirmation in Writing**

The Contractor may require the Engineer to confirm in writing any decision or instruction of the Engineer which is not in writing. The Contractor shall notify the Engineer of such requirement without undue delay. Such a decision or instruction shall not be effective until written confirmation thereof has been received by the Contractor.

## **2.7 Disputing Engineer's Decisions and Instructions**

If the Contractor disputes or questions any decision or instruction under Sub-Clause 2.5 or a written confirmation under Sub-Clause 2.6, he shall give notice to the Engineer within twenty eight (28) days after receipt thereof, giving his reasons.

The Engineer shall within a further period of twenty eight (28) days by notice to the Contractor and the Employer with reasons, confirm, reverse or vary such decision or instruction.

If either party disagrees with the action taken by the Engineer, or if the Engineer fails to reply to the Contractor's notice within the stipulated twenty eight (28) days, and the matter cannot be settled amicably that party shall be at liberty, subject to Sub-Clause 50.1, to refer the matter to arbitration in accordance with the Contract.

## **2.8 Replacement of Engineer**

The Employer shall not appoint any person to act in replacement of the Engineer without the consent of the Contractor.

## **Assignment and Subcontracting**

### **3.1 Assignment**

The Contractor shall not assign the Contract or any part of his obligations under the Contract. A charge in favour of the Contractor's bankers of any monies due under the Contract shall not be considered an assignment.

### **4.1 Subcontracting**

The Contractor shall not subcontract the whole of the Works.

Except where otherwise provided by the Contract, the Contractor shall not subcontract any part of the Works without the prior consent of the Engineer.

The Contractor shall however, not require such consent for purchases of materials or to place contracts for minor details or for any part of the Works of which the manufacturer or supplier is named in the Contract.

The Contractor shall be responsible for the acts, defaults and neglects of any Subcontractor, his agents or employees as fully as if they were the acts, defaults or neglects of the Contractor, his agents or employees.

## **Contract Documents**

### **5.1 Ruling Language**

Where versions of the Contract are prepared in different languages, the version which is to prevail shall be specified in the Preamble. The language of such version is referred to as the ruling language.

### **5.2 Day to Day Communications**

The language for day to day communications is stated in the Preamble.

### **5.3 Priority of Contract Documents**

Unless otherwise provided in the Contract, the priority of the Contract documents shall be as follows:

1. The Letter of Acceptance
2. The Preamble
3. The Conditions of Contract, Part II
4. The Conditions of Contract, Part I
5. Any other documents forming part of the Contract.

### **5.4 Documents Mutually Explanatory**

Subject to Sub-Clause 5.3. the Contract documents shall be taken as mutually explanatory. Any ambiguities or discrepancies shall be resolved by the Engineer, who shall then instruct the Contractor thereon.

If the Contractor considers that compliance with such instructions will result in any cost which the Contractor could not reasonably have anticipated, he shall forthwith inform the Engineer with full supporting details. The Engineer shall then, if he approves, certify such costs as may be reasonable, together with profit where appropriate, which shall be added to the Contract Price.

If on the other hand compliance with such instructions results in lower costs for the Contractor then he had reason to anticipate, the Engineer shall certify a deduction from the Contract Price allowing for profit where appropriate.

### **6.1 Contractor's Drawings**

The Contractor shall submit to the Engineer for approval:

- (a) within the time given in the Contract or in the Programme such drawings, samples,

models or information as may be called for therein, and in the numbers therein required, and

(b) during the progress of the Works, such drawings of the general arrangement and details of the Works as specified in the Contract or as the Engineer may require.

The Engineer shall signify his approval or disapproval thereof. If he fails to do so within the time given in the Contract or the Programme or if no time limit is specified, within twenty eight (28) days of receipt, they shall be deemed to be approved.

Approved drawings, samples and models shall be signed or otherwise identified by the Engineer.

The Contractor shall supply additional copies of approved drawings in the form and numbers stated in the Contract.

## **6.2 Consequences of Disapproval of Contractor's Drawings**

Any Contractor's Drawings which the Engineer disapprove shall be forthwith modified to meet the requirements of the Engineer and shall be re-submitted.

## **6.3 Approved Contractor's Drawings**

Approved Contractor's Drawings shall not be departed from except as provided in Clause 31.

## **6.4 Inspection of Contractor's Drawings**

The Engineer shall have the right at all reasonable times to inspect, at Contractor's premises, all Contractor's Drawings of any part of the Works.

## **6.5 Erection Information**

The Contractor shall provide, within the times stated in the Contract or in the Programme, drawings showing how the Plant is to be affixed and any other information required for:

- (a) preparing suitable foundations or other means of support;
- (b) providing suitable access on the Site for the Plant and any necessary equipment to the place where the Plant is to be erected; and
- (c) making necessary connections to the Plant.

## **6.6 Operation and Maintenance Manuals**

Before the Works are taken over in accordance with Clause 29 the Contractor shall supply operation and maintenance manuals together with drawings of the Works as built. These shall be in such detail as will enable the Employer to operate, maintain, adjust and repair all parts of the Works.

Unless otherwise stated in Part II the manuals and drawings shall be in the ruling language, and in such form and numbers as stated in the Contract.

Unless otherwise agreed, the Works shall not be considered to be completed for the purposes of taking over until such manuals and drawings have been supplied to the Employer.

## **6.7 Employer's Use of Contractor's Drawings**

Contractor's Drawings may be used by the Employer for no other purpose than completing, operating, maintaining, adjusting and repairing the Works.

## **6.8 Contractor's Use of Employer's Drawings**

The Employer's Drawings, Specification and other information submitted by the Employer or the Engineer to the Contractor shall remain the property of the Employer. These shall not, without the consent of the Employer, be used, copied or communicated to a third party by the Contractor unless necessary for the purposes of the Contract.

## **6.9 Manufacturing Drawings**

Unless otherwise specified in Part II, the Contractor shall not be required to disclose to the Employer or the Engineer the Contractor's confidential manufacturing drawings, designs, know-how or manufacturing practices, processes or operations.

## **7.1 Errors in Contractor's Drawings**

The Contractor shall be responsible for any errors or omissions in the Contractor's Drawings unless they are due to incorrect Employer's Drawings or other written information supplied by the Employer or the Engineer. Approval by the Engineer of the Contractor's Drawings shall not relieve the Contractor from any responsibility under this Sub-Clause.

The Contractor shall bear any costs he may incur as a result of delay in providing Contractor's Drawings and other information or as a result of errors or omissions therein, for which the Contractor is responsible.

The Contractor shall at his own cost carry out any alterations or remedial work necessitated by such errors or omissions for which he is responsible and modify the Contractor's Drawings and such other information accordingly.

The performance of his obligations under this Clause shall be in full satisfaction of the Contractor's liability under this Clause but shall not relieve him of his liability under Sub-Clause 27.1.

## **7.2 Errors by Employer or Engineer**

The Employer shall be responsible for the Employer's Drawings and for other written information supplied by the Employer or the Engineer and for the details of special work specified by either of them. If such Employer's Drawings, information or details are incorrect and necessitate alterations of the work, the Employer shall pay the Contractor the cost of the alterations together with profit as certified by the Engineer.

## **Obligations of the Contractor**

### **8.1 General Obligations**

The Contractor shall, in accordance with the Contract, with due care and diligence, design, manufacture, deliver to Site, erect, test and commission the Plant and carry out the Works within the Time for Completion. The Contractor shall also provide all necessary Contractor's Equipment, superintendence, labour and, except as stated in Part II, all necessary facilities therefor.

## **8.2 Setting Out**

The Contractor shall set out the Works in relation to original points, lines and levels of reference given by the Engineer in writing and provide all necessary instruments, appliances and labour for such purposes.

If, at any time during the execution of the Works, any error appears in the positions, levels, dimensions or alignment of the Works, the Contractor shall rectify the error.

The Contractor shall bear the cost of rectifying the error, unless the error results from incorrect information supplied in writing by the Employer, the Engineer or from default by another contractor, in which case the cost together with profit shall be borne by the Employer.

The checking of any setting-out by the Engineer shall not relieve the Contractor of his responsibility for the accuracy thereof.

## **9.1 Contract Agreement**

The Contractor shall, if called upon so to do, execute a Contract Agreement recording all the terms of the Contract, to be prepared by and completed at the cost of the Employer in the form annexed hereto.

## **10.1 Performance Security**

If Part II requires the Contractor to obtain a Performance Security, he shall obtain the same in the sum required, within twenty-eight (28) days after the receipt of the Letter of Acceptance. The Performance Security shall be provided by a person and in a form approved by the Employer. The cost of complying with the requirements of this Clause shall be borne by the Contractor.

## **10.2 Period of Validity**

The Performance Security shall be valid until the Contractor has executed, completed and remedied defects in the Works in accordance with the Contract. No claim shall be made against the Performance Security after the issue of the Defects Liability Certificate and the Performance Security shall be returned to the Contractor within fourteen (14) days of the issue of the Defects Liability Certificate.

## **10.3 Claims under Performance Security**

Whether or not the Performance Security is stated by its terms to be payable on the demand of the Employer the Employer shall not make a claim under the Performance Security unless one of the following conditions is satisfied:

(a) the Contractor is in breach of the Contract and fails to remedy the breach within forty two (42) days after receiving written notice from the Employer requiring him so to do. The notice shall state the intention to claim under the Performance Security, the amount claimed and the breach relied upon, or

(b) the Employer and the Contractor have agreed in writing that the amount demanded is payable to the Employer, and the amount has not been paid within forty two (42) days thereafter, or

(c) the Employer has obtained an award in arbitration under Clause 50 and the amount awarded has not been paid within forty two (42) days after the award, or

(d) the Contractor has gone into liquidation or is bankrupt.

In every case the Employer shall, when making the claim, send a copy to the Contractor.

### **11.1 Site Data**

The Tender shall be deemed to have been based on such data on climatic, hydrological and general conditions on the Site and for the operation of the Works as the Employer or the Engineer has made available to the Contractor for the purposes of the Tender. The Contractor shall be responsible for his own interpretation of such data.

### **11.2 Sufficiency of Contract Price**

The Contractor shall be deemed to have satisfied himself on and taken account of in his Tender:

(a) all the conditions and circumstances affecting the Contract Price,

(b) the possibility of carrying out the Works as described in the Contract,

(c) the general circumstances at the Site (if access has been made available to him) and

(d) the general labour position at the Site.

The Contractor shall not be responsible for the accuracy of information given in writing by the Employer or the Engineer but shall be responsible for his interpretation of information received from whatever source.

### **11.3 Physical Obstructions and Conditions**

If during the execution of the Works on Site the Contractor encounters physical obstructions or conditions of the kind stipulated in Sub-Clause 26.1.c) the Contractor shall be entitled to recover the additional cost incurred in consequence.

The Engineer shall certify and there shall be added to the Contract Price the additional cost of:

(a) complying with any instruction which the Engineer, after due consultation with the Employer and the Contractor, issues to the Contractor in connection therewith, and

(b) any necessary measures which the Contractor may take in the absence of specific instructions from the Engineer.

### **12.1 Programme to be Furnished**

The Contractor shall submit to the Engineer for his approval the Programme which shall contain the following:

(a) the order in which the Contractor proposes to carry out the Works (including design, manufacture, delivery to Site, erection, testing and commissioning),

(b) the times when submission and approval of the Contractor's Drawing are required,

- (c) the times by which the Contractor requires the Employer:
  - (i) to furnish any Employer's Drawings,
  - (ii) to provide access to the Site,
  - (iii) to have completed the necessary civil engineering work (including foundations for the Plant) and
  - (iv) to have obtained any import licences, consents, wayleaves and approvals necessary for the purpose of the Works.

The Contractor shall submit the Programme in the form stated in the Preamble within twenty-eight (28) days after the Commencement Date.

The approval by the Engineer of the Programme shall not relieve the Contractor or the Employer from any obligation under the Contract.

## **12.2 Alteration to Programme**

No material alteration to the Programme shall be made without the approval of the Engineer.

## **12.3 Revision of Programme**

If the progress of the Works does not conform to the Programme, the Engineer may instruct the Contractor to revise the Programme.

If such modifications are required for reasons for which the Contractor is not responsible, the cost of preparing the revised Programme shall be certified by the Engineer and added to the Contract Price.

## **13.1 Contractor's Representative**

The Contractor shall employ one or more competent representatives to superintend the carrying out of the Works on Site. They shall be fluent in the language for day to day communications. Their names shall be communicated in writing to the Engineer before work on Site begins.

Any instruction or notice which the Engineer gives to the Contractor's representative shall be deemed to have been given to the Contractor.

## **13.2 Objection to Contractor's Employees**

The Contractor shall, upon the Engineer's written instruction, remove from the Works any person employed by him in the execution of the Works, who misconducts himself or is incompetent or negligent.

## **14.1 Contractor's Equipment**

Except to the extent specified in Part II, the Contractor shall provide all Contractor's Equipment necessary to complete the Works.

All Contractor's Equipment shall, when brought on to the Site, be deemed to be exclusively intended for the execution of the Works. The Contractor shall not remove from the Site any such equipment, except:

(a) when it is no longer required for the completion of the Works, or

(b) when the Engineer has given his consent.

#### **14.2 Safety Precautions**

The Contractor shall observe all applicable regulations regarding safety on the Site.

Unless otherwise agreed, the Contractor shall, from the commencement of work on Site until taking over provide:

(a) fencing, lighting, guarding and watching of the Works, and

(b) temporary roadways, footways, guards and fences which may be necessary for the accommodation and protection of owners and occupiers of adjacent property, the public and others.

#### **14.3 Electricity Water and Gas**

The Contractor shall be entitled to use for the purposes of the Works such supplies of electricity, water, gas and other services as may be available on the Site and of which details are given in the Preamble. The Contractor shall pay the Employer a fair price for such use. The Contractor shall at his own cost provide any apparatus necessary for such use.

#### **14.4 Employer's Equipment**

The Employer shall, if the Contractor so requests for the execution of the Works, operate any available equipment of which details are given in the Preamble. The Contractor shall pay the Employer a fair price for such use.

The Employer shall during such operation retain control of and be responsible for the safe working of the equipment.

#### **14.5 Clearance of Site**

The Contractor shall from time to time during the progress of the Works clear away and remove all surplus materials and rubbish. On completion of the Works the Contractor shall remove all Contractor's Equipment and leave the whole of the Site and the Works clean and in a workmanlike condition, to the satisfaction of the Engineer.

#### **14.6 Opportunities for Other Contractors**

The Contractor shall, in accordance with the Engineer's instructions, afford to other contractors engaged by the Employer to work on the Site and persons lawfully upon the Site all reasonable opportunities for carrying out their work provided that the same shall not obstruct or disturb the progress of the Works. The Contractor shall also afford such opportunities to the employees of the Employer.

If the Contractor, on the written request of the Engineer, makes available any Contractor's Equipment or provides any other service, the Employer shall pay the Contractor accordingly. The amount to be paid shall be certified by the Engineer and added to the Contract Price.

#### **14.7 Authority for Access**

No persons other than the employees of the Contractor and his Subcontractors shall be

allowed on the Site except with the consent of the Engineer.

Facilities to inspect the Works shall at all times be afforded by the Contractor to the Engineer and his representative, the Employer's representatives, authorities and officials.

#### **14.8 Information for Import Permits and Licenses**

The Contractor shall submit to the Employer in good time such details of all Plant and Contractor's Equipment as will enable the Employer to obtain all necessary import permits or licenses.

#### **15.1 Compliance with Statutes, Regulations**

The Contractor shall, in all matters arising in the performance of the Contract, comply in all respects with, give all notices and pay all fees required by the provisions of any national or state statute, ordinance or other law or any regulation or bye-law of any duly constituted authority.

#### **15.2 Compliance with Laws**

The Contractor shall comply with the laws of the country of manufacture concerning the manufacture of the Plant, and the laws of the country where the Plant is to be erected so far as such laws concern the manufacture, erection and operation of the Works.

#### **16.1 Patent Rights**

The Contractor shall indemnify the Employer against all claims of infringement of any patent, registered design, copyright, trade mark or trade name or other intellectual property right provided that all of following conditions are satisfied:

- (a) The claim or proceedings arise out of the design, construction, manufacture or use of Works or any Plant supplied by the Contractor.
- (b) The right was protected at the date of the Contract in the Contractor's country or the country in which the Plant is to be manufactured or erected.
- (c) The infringement or allegation of infringement was not caused by any use of the Works otherwise than for purpose indicated by or reasonably to be inferred from date Specification.
- (d) The infringement or allegation of infringement was not caused by the use of any Plant in association or combination with any plant not supplied by the Contractor, unless such association or combination was disclosed to the Contractor prior to the due of the Tender.
- (e) The infringement of or allegation of infringement was not caused by the Contractor following the design or instructions of the Employer or the Engineer.

#### **16.2 Claims in respect of Patent Right**

The Contractor shall be promptly notified of any claim under this Clause made against the Employer. The Contractor may at his own cost conduct negotiations for the settlement of such claim, and any litigation that may arise there from.

The Employer shall not make any admission which might be prejudicial to the Contractor unless the Contractor has failed to take over the conduct of the negotiations or litigation

within a reasonable time after having been so requested.

The Contractor may not, however, conduct such negotiations or litigation before he has given the Employer such reasonable security as the Employer may require. The security shall be for an amount which is an assessment of the compensation, damages, expenses and costs for which the Employer may become liable and which are the subject of the indemnity under Sub-Clause 16.1.

The Employer shall, at the request of the Contractor, provide all available assistance for the purpose of contesting any such claim or action, and shall be repaid all reasonable costs incurred in so doing.

### **16.3 Employer's Warranty for Patent Rights**

If any matter for which the Contractor is not liable to indemnify the Employer under Sub-Clause 16.1 causes the infringement or allegation of infringement by the Contractor of any patent, registered design, trade mark, copyright or other intellectual property right, the Employer shall indemnify the Contractor against all claims damages, expenses and costs which the Contractor may incur in relation thereto. The provisions of Sub-Clause 16.2 shall apply mutatis mutandis.

## **Obligations of the Employer**

### **17.1 Access to and Possession of the Site**

The Employer shall in reasonable time grant the Contractor access to and possession of the Site, which may, however, not be exclusive to the Contractor.

The Employer shall to the extent stated in the Specification provide means of access for the delivery of all Plant and Contractor's Equipment to the Site.

### **17.2 Assistance with Local Regulations**

The Employer shall assist the Contractor in ascertaining the nature and extent of any laws, regulations, orders or bye-laws, and customs in the country where the Plant is to be erected, which may affect the Contractor in the performance of his obligations under the Contract. The Employer shall if so requested procure for the Contractor copies thereof and information relating thereto at the Contractor's cost.

### **17.3 Civil Works on Site**

Any building, structure, foundation or means of access on the Site to be provided by the Employer shall be in a condition suitable for the reception, movement, installation and maintenance of the Works within the time or times indicated in the Programme.

### **17.4 Consents and Wayleaves**

The Employer shall in due time obtain or grant all consents including permits-to-work, wayleaves and approvals required for the Works.

### **17.5 Import Permits and Licences**

The Employer shall obtain all import permits or licences required for any part of the Plant or Works in reasonable time having regard to the time for delivery of the Plant and completion of the Works.

## **Labour**

### **18.1 Engagement of Labour**

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all labour and for their payment, housing feeding and transport.

### **18.2 Returns of Labour**

The Contractor shall submit detailed returns showing the supervisory staff and the numbers of the several classes of labour from time to time employed by the Contractor and Subcontractors on the Site. The returns shall be submitted in such form and at such intervals as the Engineer may prescribe.

### **18.3 Working Hours**

On the Site, the Contractor shall observe the normal working hours stated in the Preamble. The Employer shall allow the Contractor to carry out work on the Site continuously during such working hours.

The Engineer may after consulting the Employer and the Contractor, direct that work shall be done at other times. The extra cost, together with profit, shall be added to the Contract Price unless it has become necessary for the completion of the Works within the Time for Completion, and this is due to the default of the Contractor.

### **18.4 Restriction on Working Hours**

No work shall be carried out on the Site outside normal working hours or on the locally recognised days of rest, unless:

- (a) the Contract so provides, or
- (b) the work is unavoidable or necessary for the saving of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer, or
- (c) the Engineer gives his consent.

## **Workmanship and Materials**

### **19.1 Manner of Execution**

All Plant to be supplied shall be manufactured and all work to be done shall be executed in the manner set out in the Contract.

Where the manner of manufacture and execution is not set out in the Contract, the work shall be executed in a proper and workmanlike manner in accordance with recognised good practice.

### **19.2 Covering up Work**

The Contractor shall give the Engineer full opportunity to examine, measure and test any work on Site which is about to be covered up or put out of view.

The Contractor shall give due notice to the Engineer whenever such work is ready for

examination, measurement or testing.

The Engineer shall then, unless he notifies the Contractor that he considers it unnecessary, without unreasonable delay carry out the examination, measurement or testing.

### **19.3 Uncovering Work**

If so instructed by the Engineer, the Contractor shall expose any parts of the Works. The Contractor shall reinstate and make good such parts to the Engineer's satisfaction.

If any parts of the Works have been covered up or put out of view by the Contractor after complying with Sub-Clause 19.2 and are found to be in accordance with the Contract the cost incurred by the Contractor in complying with the Engineer's instructions including profit shall be certified by the Engineer and added to the Contract Price.

### **20.1 Independent Inspection**

The Engineer may, if so provided in the Contract or with the Contractor's consent, delegate inspection and testing of Plant to an independent inspector. Any such delegation shall be effected in the manner required by Sub-Clause 2.3 and for this purpose such independent inspector shall be considered as an Engineer's Representative. Notice of such appointment (being not less than 14 days) shall be given by the Engineer to the Contractor.

### **20.2 Inspection and Testing During Manufacture**

The Engineer shall be entitled during manufacture to inspect, examine and test the materials and workmanship and check the progress of manufacture of all Plant to be supplied under the Contract. This shall take place on the Contractor's premises during working hours. If Plant is being manufactured on other premises, the Contractor shall obtain permission for the Engineer to carry out such inspection, examination and testing on those premises.

No such inspection, examination or testing shall release the Contractor from any obligation under the Contract.

### **20.3 Dates for Inspection and Testing**

The Contractor shall agree with the Engineer the time and place for the testing of any Plant as provided in the Contract. The Engineer shall give the Contractor 24 hours notice of his intention to attend the tests.

If the Engineer does not attend on the date agreed, the Contractor may, unless the Engineer instructs the Contractor not to do so, proceed with the tests, which shall be deemed to have been made in the Engineer's presence.

The Contractor shall forthwith forward to the Engineer duly certified copies of the test results. If the Engineer has not attended the test, he shall accept the validity of the test readings.

### **20.4 Facilities for Testing**

Where the Contract provides for tests on the premises of the Contractor or of any Sub-Contractor, the Contractor shall provide such assistance, labour materials, electricity, fuel, stores, apparatus and instruments as may be necessary to carry out the test efficiently.

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**20.5 Certificate of Testing**

When Plant has passed the tests referred to in this Clause, the Engineer shall furnish to the Contractor a certificate or endorse the Contractor's test certificate to that effect.

**21.1 Rejection**

If, as a result of the inspection, examination or testing referred to in Clause 20, the Engineer decides that any Plant is defective or otherwise not in accordance with the Contract, he may reject such Plant and shall notify the Contractor thereof immediately. The notice shall state the Engineer's objections with reasons. The Engineer shall not reject any Plant for minor defects which do not affect the commercial operation of such Plant.

The Contractor shall then with all speed make good the defect or ensure that any rejected Plant complies with the Contract.

If the Engineer requires such Plant to be retested, the tests shall be repeated under the same terms and conditions. All costs incurred by the Employer by the repetition of the tests shall be deducted from the Contract Price.

**22.1 Permission to Deliver**

The Contractor shall apply in writing to the Engineer for permission to deliver any Plant or Contractor's equipment to the Site. No Plant or Contractor's Equipment may be delivered to the Site without the Engineer's written permission.

The Contractor shall be responsible for the reception on Site of the Plant and Contractor's Equipment.

**Suspension of Works, Delivery or Erection**

**23.1 Order to Suspend**

The Engineer may at any time instruct the Contractor to:

- (a) suspend progress of the Works, or
- (b) suspend delivery of Plant or Contractor's Equipment which is ready for delivery to the Site at the time for delivery specified in the Programme, or if no time is specified, at the time appropriate for it to be delivered, or
- (c) suspend the erection of Plant which has been delivered to the Site.

When the Contractor is prevented from delivering or erecting Plant in accordance with the Programme the Engineer shall be deemed to have instructed a suspension except when such prevention is caused by the Contractor's default.

The Contractor shall during suspension protect and secure the Works or Plant affected at the Contractor's works or elsewhere or at the Site, as the case may be, against any deterioration, loss or damage.

**24.1 Cost of Suspension**

The additional cost incurred by the Contractor in protection, securing and insuring the Works or Plant and in following the Engineer's instructions under Sub-Clause 23.1 and in resumption of the work, shall be added to the Contract Price.

The Contractor shall not be entitled to be paid any additional costs if such suspension is necessary by reason of a default on the part of the Contractor.

The Contractor shall not be entitled to additional costs unless he notifies the Engineer of his intention to make such claim, within twenty eight (28) days after receipt of the order to suspend progress or delivery or of the date of deemed suspension under Sub-Clause 23.1.

#### **24.2 Payment in Event of Suspension**

The Contractor shall be entitled to payment for Plant which has not been delivered to Site if the work on Plant or delivery of Plant has been suspended for more than twenty eight (28) days. After twenty eight (28) days of suspension, the Contractor shall be entitled to payment of the value of such Plant as at the date of suspension.

A certificate of payment shall be issued on condition that:

- (a) the Contractor has marked the Plant as the Employer's property in accordance with the Engineer's instructions, and
- (b) the suspension is not due to the Contractor's default.

#### **24.3 Prolonged Suspension**

If suspension under Sub-Clause 23.1. has continued for more than eighty four (84) days, and the suspension is not due to the Contractor's default, the Contractor may by notice to the Engineer require permission to proceed within twenty eight (28) days.

If permission is not granted within that time, the Contractor may treat the suspension as an omission under Clause 31 of the Section it affects, or if the suspension affects the whole of the Works, terminate the Contract and the provisions of Clause 46 shall apply.

#### **24.4 Resumption of Work**

If the Contractor chooses not to treat prolonged suspension as an omission or termination under Sub-Clause 24.3, the Employer shall upon the request of the Contractor, take over the responsibility for protection, storage, security and insurance of the suspended Works and the risk of loss or damage thereto shall thereupon pass to the Employer.

After receipt of permission or an order to proceed, the Contractor, shall after due notice to the Engineer, examine the Works and the Plant affected by the suspension. The Contractor shall make good any deterioration or defect in or loss of the Works or Plant that may have occurred during the suspension. Cost properly incurred by the Contractor which would not have been incurred but for the suspension shall be added to the Contract Price together with profit.

The Contractor shall not be entitled to payment for costs incurred in making good any deterioration, defect or loss caused by faulty workmanship or materials or by the Contractor's failure to take the measures specified in Sub-Clause 23.1.

If the Employer has taken over risk and responsibility for the suspended Works under this Sub-Clause, risk and responsibility shall revert to the Contractor fourteen (14) days after receipt of the permission or order to proceed.

#### **Completion**

### **25.1 Time for Completion**

The Works shall be completed and shall have passed the Tests on Completion within the Time for Completion

### **26.1 Extension of Time for Completion**

The Contractor may claim an extension of the Time for Completion if he is or will be delayed in completing the Works by any of the following causes:

- (a) extra or additional work ordered in writing under Clause 31,
- (b) exceptional adverse weather conditions,
- (c) physical obstructions or conditions which could not reasonably have been foreseen by the Contractor,
- (d) Employer's or Engineer's instructions, otherwise than by reason of the Contractor's default,
- (e) the failure of the Employer to fulfil any of his obligations under the Contract,
- (f) delay by any other contractor engaged by the Employer,
- (g) any suspension of the Works under Clause 23, except when due to the Contractor's default,
- (h) any industrial dispute,
- (i) the Employer's Risks, or
- (j) Force Majeure.

The Contractor shall give to the Engineer notice of his intention to make a claim for an extension of time within fourteen (14) days of the circumstances for such a claim becoming known to the Contractor. The notice shall be followed as soon as possible by the claim with full supporting details.

The Engineer shall, after due consultation with the Employer and the Contractor, grant the Contractor from time to time, either prospectively or retrospectively, such extension of Time for Completions as may be justified. The Engineer shall notify the Employer and the Contractor accordingly.

The Contractor shall be entitled to such extension whether the delay occurs before or after the Time for Completion.

### **26.2 Delays by Subcontractors**

The Contractor shall be entitled to claim an extension of time if delay on the part of a Subcontractor is due to a cause mentioned in Clause 26.1 and such delay prevents the Contractor from meeting the Time for Completion.

### **26.3 Earlier Completion**

The Employer may require completion of the Works or part thereof earlier than the Time for Completion, on the following conditions:

- (a) The Employer and the Contractor shall first agree the extra sum to be paid for each day by which the Contractor completes the Works or part thereof earlier than the Time for Completion.
- (b) The Contractor shall not become liable under Sub-Clause 27.1 for any failure to complete the Works or the part thereof by the earlier time.

### **27.1 Delay in Completion**

If the Contractor fails to complete the Works within the Time for Completion, the Employer shall be entitled to a reduction in the Contract Price unless it can be reasonably concluded from circumstance that the Employer will suffer no loss.

The Employer shall within a reasonable time give the Contractor notice of his intention to claim a reduction.

The reduction shall be the percentage per day stated in the Preamble of that part of the Contract Price which is attributable to such part of the Works as cannot in consequence of the failure be put to the intended use. The reduction shall be computed for each day between the Time for Completion and the actual date of completion.

The reduction shall in no case exceed the maximum percentage of the Contract Price of such part stated in the Preamble.

Except as provided in Sub-Clause 27.2, such reduction shall be to the exclusion of any other remedy of the Employer in respect of the Contractor's failure to complete within the Time for Completion.

### **27.2 Prolonged Delay**

If the Employer has become entitled to the maximum reduction under Sub-Clause 27.1 for any part of the Works, he may by notice require the Contractor to complete. Such notice shall fix a final time for completion which shall be reasonable.

If the Contractor fails to complete within such time, and this is not due to a cause for which the Employer or some other contractor employed by him is responsible, the Employer may by further notice to the Contractor either:

- (a) require the Contractor to complete, or
- (b) may himself complete at the Contractor's cost provided that he does so in a reasonable manner, or
- (c) terminate the Contract.

If the Employer terminates the Contract, he shall be entitled to recover from the Contractor any loss he has suffered up to the maximum amount stated in the Preamble. If no maximum amount is stated, the Employer shall not be entitled to recover more than that part of the Contract Price which is attributable to that part of the Works which cannot by reason of the Contractor's failure be put to the intended use.

The Employer shall give credit for the value of any part of the Works which he retains.

### **Tests on Completion**

#### **28.1 Notice of Tests**

The Employer shall give to the Engineer twenty one (21) day's notice of the date after which he will be ready to make the Tests on Completion (the Tests). Unless otherwise agreed, the Tests shall take place within fourteen (14) days after the said date on such day or days as the Engineer shall notify the Contractor.

## **28.2 Time for Tests**

If the Engineer fails to appoint a time after having been asked to do so, or does not attend at the time and place appointed, the Contractor shall be entitled to proceed with the Test in his absence. The Tests shall then be deemed to have been made in the presence of the Engineer and the results of the Tests shall be accepted as accurate.

## **28.3 Delayed Tests**

If the Tests are being unduly delayed by the Contractor the Engineer may by notice require the Contractor to make the Tests within twenty one (21) days after the receipt of such notice. The Contractor shall make the Tests on such days within that period as the Contractor may fix and of which he shall give notice to the Engineer.

If the Contractor fails to make the Tests within twenty one (21) days the Engineer may himself proceed with the Tests. All Tests so made by the Engineer shall be at the risk and cost of the Contractor and the cost thereof shall be deducted from the Contract Price. The tests shall then be deemed to have been made in the presence of the Contractor and the results of the Tests shall be accepted as accurate.

## **28.4 Facilities for Tests on Completion**

Except where otherwise specified, the Employer shall provide free of charge such labour, materials, electricity, fuel, water, stores, apparatus and feedstock as may be reasonably required by the Contractor to carry out the Tests.

## **28.5 Retesting**

If the Works or any Section fails to pass the Tests, the Engineer or the Contractor may require such Tests to be repeated on the same terms and conditions. All costs to which the Employer may be put by the repetition of the Tests under this Sub-Clause or under Sub-Clause 30.7 shall be deducted from the Contract Price.

## **28.6 Disagreement as to Result of Tests**

If the Engineer and the Contractor disagree on the interpretation of the Test results, each shall give a statement of his views to the other within fourteen (14) days after such disagreement arises. The statement shall be accompanied by all relevant evidence.

## **28.7 Consequences of Failure to Pass Tests on Completion**

If the Works or any Section fails to pass the Tests on the repetition thereof under Sub-Clause 28.5, the Engineer, after due consultation with the Employer and the Contractor, shall be entitled to:

- (a) order one further repetition of the Tests under the conditions of Sub-Clause 28.5, or
- (b) reject the Works or Section in which event the Employer shall have the same remedies against the Contractor as are provided under Sub-Clause 30.5 (c), or

- (c) issue a Taking-Over Certificate, if the Employer so wishes, notwithstanding that the Works are not complete. The Contract Price shall then be reduced by such amount as may be agreed by the Employer and the Contractor or, failing agreement, as may be determined by arbitration.

## **28.8 Use by the Employer**

In considering the results of Tests carried out under Sub-Clauses 29.3, 29.4 and 30.7, the Engineer shall make allowances for the effect of any use of the Works by the Employer on the Certificate to the performance or other characteristics of the Works.

## **28.9 Test Certificate**

As soon as the Works or any Section thereof has passed the Tests, the Engineer shall issue a Certificate to the Contractor and the Employer to that effect.

## **Taking Over**

### **29.1 Taking Over**

The Works shall be taken over by the Employer when they have been completed in accordance with the Contract, except in minor respects that do not affect the use of the Works for their intended purpose, have passed the Tests on Completion and a Taking-Over Certificate has been issued or deemed to have been issued in accordance with Sub-Clause 29.2.

### **29.2 Taking-Over Certificate**

The Contractor may apply by notice to the Engineer for a Taking-Over Certificate not earlier than fourteen (14) days before the Works will in the Contractor's opinion be complete and ready for taking over under Sub-Clause 29.1.

The Engineer shall within twenty eight (28) days after the receipt of the Contractor's application either:

- (a) issue the Taking-Over Certificate to the Contractor with a copy to the Employer stating the date on which the Works were complete and ready for taking over, or
- (b) reject the application giving his reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued.

If the Engineer fails either to issue the Taking-Over Certificate or to reject the Contractor's application within the period of twenty eight (28) days he shall be deemed to have issued the Taking-Over Certificate on the last day of that period.

If the Works are divided by the Contract into Sections the Contractor shall be entitled to apply for separate Taking-Over Certificate for each such Section

### **29.3 Use before Taking Over**

The Employer shall not use any part of the Works unless a Taking-Over Certificate has been issued in respect thereof.

If nevertheless the Employer uses any part of the Works, that part which is used shall be deemed to have been taken over at the date of such use. The Engineer shall on request of the Contractor issue a Taking-Over Certificate accordingly. If the Employer uses any part

of the Works before taking over the Contractor shall be given the earliest opportunity of taking such steps as may be necessary to carry out the Tests on Completion.

The provisions of Sub-Clause 27.1 shall not apply to any part of the Works while being so used by the Employer. Clause 30 shall apply as if the part had been taken over on the date it was taken into use.

#### **29.4 Interference With Tests on Completion**

If the Contractor is prevented from carrying out the Tests on Completion by a cause for which the Employer or the Engineer or other contractors employed by the Employer are responsible, the Employer shall be deemed to have taken over the Works on the date when the Tests on Completion would have been completed but for such prevention. The Engineer shall issue a Taking-Over Certificate accordingly.

The Works shall not be deemed to have been taken over if they are not substantially in accordance with the Contract.

If the Works are taken over under this Clause the Contractor shall nevertheless carry out the Tests on Completion during the Defects Liability Period. The Engineer shall require the Tests on Completion to be carried out by fourteen (14) days notice and in accordance with the relevant provisions of Clause 28.

Any additional costs to which the Contractor may be put in making the Tests on Completion during the Defects Liability Period, shall be added to the Contract Price.

#### **Defects after Taking Over**

#### **30.1 Defects Liability Period**

Where any part of the Works is taken over separately from the Works the Defects Liability Period for that part shall commence on the date it was taken over.

#### **30.2 Making Good Defects**

The Contractor shall, subject to Sub-Clause 30.9, be responsible of making good any defect in or damage to any part of the Works which may appear or occur during the Defects Liability Period and which arises from, either:

- (a) any defective materials, workmanship or design, or
- (b) any act or omission of the Contractor during the Defects Liability Period.

The Contractor shall make good the Defects or damage as soon as practicable and at his own cost.

#### **30.3 Notice of Defects**

If any such defect appears or damage occurs, the Employer or the Engineer shall forthwith notify the Contractor thereof.

#### **30.4 Extension of Defects Liability Period**

The provision of this Clause shall apply to all replacements or renewals carried out by the

Contractor 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 part of the Works cannot be used by reason of a defect, the Defect Liability Period shall be extended only for that part.

In neither case shall the Defects Liability Period be extended by more than one year.

When erection or delivery of Plant has been suspended under Sub-Clause 23.1, the Contractor's obligations under this Clause shall not apply to any defects occurring more than three years after it would have been delivered but for the suspension or such period as may be stated in Part II.

### **30.5 Failure to Remedy Defects**

If the Contractor fails to remedy a defect or damage within a reasonable time, the Employer may fix a final time for remedying the defect or damage.

If the Contractor fails to do so, the Employer may:

- (a) carry out the work himself or by others at the Contractor's risk and cost, provided that he does so in a reasonable manner. The costs properly incurred by the Employer in remedying the defect or damage shall be deducted from the Contract Price, but the Contractor shall have no responsibility for such work, or
- (b) require the Contractor to grant the Employer a reasonable reduction in the Contract Price to be agreed or fixed by arbitration under Clause 50, or
- (c) if the defect or damage is such that the Employer has been deprived of substantially the whole of the benefit of the Works or a part thereof, he may terminate the Contract in respect of such parts of the Works as cannot be put to the intended use. The Employer shall to the exclusion of any remedy under Clause 45 be entitled to recover all sums paid in respect of such parts of the Works together with the cost of dismantling the same, clearing the Site and returning Plant to the Contractor or otherwise disposing of it in accordance with the Contractor's instructions.

### **30.6 Removal of Defective Work**

If the defect or damage is such that repairs cannot be expeditiously carried out on the Site, the Contractor may with the consent of the Engineer or the Employer remove from the Site for the purposes of repair any part of the Works which is defective or damaged.

### **30.7 Further Tests on Completion**

If the replacements or renewals are such that they may affect the performance of the Works the Employer may request that Tests on Completion be repeated to the extent necessary. The request shall be made by notice within twenty eight (28) days after the replacement or renewal. The Tests shall be carried out in accordance with Clause 28.

### **30.8 Right of Access**

Until the Final Certificate of Payment has been issued, the Contractor shall have the right of access to all parts of the Works and to records of the working and performance of the

Works.

Such right of access shall be during the Employer's normal working hours at the Contractor's risk and cost. Access shall also be granted to any duly authorised representative of the Contractor whose name has been communicated in writing to the Engineer.

Subject to the Engineer's approval, the Contractor may also at his own risk and cost make any tests which he considers desirable.

### **30.9 Defects in Employer's and Engineer's Designs**

The Contractor shall not be liable for any defects resulting from designs furnished or specified by the Employer or the Engineer.

### **30.10 Contractor to Search**

The Contractor shall, if required by the Engineer in writing, search for the cause of any defect, under the direction of the Engineer. Unless the defect is one for which the Contractor is liable under this Clause, the cost of the work carried out by the Contractor in searching for the cause of the defect shall be added to the Contract Price.

### **30.11 Defects Liability Certificate**

When the Defects Liability Period for the Works or any part thereof has expired and the Contractor has fulfilled all his obligations under the Contract for defects in the Works or that part, the Engineer shall issue within twenty eight (28) days to the Employer and the Contractor a Defects Liability Certificate to that effect.

### **30.12 Exclusive Remedies**

Except in the case of Gross Misconduct, the Employer's remedies under this Clause shall be in place of and to the exclusion of any other remedy in relation to defects whatsoever.

## **Variations**

### **31.1 Engineer's Right to Vary**

The Engineer may by Variation Order to the Contractor at any time before the Works are taken over, instruct the Contractor to alter, amend, omit, add to or otherwise vary any part of the Works.

The Contractor shall not vary or alter any of the Works, except in accordance with a Variation Order from the Engineer. The Contractor may, however, at any time propose variations of the Works to the Engineer.

### **31.2 Variation Order Procedure**

Prior to any Variation Order under Sub-Clause 31.1 the Engineer shall notify the Contractor of the nature and form of such variation.

As soon as possible after having received such notice, the Contractor shall submit to the Engineer:

- (a) a description of work, if any, to be performed and a programme for its execution, and

- (b) the Contractor's proposals for any necessary modifications to the Programme according to Sub-Clause 26.1 or to any of the Contractor's obligations under the Contract, and
- (c) the Contractor's proposals for adjustment to the Contract Price.

Following the receipt of the Contractor's submission the Engineer shall, after due consultation with the Employer and the Contractor, decide as soon as possible whether or not the variation shall be carried out.

If the Engineer decides that the variation shall be carried out, he shall issue a Variation Order clearly identified as such in accordance with the Contractor's submission or as modified by agreement. If the Engineer and the Contractor are unable to agree the adjustment of the Contract Price, the provisions of Sub-Clause 31.3 shall apply.

### **31.3 Disagreement on Adjustment of the Contract Price**

If the Contractor and the Engineer are unable to agree on the adjustment of the Contract Price, the adjustment shall be determined in accordance with the rates specified in the Schedule of Prices.

If the rates contained in the Schedule of Price are not directly applicable to the specific work in question, suitable rates shall be established by the Engineer reflecting the level of pricing in the Schedule of Prices.

Where rates are not contained in the said Schedule, the amount shall be such as is in all the circumstances reasonable. Due account shall be taken of any over-or under-recovery of overheads by the Contractor in consequence of the variation.

The Contractor shall also be entitled to be paid:

- (a) the cost of any partial execution of the Works rendered useless by any such variation,
- (b) the cost of making necessary alterations to Plant already manufactured or in the course of manufacture or of any work done that has to be altered in consequence of such a variation,
- (c) any additional costs incurred by the Contractor by the disruption of the progress of the Works as detailed in the Programme, and
- (d) the net effect of the Contractor's finance costs, including interest, caused by the variation.

The Engineer shall on this basis determine the rates or prices to enable on-account payment to be included in certificates of payment.

### **31.4 Contractor to Proceed**

On receipt of a Variation Order, the Contractor shall forthwith proceed to carry out the variation and be bound to these Conditions in so doing as if such variation was stated in the Contract.

The work shall not be delayed pending the granting of an extension of the Time for Completion or an adjustment to the Contract Price under Sub-Clause 31.3.

### **31.5 Records of Costs**

In any case where the Contractor is instructed to proceed with variation prior to the determination of the adjustment to the Contract Price in respect thereof the Contractor shall keep records of the cost of undertaking the variation and of time expended thereon. Such records shall be open to inspection by the Engineer at all reasonable times.

## **Ownership of Plant**

### **32.1 Ownership of Plant**

Plant to be supplied pursuant to the Contract shall become the property of the Employer at whichever is the earlier of the following times:

- (a) when Plant is delivered to Site, or
- (b) when by virtue of Sub-Clause 24.2 the Contractor becomes entitled to payment of the value of the Plant.

## **Certificates and Payment**

### **33.1 Terms of Payment**

The terms of payment shall be as stated in the Preamble.

### **33.2 Method of Application**

Unless otherwise specified in Part II applications by the Contractor for payment shall be made to the Engineer as follows:

- (a) in respect of the progress of the Works accompanied by such evidence of the value of the work done as the Engineer may require, and
- (b) in respect of Plant shipped and en route to the Site identifying the Plant concerned and accompanied by such evidence of shipment and of payment of freight and insurance and by such other documents as the Engineer may require, and
- (c) for additional payment in accordance with Clause 34.

Any other application for payment shall state the amounts claimed and the detailed particulars in respect of which the application is made.

### **33.3 Issue of Certificate of Payment**

Within fourteen (14) days after receiving an application for payment which the Contractor was entitled to make the Engineer shall issue a Certificate of Payment to the Employer showing the amount due, with a copy to the Contractor.

A certificate of payment, other than the Final Certificate of Payment, shall not be withheld on account of:

- (a) defects of a minor character which are not such as to affect the use of the Works, or
- (b) any part of the payment applied for being disputed. In such case a certificate of payment for the undisputed amount shall be issued.

### **33.4 Corrections to Certificates of Payment**

The Engineer may in any certificate of payment make any correction or modification that should properly be made in respect of any previous certificate.

### **33.5 Payment**

Unless otherwise specified in Part II, the Employer shall pay the amount certified within twenty eight (28) days from the date of issue of each certificate of payment to the Contractor at his principal place of business.

### **33.6 Delayed Payment**

If payment of any sum payable under Sub-Clause 33.5 is delayed, the Contractor shall be entitled to receive interest on the amount unpaid during the period of delay. Unless otherwise stated in Part II the interest shall be at the annual rate three percentage points above the discount rate of the central bank in the Contractor's country. The Contractor shall be entitled to such payment without formal notice and without prejudice to any other right or remedy.

### **33.7 Remedies on Failure to Certify or Make Payment**

The Contractor shall be entitled to stop the Works by giving fourteen (14) days notice to the Engineer and the Employer, if either:

- (a) the Engineer fails to issue a certificate of payment upon proper application by the Contractor, or
- (b) the Employer fails to make any payment as provided in this Clause.

The cost to the Contractor together with profit occasioned by the stoppage and the subsequent resumption of work, shall be added to the Contract Price.

The Contractor shall also be entitled to terminate the Contract by giving twenty eight (28) days notice to the Engineer and the Employer in any case where the Engineer has failed to issue a certificate of payment upon proper application by the Contractor.

### **33.8 Payment by Measurement**

For any part of the Works which is to be paid according to quantity supplied or work done, the provisions for measurement shall be stated in Part II.

### **33.9 Application for Final Certificate of Payment**

The Contractor shall make application to the Engineer for the Final Certificate of Payment within twenty eight (28) days after the issue of the Defect Liability Certificate, or if more than one, the last Defect Liability Certificate.

The application for the Final Certificate of Payment shall be accompanied by a final account prepared by the Contractor. The final account shall give full details of the value of all Plant supplied and work done under the Contract together with:

- (a) such additions to or deductions from the Contract Price as have been agreed, and
- (b) all claims for additional payment to which the Contractor may consider himself entitled.

### **33.10 Issue of Final Certificate of Payment**

The Engineer shall issue to the Employer with a copy to the Contractor, the Final Certificate of Payment within 28 days after receiving an application in accordance with Sub-Clause 33.9.

If the Contractor has not applied for a Final Certificate of Payment within the time specified in Sub-Clause 33.9 the Engineer shall request the Contractor to do so within a further period of 28 days. If the Contractor fails to make such an application, the Engineer shall issue the Final Certificate of Payment for such amount as he deems correct.

### **33.11 Final Certificate of Payment Conclusive**

A Final Certificate of Payment shall be conclusive evidence of the value of the Works, that the Works are in accordance with the Contract and that the Contractor has performed all his obligations under the Contract.

Payment of the amount certified in the Final Certificate of Payment shall be conclusive evidence that the Employer has performed all his obligations under the Contract.

A Final Certificate of Payment or payment shall not be conclusive:

- (a) to the extent that fraud or dishonesty relates to or affects any matter dealt with in the certificate, or
- (b) if any arbitration or court proceedings under the Contract have been commenced by either party before the expiry of 84 days after the issue of the Final Certificate of Payment.

## **Claims**

### **34.1 Procedure**

In any case where under these Conditions there are circumstances which the Contractor considers entitle him to claim additional payment, the Contractor shall:

- (a) if he intends to make any claim for additional payment give to the Engineer notice of his intention to make such claim within twenty eight (28) days after the said circumstances became known to the Contractor stating the reasons for his claim, and
- (b) as soon as reasonably practical after the date of such notice submit to the Engineer full and detailed particulars of his claim but not later than one hundred and eighty two (182) days after such notice unless otherwise agreed by the Engineer. In any event such particulars shall be submitted no later than the application for the Final Certificate of Payment. The Contractor shall thereafter promptly submit such further particulars as the Engineer may reasonably require to assess the validity of the claim.

### **34.2 Assessment**

When the Engineer has received full and detailed particulars of the Contractor's claim in accordance with Sub-Clause 34.1 and such further particulars as he may reasonably have required he shall after due consultation with the Employer and the Contractor determine whether the Contractor is entitled to additional payment and notify the parties accordingly.

The Engineer may reject any claim for additional payment which does not comply with the requirements of Sub-Clause 34.1.

## **Foreign Currency and Rates of Exchange**

### **35.1 Payment in Foreign Currencies**

Arrangements for payment in foreign currencies shall be as stated in the Preamble.

### **35.2 Currency Restrictions**

The Employer shall reimburse the Contractor for any loss arising from:

- (a) currency restrictions, and
- (b) restrictions on the transfer of currency in which the Contractor is to be paid which are imposed by the government or authorized agency of the government of the country from which any payments under the Contract are to be made.

This Sub-Clause only applies to restrictions imposed after the date 28 days prior to the latest date for submission of tenders for the Works.

### **35.3 Rates of Exchange**

Where the Contract provides for payment in Foreign Currency the rates of exchange between the currencies shall be fixed for the purpose of the Contract and shall be as stated in the Preamble.

If such rates of exchange are not stated in the Preamble the rates to be used shall be those quoted by the central bank of the country whose currency is to be sold 28 days or the nearest day thereto prior to the latest date for submission of tenders for the Works.

## **Provisional Sums**

### **36.1 Use of Provisional Sums**

A Provisional Sum shall only be used, in whole or in part in accordance with the Engineer's instructions.

The total sum paid to the Contractor shall include only such amounts in respect of work, supplies or services to which such Provisional Sums relate as the Engineer shall have instructed.

### **36.2 Ordering Work against Provisional Sums**

In respect of every Provisional Sum the Engineer may after due consultation with the Employer and the Contractor order:

- (a) work to be executed, including goods, materials or services to be supplied by the Contractor. The value of such work executed, determined in accordance with Clause 31, shall be paid to the Contractor in accordance with Clause 33, and
- (b) goods and materials to be purchased by the Contractor, for which payment will be made in accordance with Sub-Clause 36.4.

### **36.3 Invoices and Receipts**

The Contractor shall, when required by the Engineer, produce quotations, invoices, vouchers and accounts or receipts in connection with expenditure in respect of Provisional Sums.

#### **36.4 Payment against Provisional Sums**

For all work executed or goods, materials or services supplied or purchased by the Contractor under Sub-Clause 36.2(b), there shall be included in the sums paid to the Contractor:

- (a) the actual price paid or due to be paid by the Contractor, and
- (b) in respect of all other charges and profit, a percentage of the actual price paid or due to be paid. Such percentage shall be as stated in the Preamble.

### **Risk and Responsibility**

#### **37.1 Allocation of Risk and Responsibility**

The Risks of loss of or damage to physical property and of death and personal injury which arise in consequence of the performance of the Contract shall be allocated between the Employer and the Contractor as follows:

- (a) the Employer: the Employer's Risks as specified in Sub-Clause 37.2
- (b) the Contractor: the Contractor's Risks as specified in Sub-Clause 37.3.

#### **37.2 Employer's Risks**

The Employer's Risks are:

- (a) war and hostilities (whether war be declared or not), invasion, act of foreign enemies,
- (b) rebellion, revolution, insurrection, military or usurped power or civil war insofar as it relates to the country in which the Works are located or countries through which plant must be transported,
- (c) ionising radiation or contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosives or other hazardous properties of any explosive nuclear assembly or nuclear components thereof,
- (d) pressure waves caused by aircraft travelling at sonic or supersonic speed,
- (e) riot, commotion or disorder, unless solely restricted to the employees of the Contractor or of his Subcontractors,
- (f) use or occupation of the Works or any part thereof by the Employer,
- (g) fault, error, defect or omission in the design of any part of the Works by the Engineer, Employer or those for whom the Employer is responsible,
- (h) the use or occupation of the Site by the Works or any part thereof, or for the purposes of the Contract; or interference, whether temporary or permanent with any right of way, light, air or water or with any easement, wayleaves or right of a similar nature which is the inevitable result of the construction of the Works in accordance with

the Contract,

- (i) the right of the Employer to construct the Works or any part thereof on, over, under, in or through any land,
- (j) damage (other than that resulting from the Contractor's method of construction) which is the inevitable result of the construction of the Works in accordance with the Contract,
- (k) the act, neglect or omission or breach of contract or of statutory duty of the Engineer, the Employer or other contractors engaged by the Employer or of their respective employees or agents,

and all risks which an experienced contractor could not have foreseen or, if foreseeable, against which measures to prevent loss, damage or injury from occurring could not reasonably have been taken by such contractor.

### **37.3 Contractor's Risks**

The Contractor's Risks are all risks other than those identified as the Employer's Risks.

### **Care of the Works and Passing of Risk**

#### **38.1 Contractor's Responsibility for the Care of the Works**

The Contractor shall be responsible for the care of the Works or any Section thereof from the Commencement until the Risk Transfer Date applicable thereto under Sub-Clause 38.2.

The Contractor shall also be responsible for the care of any part of the Works upon which any outstanding work is being performed by the Contractor during the Defects Liability Period until completion of such outstanding work.

#### **38.2 Risk Transfer Date**

The Risk Transfer Date in relation to the Works or a Section thereof is the earliest of either:

- (a) the date of issue of the Taking-Over Certificate, or
- (b) the date when the Engineer is deemed to have issued the Taking Certificate or the Works are deemed to have been taken over in accordance with Clause 29, or
- (c) the date of expiry of the notice of termination when the Contract is terminated by the Employer or the Contractor in accordance with these Conditions.

#### **39.1 Passing of Risk of Loss of or Damage to the Works**

The risk of loss of or damage to the Works or any Section thereof shall pass from the Contractor to the Employer on the Risk Transfer Date applicable thereto.

#### **39.2 Loss or Damage Before Risk Transfer Date**

Loss of or damage to the Works or any Section thereof occurring before the Risk Transfer Date shall:

- (a) to the extent caused by any of the Contractor's Risks, be made good forthwith by the Contractor at his own cost, and

- (b) to the extent caused by any of the Employer's Risks, be made good by the Contractor at the Employer's expense if so required by the Engineer within twenty eight (28) days after the occurrence of the loss or damage. The price for making good such loss and damage shall be in all circumstances reasonable and shall be agreed by the Employer and the Contractor, or in the absence of agreement, shall be fixed by arbitration under Clause 50.

### **39.3 Loss or Damage After Risk Transfer Date**

After the Risk Transfer Date, the Contractor's liability in respect of loss of or damage to any part of the Works shall, except in the case of Gross Misconduct, be limited:

- (a) to the fulfillment of the Contractor's obligations under Clause 30 in respect of defects therein, and
- (b) to making good forthwith loss or damage caused by the Contractor during the Defects Liability Period.

## **Damage to Property and Injury to Persons**

### **40.1 Contractor's Liability**

Except as provided under Sub-Clause 41.1, the Contractor shall be liable for and shall indemnify the Employer against all losses, expenses and claims in respect of any loss of or damage to physical property (other than the Works), death or personal injury occurring before the issue of the last Defects Liability Certificate to the extent caused by:

- (a) defective design, material or workmanship of the Contractor, or
- (b) negligence or breach of statutory duty of the Contractor, his Subcontractors or their respective employees and agents.

### **40.2 Employer's Liability**

The Employer shall be liable for and shall indemnify the Contractor against all losses, expenses or claims in respect of loss of or damage to any physical property or of death or personal injury whenever occurring, to the extent caused by any of the Employer's Risks.

### **41.1 Accidents**

The Contractor shall be liable for and shall indemnify the Employer against all losses, expenses or claims arising in connection with the death of or injury to any person employed by the Contractor or his Subcontractors for the purposes of the Works, unless caused by any acts or defaults of the Engineer, the Employer, or other contractors engaged by the Employer or by their respective employees or agents. In the latter cases the Employer shall be liable for and shall indemnify the Contractor against all losses, expenses and claims arising in connection therewith.

## **Limitations of Liability**

### **42.1 Liability for Indirect or Consequential Damage**

Neither party shall be liable to the other for any loss of profit, loss of use, loss of production, loss of contracts or for any other indirect or consequential damage that may be suffered by the other, except:

- (a) as expressly provided in Clause 27, and
- (b) those provisions of these Conditions whereby the Contractor is expressly entitled to receive profit.

#### **42.2 Maximum Liability**

The liability of the Contractor to the Employer under these Conditions shall in no case exceed the sum stated in the Preamble or, if no such sum is stated, the Contract Price.

#### **42.3 Liability after Expiration of Defects Liability Period**

The Contractor shall have no liability to the Employer for any loss of or damage to the Employer's physical property which occurs after the expiration of the Defects Liability Period unless caused by Gross Misconduct of the Contractor.

#### **42.4 Exclusive Remedies**

The Employer and the Contractor intend that their respective rights, obligations and liabilities as provided for in these Conditions shall alone govern their rights under the Contract and in relation to the Works.

Accordingly, the remedies provided under the contract in respect of or in consequence of:

- (a) any breach of contract, or
- (b) any negligent act or omission, or
- (c) death or personal injury, or
- (d) loss or damage to any property

are, save in the case of Gross Misconduct, to be to the exclusion of any other remedy that either may have against the other under the law governing the Contract or otherwise.

#### **42.5 Mitigation of Loss of Damage**

In all cases the party claiming a breach of Contract or a right to be indemnified in accordance with the Contract shall be obliged to take all reasonable measures to mitigate loss or damage which has occurred or may occur.

#### **42.6 Foreseen Damage**

Where either the Employer or the Contractor is liable in damages to the other these shall not exceed the damage which the party in default could reasonably have foreseen at the date of the Contract.

### **Insurance**

#### **43.1 The Works**

The Contractor shall insure the Works in the joint names of the Contractor and the Employer to their full replacement value with deductible limits not exceeding those stated in the Preamble.

- (a) from the Commencement Date until the Risk Transfer Date against any loss or

damage caused by any of the Contractor's Risks and any other risks specified in the Preamble, and

- (b) during the Defects Liability period against any loss or damage which is caused either:
  - (i) by the Contractor in completing any outstanding work or complying with his obligations under Clause 30, or
  - (ii) by any of the Contractor's Risks which occurred prior to the Risks Transfer Date.

#### **43.2 Contractor's Equipment**

The Contractor shall insure Contractor's Equipment for its full replacement value whilst in transit to the Site, from commencement of loading until completion of unloading at the Site and while on the Site against all loss or damage caused by any of the Contractor's Risks.

#### **43.3 Third Party Liability**

The Contractor shall insure against liability to third parties for any death or personal injury and loss of or damage to any physical property arising out of the performance of the Contract and occurring before the issue of the last Defects Liability Certificate.

Such insurance shall be effected before the Contractor begins any work on the Site. The insurance shall be for not less than the amount specified in the Preamble.

#### **43.4 Employees**

The Contractor shall insure and maintain insurance against his liability under Sub-Clause 41.1.

#### **43.5 General Requirements of Insurance Policies**

The Contractor shall:

- (a) whenever required by the Employer produce the policies or certificates of any insurance which he is required to effect under the Contract together with receipts for the premiums,
- (b) effect all insurances for which he is responsible with an insurer and in terms approved by the Employer,
- (c) make no material alterations to the terms of any insurance without the Employer's approval. If an insurer makes any material alteration to the terms the Contractor shall forthwith notify the Employer, and
- (d) in all respect comply with any conditions stipulated in the insurance policies which he is required to place under the Contract.

#### **43.6 Permitted Exclusions from Insurance Policies**

The insurance cover affected by the Contractor may exclude any of the following:

- (a) the cost of making good any part of the Works which is defective or otherwise does not comply with the Contract provided that it does not exclude the cost of making

good any loss or damage to any other part of the Works attributable to such defect or non-compliance,

- (b) indirect or consequential loss of damage including any reductions in the Contract Price for delay,
- (c) wear and tear, shortages and theft, or
- (d) risks relating to vehicles for which third party or other insurance is required by law.

#### **43.7 Remedies on the Contractor's Failure to Insure**

If the Contractor fails to produce evidence of insurance cover as stated in Sub-Clause 43.5 (a) then the Employer may effect and keep in force such insurance. Premiums paid by the Employer for this purpose shall be deducted from the Contract Price.

#### **43.8 Amounts not Recovered**

Any amounts not recovered from the insurers shall be borne by the Employer or Contractor in accordance with their responsibilities under Clause 37.

### **Force Majeure**

#### **44.1 Definition of Force Majeure**

Force Majeure means any circumstances beyond the control of the parties, including but not limited to:

- (a) war and other hostilities, (whether war be declared or not), invasion, act of foreign enemies, mobilization, requisition or embargo,
- (b) ionizing radiation or contamination by radio-activity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosives, or other hazardous properties of any explosive nuclear assembly or nuclear components thereof,
- (c) rebellion, revolution, insurrection, military or usurped power and civil war,
- (d) riot, commotion or disorder, except where solely restricted to employees of the Contractor.

#### **44.2 Effect of Force Majeure**

Neither party shall be considered to be in default or in breach of his obligations under the Contract to the extent that performance of such obligations is prevented by any circumstances of Force Majeure which arise after the date of the Letter of Acceptance or the date when the Contract becomes effective, whichever is the earlier.

#### **44.3 Notice of Occurrence**

If either party considers that any circumstances of Force Majeure have occurred which may affect performance of his obligations he shall promptly notify the other party and the Engineer thereof.

#### **44.4 Performance to Continue**

Upon the occurrence of any circumstances of Force Majeure the Contractor shall endeavour to continue to perform his obligations under the Contract so far as reasonably practicable. The Contractor shall notify the Engineer of the steps he proposes to take including any reasonable alternative means for performance which is not prevented by Force Majeure. The Contractor shall not take any such steps unless directed so to do by the Engineer.

**44.5 Additional Costs caused by Force Majeure**

If the Contractor incurs additional costs in complying with the Engineer's directions under Sub-Clause 44.4, the amount thereof shall be certified by the Engineer and added to the Contract Price.

**44.6 Damage Caused by Force Majeure**

If in consequence of Force Majeure the Works shall suffer loss or damage the Contractor shall be entitled to have the value of the work done, without regard to the loss or damage that has occurred, included in a Certificate of Payment.

**44.7 Termination in Consequence of Force Majeure**

If circumstances of Force Majeure have occurred and shall continue for a period of one hundred and eighty two (182) days then, notwithstanding that the Contractor may by reason thereof have been granted an extension of Time for Completion of the Works, either party shall be entitled to serve upon the other twenty eight (28) days' notice to terminate the Contract. If at the expiry of the period of twenty eight (28) days Force Majeure shall still continue the Contract shall terminate.

**44.8 Payment on Termination for Force Majeure**

If the Contract is terminated under Sub-Clause 44.7 the Contractor shall be paid the value of the work done.

The contractor shall also be entitled to receive:

- (a) the amounts payable in respect of any preliminary items so far as the work or service comprised therein has been carried out and a proper proportion of any such item in which the work or service comprised has only been partially carried out,
- (b) the cost of materials or goods ordered for the Works or for use in connection with the Works which have been delivered to the Contractor or of which the Contractor is legally liable to accept delivery. Such materials or goods shall become the property of and be at the risk of the Employer when paid for by the Employer and the Contractor shall place the same at the Employer's disposal,
- (c) the amount of any other expenditure which in the circumstances was reasonably incurred by the Contractor in the expectation of completing the whole of the Works,
- (d) the reasonable cost of removal of Contractor's Equipment from the Site and the return thereof to the Contractor's works in his country or to any other destination at no greater cost, and
- (e) the reasonable cost of repatriation of the Contractor's staff and workmen employed wholly in connection with the Works at the date of such termination.

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**44.9 Release from Performance**

If circumstances of Force Majeure occur and in consequence thereof under the law governing the Contract the parties are released from further performance of the Contract, the sum payable by the Employer to the Contractor shall be the same as that which would have been payable under Sub-Clause 44.8 if the Contract had been terminated under Sub-Clause 44.7.

**44.10 Force Majeure Affecting Engineer's Duties**

The provisions of Clause 44 shall also apply in circumstances where the Engineer is prevented from performing any of his duties under the Contract by reason of Force Majeure.

**Default**

**45.1 Notice of Default**

If the Contractor is not executing the Works in accordance with the Contract or is neglecting to perform his obligations thereunder so as seriously to affect the carrying out of the Works, the Engineer may give notice to the Contractor requiring him to make good such failure or neglect.

**45.2 Contractor's Default**

If the Contractor:

- (a) has failed to comply within a reasonable time with a notice under Sub-Clause 45.1, or
- (b) assigns the Contract or subcontracts the whole of the Works without the Employer's written consent, or
- (c) becomes bankrupt or insolvent, has a receiving order made against him or compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors or goes into liquidation.

The Employer may, after having given seven (7) days notice to the Contractor, terminate the Contract and expel the Contractor from the Site.

Any such expulsion and termination shall be without prejudice to any other rights or powers of the Employer, the Engineer or the Contractor under the Contract.

The Employer may upon such termination complete the Works himself or by any other contractor.

**45.3 Valuation at Date of Termination**

The Engineer shall, as soon as possible after such termination, certify the value of the Works and all sums then due to the Contractor as at the date of termination in accordance with Clause 33.

**45.4 Payment after Termination**

The Employer shall not be liable to make any further payments to the Contractor until the Works have been completed. When the Works are so complete, the Employers shall be

entitled to recover from the Contractor the extra costs, if any, of completing the Works after allowing for any sum due to the Contractor under Sub-Clause 45.3. If there is no such extra cost the Employer shall pay any balance due to the Contractor.

#### **45.5 Effect on Liability for Delay**

The Contractor's liability under Clause 27 shall immediately cease when the Employer expels him from the Site without prejudice to any liability thereunder that may have already occurred.

#### **46.1 Employer's Default**

The Contractor may, by giving fourteen (14) days notice to the Employer and the Engineer, terminate the Contract if the Employer:

- (a) fails to pay the Contractor the amount due under any certificate of the Engineer within twenty eight (28) days after the amount became payable, or
- (b) interferes with or obstructs the issue of any certificate of the Engineer, or
- (c) becomes bankrupt or insolvent, has a receiving order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors or goes into liquidation, or goes into liquidation, or
- (d) consistently fails to meet his contractual obligations, or
- (e) appoints, a person to act with or in replacement of the Engineer without the Contractor's consent.

Any such termination shall be without prejudice to any other rights of the Contractor under the Contract.

#### **46.2 Removal of Contractor's Equipment**

On such termination, the Contractor shall be entitled to remove immediately all Contractor's Equipment which is on the Site.

#### **46.3 Payment on Termination for Employer's Default**

In the event of such termination the Employer shall pay the Contractor an amount calculated in accordance with Sub-Clause 44.8.

The Employer shall pay in addition the amount of any loss or damage, including loss of profit which the Contractor may have suffered in consequence of termination. The additional amount shall, however, not exceed the limit specified in the Preamble.

### **Change in Cost and Legislation**

#### **47.1 Labour, Materials and Transport**

Where the Contract Price is to be adjusted for changes in the cost of labour, materials, transport or other costs of execution of the Works, the method for calculating such adjustment shall be specified in the Preamble.

When calculating the adjustment no account shall be taken of any increased cost which results from the Contractor's default or negligence.

## **47.2 Statutory and Other Regulations**

The Contract Price shall be adjusted to take account of any increase or decrease in cost resulting from changes in legislation of the country where the Site is located or in its generally accepted interpretation.

Legislation means any law, order, regulation or bye-law having the force of law, which affects the Contractor in the performance of his obligations under the Contract, made after the date 28 days prior to the latest date for submission of tenders for the Works.

The Engineer shall certify the amount of the resulting increase or decrease in cost, which shall be added to or deducted from the Contract Price.

## **Customs**

### **48.1 Customs and Import Duties**

Unless otherwise stated in Part II the Employer shall pay all customs, import duties and taxes in consequence of the importation of Plant. If the Contractor is required to pay such customs, import duties and taxes, the Employer shall reimburse the amount thereof.

### **48.2 Clearance through Customs**

The Employer shall assist the Contractor in obtaining clearance through the customs of all Plant and Contractor's Equipment and in procuring any necessary government consent to the re-export of Contractor's Equipment when it is removed from the Site.

## **Notices**

### **49.1 Notices to Contractor**

All certificates, notices or written orders to be given to the Contractor by the Employer or the Engineer under these Conditions shall be sent by airmail post, cable, telex or facsimile transmission to or left at the Contractor's principal place of business or such other address as the Contractor shall nominate for that purpose, or may be handed over to the Contractor's representative.

### **49.2 Notice to Employer and Engineer**

Any notice to be given to the Employer or to the Engineer under these Conditions shall be sent by airmail post, cable, telex or facsimile transmission to or left at the respective addresses nominated for that purpose in the Preamble, or handed over to the Engineer's or the Employer's representative authorised to receive it.

### **49.3 Minutes of Meetings**

Instructions or notices to the Contractor and notices from the Contractor to the Engineer or the Employer recorded in a minute or protocol signed by the authorized representatives of the giver and recipient of such notice or instruction shall be valid notice or instruction for the purposes of the Contract.

## **Disputes and Arbitration**

### **50.1 Disputes concerning Engineer's Decisions**

If either party is dissatisfied with a decision or instruction of the Engineer as confirmed, reversed or varied in accordance with Clause 2 he may refer the matter to arbitration pursuant to Sub-Clause 50.2.

Unless the dissatisfied party has notified the other party and the Engineer within fifty six

(56) days of such decision or instruction of his intention to refer the matter to arbitration, he shall be deemed to have accepted the decision as final.

Reference to arbitration shall not relieve the Contractor of his obligation to proceed with the Works in accordance with the Engineer's decision or instruction, nor relieve the Employer of any of his obligations under the Contract.

The Contractor shall in any such arbitration be at liberty to rely on reasons additional to the reasons stated in the notice given under Sub-Clause 2.7.

## **50.2 Arbitration**

If at any time any question, dispute or difference shall arise between the Employer and the Contractor in connection with or arising out of the Contract or the carrying out of the Works either party shall be entitled to refer the matter to be finally settled by arbitration in accordance with the Rules of Conciliation and Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with those Rules, or by arbitration in accordance with such other rules as are specified in Part II.

The Arbitrators(s) shall have full power to open up, review and revise:

- (a) any decision or instruction of the Engineer referred to arbitration pursuant to Sub-Clause 50.1, and
- (b) any certificate of the Engineer related to the dispute.

## **50.3 Works to Continue**

Performance of the Contract shall continue during arbitration proceedings unless the Employer shall order suspension. If any such suspension is ordered the reasonable costs incurred by the Contractor and occasioned thereby shall be added to the Contract Price.

No payments due or payable by the Employer shall be withheld on account of pending reference to arbitration.

## **50.4 Time Limit for Arbitration**

Formal notice of arbitration must be given to the other party, and where required to the appropriate arbitration body, no later than eighty four (84) days after the issue of the Final Certificate of Payment

## **Law and Procedure**

### **51.1 Applicable Law**

The law which is to apply to the Contract and under which the Contract is to be construed is stated in the Preamble.

### **51.2 Procedural Law**

The law governing the procedure and administration of any arbitration instituted pursuant to Clause 50 is stated in the Preamble.

### **51.3 Language**

The language and place of the arbitration are stated in the Preamble.

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## **Particular Conditions of Contract (PCC)**

### **1.1 Definitions**

The text of Sub-Clause 1.1.1 is deleted and substituted by the following:

“Commencement Date” means the date specified in the Preamble to Conditions of Contract.

The text of Sub-Clause 1.1.2 is deleted and substituted by the following:

“Conditions” means the Preamble to Conditions of Contract, General Conditions of Contract (GCC) and Particular Conditions of Contract (PCC).

### **Sub-Clause 1.1.3**

At the end of Sub-Clause, the following is added:

“Any subsequent document mutually agreed and signed by the Employer and the Contractor, shall be the part of the Contract.”

### **Sub-Clause 1.1.5**

The text of Sub-Clause 1.1.5 is deleted and substituted by the following:

“Contract Price” means the sum stated in the Letter of Acceptance as payable to the Contractor for the design, execution and completion of the Works subject to such additions thereto or deductions therefrom as may be made under the provisions hereinafter contained and remedying of any defects therein in accordance with the provisions of the Contract”.

### **Sub-Clause 1.1.11**

The Defects Liability Period is the period mentioned in the Preamble to Conditions of Contract.

### **Sub-Clause 1.1.15**

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

“or any other competent person appointed by the Employer as his replacement.

### **Sub-Clause 1.1.23**

The following paragraph is added:

The word ‘Good’ is synonymous with the word “Plant”.

### **Sub-Clause 1.1.27**

The text of Sub-Clause 1.1.27 is deleted and substituted by the following:

“Schedule of Prices” means the completed and priced Schedule of Prices, or any part or individual schedule thereof, submitted by the Contractor with his Bid or revised and mutually agreed and forming a part of the Contract Documents.

**Add the following at the end of Sub-Clause 1.1.33:**

The word “Tender” is synonymous with the word “Bid” and the word ‘Tender Documents’ with “Bidding Documents” including technical bid is also part of it.

The following Sub-Clauses are added:

**Sub Clause 1.1.38**

“**Month**” means calendar month according to Gregorian calendar.

**Sub Clause 1.1.39**

“**Operation and Maintenance Manuals**” has the meaning described in Sub-Clause 6.6.”

**Sub Clause 1.1.40**

“**Warranty Certificate**” means the certificate against specified goods/equipment, for the period mentioned in the Preamble to Conditions of Contract, to be issued by the Contractor that the goods/equipment supplied under the Contract are new, unused and incorporate all recent improvements in design and materials unless provided otherwise in the Contract and that the Contractor will be responsible for making good or replacing any defective goods/equipment during the Warranty Period specified in the Preamble to Conditions of Contract which should commence after expiry of Defect Liability Period.

**Sub-Clause 1.1.41**

The word ‘Part II’ stated in FIDIC Conditions of Contract is synonymous with the words “Particular Conditions of Contract”.

**Sub-Clause 1.6 Costs, Overhead Charges and Profit**

The last sentence “Any profit \_\_\_\_\_ stated in the Preamble” is deleted and substituted by the following:

“Any profit entitlement shall be added to cost at the percentage stated in the Bid and agreed in the Contract Agreement.”

**Sub-Clause 2.1 Engineer’s Duties**

The text of Sub-Clause 2.1 is deleted and substituted by the following:

“The Engineer shall carry out the duties specified in the Contract.

The Engineer may exercise the authority attributable to the Engineer as specified in or necessarily to be implied from the Contract. The Engineer is required to obtain the specific approval of the Employer before carrying out his duties in accordance with the following Clauses of General Conditions of Contract (GCC):

- a) approval of Subcontractor/manufacturer under Sub-Clause 4.1,
- b) certifying additional sums under Sub-Clause 5.4,
- c) certifying additional costs under Sub-Clauses 11.3 & 12.3,
- d) certifying any cost under Sub-Clause 14.6,
- e) approval of extension of time under Clause 26,

- f) issuing a Taking–Over Certificate under Sub-Clause 29,
- g) issuing a Defects Liability Certificate under Sub-Clause 30.11,
- h) issuing a Variation Order under Clause 31,
- i) fixing rates or prices under Clauses 31 and 34,
- j) certifying additional costs under Sub-Clause 44.5 and
- k) certifying additional costs under Sub-Clause 47.2.

Except for such variations pursuant to Sub-Clause 31.1 of the GCC which may be necessary in an emergency affecting safety of life, the Works or of adjoining property.

Except as expressly stated in the Contract, the Engineer shall have no authority to relieve the Contractor of any of his obligations under the Contract.”

#### **Sub-Clause 2.6 Confirmation in Writing**

- (i) In line 3 after the words “undue delay” the following is added:

“but not after the number of days mentioned in the Preamble to Conditions of Contract from the instruction or decision”.

- (ii) At the end of Sub-Clause 2.6, the following is added:

“The Engineer shall confirm or otherwise within the period mentioned in the Preamble to Conditions of Contract from the receipt of requirement(s) from the Contractor”.

#### **Sub-Clause 2.8 Replacement of Engineer**

The text of Sub-Clause 2.8 is deleted in its entirety and substituted by the following:

“If the Employer intends to replace the Engineer, the Employer shall, not less than fourteen (14) days before the intended date of replacement, give notice to the Contractor, of the name, address and relevant experience of the intended replacement of 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.”

#### **Sub-Clause 2.9 Engineer Not Liable**

Sub-Clause 2.9 is added as follows:

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 remaining materials and equipment for the Works and parts thereof and complete the remaining erection works and testing and commissioning in accordance with the Contract and neither the Engineer authority to act nor any decision made by him in good faith as provided for under this Contract whether to exercise or not to exercise such authority shall give rise to any duty or responsibility of the Project Manager / Engineer to the Contractor, any Subcontractor, any of their representatives or employees or any other person performing any of the Works. However, the Contractor shall be compensated if any loss/damage is occurred due to the decision of the Engineer”

#### **Sub-Clause 4.2 No Contractual Relation between Subcontractor and the Employer**

Sub-Clause 4.2 is added as follows:

Nothing contained in the Contract Documents shall create any contractual relation between any Subcontractor and the Employer.”

### **Sub-Clause 5.3 Priority of Contract Documents**

The text of Sub-Clause 5.3 is deleted and substituted by the following:

“Unless otherwise provided in the Contract, the priority of the Contract Documents shall be as follows:

1. The Contract Agreement (if completed)
2. The Letter of Acceptance
3. The completed Form of Bids
4. Preamble to Conditions of Contract
5. The Particular Conditions of Contract
6. The General Conditions of Contract
7. The priced Schedule of Prices
8. The completed Schedules to Bid
9. The Specifications (General and Technical Provision)
10. The Drawings
11. Any other document forming part of the Contract.

In case of discrepancies between drawings, those of larger scale shall govern unless they are superseded by drawing(s) of a later date regardless of scale. All drawings and specifications shall be interpreted in conformity with the Contract Agreement and these conditions.”

### **Sub-Clause 5.4 Documents Mutually Explanatory**

The text appearing in the last line after the words “the Contract Price” is deleted:

### **Sub-Clause 6.2 Consequences of Disapproval of Contractor's Drawings**

Full stop in the last line is deleted and the following words are added at the end of the Sub- Clause:

“for the approval of the Project Manager / Engineer. However, the Contractor shall not be entitled for time extension on this account”.

### **Sub-Clause 6.6. Operation and Maintenance Manuals**

Paras 2 & 3 are deleted and the following text is added at the end of Para 1 of Sub-Clause:

“The Operation and Maintenance Manuals shall include full instructions for the operation, servicing and maintenance of the Plant, not only during the period of the Contractor's liability but more particularly during its operating life.

The directions shall be set out simply, clearly and systematically. This may be divided into two volumes if desirable, one for operation and the second for servicing and maintenance (in sub-volumes for major items of Plant).

The operational data shall include a complete physical and functional description of the Plant (in sub-volumes for major items of Plant) and step-by-step procedures for inspection, checking and adjustments for proper operation of the Plant.

The maintenance data shall include complete instructions for routine checks, servicing, maintenance and repair of all parts and for dismantling, handling and re-assembly of all equipment, sub-assemblies and all separate components. The maintenance data shall also include where possible parts catalogues. The lists shall provide all necessary information for identifying the parts and for

re-ordering the parts including name of part, part number and catalogue references where applicable, name of manufacturer, size, capacity and other characteristics.

General arrangements, single line diagrams and detailed drawings shall be provided for ready reference in the operation and maintenance instructions.

The manuals shall be printed on ISO paper size A4 (210x297 mm) with offset or equivalent printing strongly bound in a durable stiff cover bearing the title in approved legend. Drawings shall be folded or reduced to 297 mm height. All volumes shall bear on the spine an approved shortened version of the title.

The Contractor shall submit three (3) draft copies for approval of the Engineer prior to producing finished volumes.

The Contractor shall provide seven (7) copies of the approved Operation and Maintenance Manuals prior to Taking Over by the Employer. Supplementary Operation and Maintenance Manual shall be provided by the Contractor, if required, to incorporate changes resulting from experience during the operation and maintenance period. The work shall not be considered to be completed for the purpose of taking over until such manual and drawings have been supplied to the Employer.”

#### **Sub-Clause 6.9 Manufacturing Drawings**

The words “Unless otherwise specified in Part-II” are deleted and the following is added at the end of Sub-Clause:

“However, the Contractor is required to disclose to the Engineer or the Employer any confidential information necessary to justify the reliability, the efficiency and the operation and maintenance of the Plant supplied by him. The following new Sub-Clauses 6.10 and 6.11 are added:

#### **Sub-Clause 6.10 “As-Built” Drawings**

The Contractor shall furnish to the Engineer six (6) copies and one (1) reproducible of approved quality of all “As-Built” drawings within the period mentioned in the Preamble to Conditions of Contract. All drawings shall also be provided in a soft form (CD or DVD or USB).

#### **Sub-Clause 8.1 General Obligations**

The text of Sub-Clause 8.1 is deleted and substituted by the following:

- (a) The Contractor shall commence the work on the date specified in the Preamble to Conditions of Contract and shall proceed with the same with due expedition and without delay.
- (b) The Contractor shall, in accordance with the Contract, with due care and diligence, complete the Works and test and commission the Plant and carry out the Works within the Time for Completion. The Contractor shall also provide all necessary Contractor's Equipment, superintendence, Labour and except as stated herein below, all necessary facilities therefor.

The Employer will permit use of the Erection and Testing Equipment and Maintenance Tools as given in the Preamble to Conditions of Contract.

The above facilities shall be provided at no cost to the Contractor but he shall procure at his cost all required consumable materials and any other items necessary for the proper execution of the

Works. These shall be properly used and maintained by the Contractor and returned to the Employer upon handing over of the Works in good condition, fair wear and tear excepted. In case of any damage, loss or theft, the items shall be replaced by the Contractor at his own cost.”

**Sub-Clause 10.1 Performance Security**

The text of Sub-Clause 10.1 is deleted and substituted by the following:

“The Contractor shall provide a Performance Security in the prescribed Form annexed to these Documents. The said Security shall be furnished by the Contractor within twenty-eight (28) days after the receipt of Letter of Acceptance. The Performance Security shall be of an amount equal to ten (10) percent of the Contract Price in the currency (ies) of the Contract wherein 50% shall be in the form of Bank Guarantee from any Scheduled Bank of Pakistan or from a bank located outside Pakistan duly counter-guaranteed by a Scheduled Bank of Pakistan and 50% shall be in the form of Insurance Guarantee from an Insurance company having at least AA rating from PACRA/JCR.

The performance security shall be valid for twenty-eight (28) days beyond defect liability period and the amount shall be reduced to 50% during defects liability period.

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

**Sub Clause 10.3 Claim under Performance Security**

Sub Clause 10.3 is deleted in its entirety.

The following new Sub Clause 10.4 is added:

**Sub-Clause 10.4 Performance Security Binding on Variations and Changes**

“The Performance Security shall be binding irrespective of variations and changes in the quantities of the Works or extensions in completion time of the Works, which are granted or agreed upon under the provisions of the Contract.”

**Sub-Clause 11.1 Site Data**

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

“The Contractor shall satisfy himself as to the nature of the ground, the hydrological and climatic conditions, subsoil, the form and nature of the Site, the quantities and nature of the Work and materials necessary for the completion of the Works, and the means of access to the Site, the accommodation he may require and in general shall himself obtain all necessary information as to risks, contingencies, and other circumstances which may influence or affect his Bid.

**Sub-Clause 12.1 Program to be furnished**

Sub-Clause 12.1(a) is deleted and substituted by the following:

“(a)The order in which the Contractor proposes to carry out the Works (including preliminaries, required material ordering, delivery to Site, construction, erection and rectifications work, testing, commissioning and taking over by the Employer). The program shall also include the following:

- (i) Employment of local and expatriate Labour of various categories.

- (ii) Local material procurement; and
- (iii) Material imports, if any.”

In Sub-Clause 12.1(c) (iv) the word “any import licenses” are deleted.

#### **Sub-Clause 12.4 Monthly Progress Report**

The following Sub-Clause 12.4 are added:

During the period of the Contract, the Contractor shall submit six (6) sets of report to the Engineer not later than the 8th day of each month including:

- (i) a construction schedule indicating the progress achieved during the preceding month.
- (ii) description of all work carried out since the last report.
- (iii) description of the work planned for the next forty-two (42) days sufficiently detailed to enable the Engineer to determine his program of inspection and testing.
- (iv) summary of daily job record for the preceding month.
- (v) colour digital photographs to illustrate progress.

#### **Sub-Clause 12.5 Daily Job Record**

The following Sub-Clauses 12. are added:

“During the period of the Contract, the Contractor shall keep a daily record of the work progress duly signed by the Project Manager / Engineer and the Contractor Representative, which shall be made available to the Employer and the Engineer as and when requested.

The daily record form approved by the Project Manager / Engineer shall include particulars of weather conditions, number of men working in different categories, deliveries of materials, quantity, location and assignment of equipment.”

#### **Sub-Clause 13.1 Contractor's Representative**

At the end of the Sub-Clause, the following is added:

“The Contractor's Representative shall be a competent and skilled person approved by the Engineer (whose approval may at any time be withdrawn). He shall be present on the Site during all working hours and shall not be transferred from the Site without the consent of the Project Manager / Engineer. However, whenever he is leaving the site, he should nominate his counterpart till he / she return back to site. The Contractor's Representative shall be a registered professional engineer as defined in the Pakistan Engineering Council Act 1975 (V of 1976).”

The following new Sub-Clauses 13.3 and 13.4 are added:

#### **Sub-Clause 13.3 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.

#### **Sub-Clause 13.4 Employment of Local Personnel**

“The Contractor shall, to the extent practicable and reasonable, employ staff and Labour from sources within Pakistan.”

#### **Sub-Clause 14.1 Contractor's Equipment**

Replace the word “or” at the end of Sub-paragraph (a) by “and” and insert the following at the end of Sub-paragraph (b):

“Which shall not be unreasonably withheld.”

#### **Sub-Clause 14.2 Safety Precautions**

At the end of the Sub-Clause, the following is added:

“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 and security arrangements at site.

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.

The external security to the Foreigners during their traveling and stay at project site shall be provided / arranged by the Employer as per SOPs and recommendations of law enforcement agencies.

#### **Sub-Clause 14.3 Electricity, Water and Gas**

The text of Sub-Clause 14.3 is deleted and substituted by the following:

“The Contractor shall be responsible for making his own arrangements for the adequate supply of electricity, water and gas required for the effective performance of his obligations under the Contract. Subject to the aforesaid, the Contractor shall be entitled to use for the purposes of the Works such supplies and services as may become available on the Site. The Contractor shall, before the commencement of the work at Site, seek the approval of the Engineer as to his detailed requirements of electricity, water and gas for the entire Contract period. The Contractor shall at his own cost provide any apparatus necessary for such use”. The contractor will bear the cost of distribution network for electricity, potable water, telephone, gas and their consumption by his own personnel for the purpose of the work.”

#### **Sub-Clause 14.4 Employer's Equipment**

The text of Sub-Clause 14.4 is deleted and substituted by the following:

“The Employer shall, if the Contractor so requests for the execution of the works, operate any available equipment of which details are given in the Preamble to Conditions of Contract. The Contractor shall pay the Employer a mutually agreed price for such use.

The Employer shall during such operation retain control of and be responsible for the safe working of the equipment.”

#### **Sub-Clause 14.8 Information for Import Permits & Licenses**

The text of Sub-Clause 14.8 is deleted and substituted by the following:

“The Contractor shall submit to the Employer in good time such details of all Plant and Contractor's

Equipment to be imported into Pakistan and identify as to what assistance of the Employer is required to assist for obtaining by the Contractor of all necessary import permits or licenses”.

**Sub-Clause 15.2 Compliance with Laws**

The text of Sub-Clause 15.2 is deleted and substituted by the following:

“The Contractor shall comply with the Laws of country of manufacture and the Laws of Pakistan where the Plant is to be erected”.

**Sub-Clause 16.4 Photographs of Works and Advertisement Prohibited**

Sub Clause 16.4 is added

Except with the prior written authorization of the Employer, the Contractor shall not exhibit or permit to be exhibited any photographs or advertisement on the Works. Any authorized/ Approved exhibition shall be immediately removed if the Employer so requires.

**Sub-Clause 16.5 Training of the Employer’s employees**

Sub Clause 16.5 is added

The Contractor shall provide such facilities for the training of PEDO Employees, engineering students, apprentices and trade apprentices on such sections of the Works at the Site or on the Contractor’s premises or Contractor selected plant manufacturer's premises and factories, or wherever else work is in hand, as specified or directed by the Project Manager / Engineer. The Employer shall direct what sums by way of wages and allowances are to be paid by the Contractor to such persons and shall reimburse the Contractor for such sums as are so directed to be paid and are paid. The Contractor shall also provide medical expenses or medical insurance and travelling expenses for trainees if required by the Employer which shall be reimbursed by the Employer.

The language of training at the above stated premises shall be English and Urdu.

**Sub-Clause 16.6 Protection of the Environment**

Sub Clause 16.6 is added.

The Contractor shall comply with all applicable national and local environmental regulations and guidelines.

The Contractor shall (a) establish an operational system for managing environmental impacts, (b) carry out all the monitoring and mitigation measures set forth in the Initial Environmental Examination (IEE) and Environmental Management Plan (EMP) for the project, which may be extracted from the Feasibility Study Report and Environmental Assessment Report of the Project, and (c) allocate the budget required to ensure that such measures are carried out, and actual cost for the implementation of such measures shall be reimbursed by the employer to the contractor from Provisional Sum. The Contractor shall submit to the Employer quarterly reports on the carrying out of such measures.

**Sub-Clause 17.4 Consents and Way Leaves**

The text of Sub-Clause 17.4 is deleted and substituted by the following:

“The Employer shall issue permissions, letters, certificates and provide such other assistance to the Contractor for obtaining permits-to-work, way leaves and approvals from any other

department/authority and right of way from private owners, if required. The Contractor will bear the cost of logistics, fees, etc. for such activities. The Employer, will reimburse the Contractor only the payments made by him in respect of any land compensation for obtaining such way leaves, required for the Works.”

**Sub-Clause 17.5 – Import Permits and Licenses**

The word “Employer” is deleted and substituted by the word “Contractor” and the following is added at the end of Sub-Clause 17.5:

“The Employer will provide assistance for this purpose.”

**Sub-Clause 18.1 – Engagement of Labour**

At the end of the Clause the following is added:

“In accordance with the regulations, orders and requirements of the Government of Pakistan”.

The following new Sub-Clauses 18.5 to 18.12 are added:

**Sub-Clause 18.5 Employment of Persons in the Service of Others**

The Contractor shall not recruit or attempt to recruit his staff and Labour from amongst the persons in the service of the Employer or the Project Management Consultant and vice-versa, unless mutually agreed between the Employer/Project Management Consultant and the Contractor.

**Sub-Clause 18.6 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, employees or Labour.

**Sub-Clause 18.7 Arms and Ammunition**

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

**Sub-Clause 18.8 Festivals and Religious Customs**

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

**Sub-Clause 18.9 Disorderly Conduct**

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

**Sub-Clause 18.10 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.

**Sub-Clause 18.11 Reporting of Accidents**

The Contractor shall report to the Engineer and Employer 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 to appropriate action required under the law, notify the Engineer and Employer immediately by the quickest available means.

**Sub-Clause 18.12 Compliance by Subcontractors**

The Contractor shall be responsible for compliance by his Subcontractors of the foregoing provisions.”

**Sub-Clause 19.1 Manner of Execution**

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

“The Contractor shall submit for approval of the Engineer, his detailed method statement(s) for the execution of such items of work as may be desired by the Engineer. Approval of such method statement(s) shall neither relieve the Contractor of his responsibilities under the Contract nor form any basis for claiming additional costs.”

**Sub-Clause 19.3 Uncovering Work**

The following is added at the end of second paragraph of Sub-Clause 19.3: “In any other case, all costs shall be borne by the Contractor.”

**Sub-Clause 19.4 Use of Pakistani Materials**

The following Sub-Clause 19.4 is added:

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

**Sub-Clause 20.2 Inspection and Testing During Manufacture**

The following Sub-Clauses are added.

**Sub-Clause 20.2.1**

The Contractor shall at its own expense carry out at the place of manufacture and/or on the Site all such tests and/or inspections of the Plant and any part of the Plant as are specified in the Contract.

**Sub-Clause 20.2.2**

The representatives of CEO PEDO and the Engineer, shall carry out pre-shipment inspection of the plant/material/equipment at manufacturer’s works. All reasonable facilities (laboratory, tools, instruments, machines, samples etc.) as provided in the specifications or followed by trade and industry in general shall have to be offered to the representatives, by Contractor at his expense for carrying out Testing and Inspection. The Contractor shall fully assist the nominated representatives in submission of visa application(s) by providing all supporting document on his part and help in attaining visa through necessary correspondence with the embassy.

**Sub-Clause 20.2.3**

The authorized representatives, shall witness the Type Tests (if applicable in accordance with

Technical Specifications Provision as per NTDC type test policy. The Contractor shall fully assist the nominated representatives in submission of visa application(s) by providing all supporting document on his part and help in attaining visa through necessary correspondence with the embassy.

**Sub-Clause 20.2.5**

The cost of witnessing type test, pre-shipment inspection or repetition thereof by the representative (which shall include visa expense, return air ticket, boarding, lodging etc. as the case may be along with a daily allowance of US Dollar 200/day/person in case of foreign inspection and PKR 20,000/day/person [besides other costs of travelling and lodging etc. (as above) for inspection /testing to be conducted inside Pakistan for each visit of every person to witness these tests, shall be borne by the Contractor without any additional cost to the Employer.

**Sub-Clause 20.2.6**

The Contractor shall keep the Employer and Engineer informed the progress of manufacturing and notify the Engineer at least eight (08) weeks in advance, in writing as to when the Plant or any part thereof will be ready for inspection and/or performance of type tests (if applicable).

**Sub-Clause 20.2.6**

The Contractor shall provide the Engineer with a certified report of the results of any such test and/or inspection. If the Employer or Engineer or their designated representatives fails to attend the test and/or inspection, or if it is agreed between the parties that such persons shall not do so, then the Contractor may proceed with the test and/or inspection in the absence of such persons, and may provide the Engineer with a certified report of the results thereof.

**Sub-Clause 20.2.7**

The Engineer may require the Contractor to carry out any test and/or inspection not required by the Contract, provided that the Contractor's reasonable costs and expenses incurred in carrying out such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of work on the Works and/or the Contractor's performance of its other obligations under the Contract, due allowance will be made in respect of the Time for Completion and the other obligations so affected.

**Sub-Clause 20.2.8**

Any inspection and/or witnessing of tests or the waiving of such tests and/or surveillance by the Employer and Engineer or their representatives shall not relieve the Contractor of its obligations and responsibilities under the Contract regardless of any approval or consent given by the Employer and Engineer. All work covered by the Contract shall be subject to surveillance, testing and inspection by the representatives of the Employer. The representatives may require witnessing any or all the tests to be carried out. For such purpose the Contractor shall provide free access at all times during manufacture, assembly and testing to the premises in which the work is being carried out.

**Sub-Clause 20.2.9**

If any dispute or difference of opinion shall arise between the parties in connection with or arising out of the test and/or inspection of the Plant or part of the Works that cannot be settled between the parties within a reasonable period of time, the decision of Engineer will be considered as final

**Sub-Clause 24.1 Cost of Suspension**

At the end of the second paragraph after the word “Contractor” the following is added:

“Or for the proper execution or for the safety of the Works or Plant unless such necessity results from any act or default of the Engineer or the Employer or in consequence of any of the Employer's Risks under Sub-Clause 37.2.”

**Sub-Clause 24.4 Resumption of Work**

First paragraph of Sub-Clause 24.4 is deleted and substituted by the following:

“If the Contractor chooses not to treat prolonged suspension as an omission or termination under Sub-Clause 24.3, the Employer shall, upon the request of the Contractor, take over the responsibility for protection, storage, security and insurance of the suspended Works and of the Plant which has been delivered to the Site and which is affected by suspension and the risk of loss or damage thereto shall thereupon pass to the Employer”.

**Sub-Clause 25.1 Time for Completion**

The text of Sub-Clause 25.1 is deleted and substituted by the following:

“The Works or part of works at the place of the project mentioned to General Conditions of Contract shall be completed tested and commissioned within the period mentioned in the Preamble to Conditions of Contract or any other time agreed by the Employer and the Contractor and notified to all stakeholders.”

**Sub-Clause 26.1 Extension of Time for Completion**

Sub Clause 26.1(h) is deleted.

**Sub-Clause 26.3 Earlier Completion**

(i) At the end of Sub-Clause 26.3(a) the following text is added, and Clause is re- designated as 26.3.

“The extra sum to be paid to the Contractor for Completion of Works prior to the date of Completion established under Sub-Clause 25.1 shall be computed on the basis of the sums mentioned in the Preamble to Conditions of contract.”

(ii) Sub-Clause 26.3 (b) is deleted.

**Sub-Clause 26.4 Rate of Progress**

The following Sub-Clause 26.4 is added:

“If for any reason, which does not entitle the Contractor to an extension of time, the rate of progress of the Works or any Section is at any time, in the opinion of the Engineer, too slow to comply with the Time for Completion, the Engineer shall so notify the Contractor who shall thereupon take such steps as are necessary, subject to the consent of the Engineer, to expedite progress so as to comply with the Time for Completion. The Contractor shall not be entitled to any additional payment for taking such steps. If, as a result of any notice given by the Project Manager / Engineer under this Clause, the Contractor considers that it is necessary to do any work at night or on locally recognized days of rest, he shall be entitled to seek the consent of the Engineer so to do. Provided that if any steps, taken by the Contractor in meeting his obligations

under this Sub-Clause, involve the Employer in additional supervision costs, such costs shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any moneys due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.”

#### **Sub-Clause 27.1 Delay in Completion**

Sub-Clause 27.1 is deleted and substituted by the following:

“If the Contractor fails to deliver the Works, or any part thereof, within the time stated in Sub-Clause 25.1, or fails to complete the whole of the Work, or, if applicable, any Section within the relevant time prescribed by Sub-Clause 25.1, then the Contractor shall pay to the Employer the relevant sum stated herein below as liquidated damages for such default (which sum shall be the only moneys due from the Contractor for such default) for every day or part of a day which shall elapse between the relevant time for Delivery or Time for Completion and the actual date of delivery at site or the date stated in a Taking-Over Certificate of the whole of the Works or the relevant Section, as the case may be, subject to the applicable limit stated herein below.

The Employer may deduct the amount of such damages from any monies due or to become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works, or from any other of his obligations and liabilities under the Contract.

The liquidated damages for each day of delay and the maximum amount of liquidated damages shall be the amounts mentioned in the Preamble to Conditions of Contract.”

#### **Sub-Clause 28.7 Consequences of Failure to Pass Tests on Completion**

The words “by arbitration” appearing at the end of the Sub-Clause 28.7(c) are deleted and substituted by the words “by the Engineer”.

#### **Sub-Clause 30.4 Extension of Defects Liability Period**

At the end of 4th paragraph of Sub-Clause the following is added: “or such period mutually agreed.”

#### **Sub-Clause 30.5 Failure to Remedy Defects**

In first line after the words “reasonable time” the following is added: “time fixed by the Engineer”.

The following new Sub-Clause 30.13 is added:

#### **Sub-Clause 30.13 Unfulfilled Obligations**

“After the Defects Liability Certificate has been issued, the Contractor and the Employer shall remain liable for the fulfillment of any obligation which remains unperformed at that time. For the purposes of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in force.”

#### **Sub-Clause 31.1 Engineer’s Right to Vary**

The following is added at the end of second paragraph:

“No such variation shall in any way vitiate or invalidate the Contract, but the effect, if any, of all such variations shall be valued in accordance with Clause 31. Provided that whether the issue of an instruction to vary the Works is necessitated by some default of or breach of Contract by the Contractor or for which he is responsible, any additional cost attributable to such default shall be borne by the Contractor”.

### **Sub-Clause 31.5 Records of Costs**

The word “Engineer” in 4th line of Sub-Clause is deleted and substituted by “Engineer /Employer”.

The following new Sub-Clauses 31.6 and 31.7 are added:

### **Sub-Clause 31.6 Day work under Variation Order**

A Variation Order may provide that work done pursuant thereto shall be executed as Day work, if applicable in the opinion of the Engineer. In such case, the Contractor shall be paid for such work under the conditions and the rates and prices set out in the Day Work Schedule.

### **Sub-Clause 31.7 Value Engineering**

The Contractor may, at any time, submit to the Engineer a written proposal which in the Contractor’s opinion will reduce the cost of constructing, maintaining or operating the works, or improve the efficiency or value to the Employer of the completed Works or otherwise be of benefit to the Employer. Any such proposal shall be prepared at the cost of the Contractor. However, Employer is not bound to accept such proposal.”

### **Sub-Clause 33.1 Terms of Payment**

The text of Sub-Clause 33.1 is deleted and substituted by the following:

#### **1. Plant, Equipment including Spare parts Supplied from Abroad**

In respect of plant, equipment and spare parts supplied from abroad, the following payments shall be made:

**Ten percent (10%)** of the total amount as an advance payment against receipt of invoice after placement of manufacturing order for Plant & Equipment and an irrevocable advance payment security (Bank Guarantee) for the equivalent amount made out in favor of the Employer. The advance payment security may be reduced in proportion to the value of the plant and equipment delivered to the site, as evidenced by shipping and delivery documents.

**Eighty percent (80%)** of the total amount upon delivery of measured quantity to Site, duly approved by the Engineer, within time period specified in PCC Sub-Clause 33.5.

**Five percent (5%)** of the total amount upon issue of the Taking over Certificate, within time period specified in PCC Sub-Clause 33.5

**Five percent (5%)** of the total amount upon expiry of the Defect Liability period, within time period specified in PCC Sub-Clause 33.5

#### **2. Plant, Equipment Including Spare parts Supplied from within Pakistan**

In respect of plant, equipment and spare parts supplied from within the Employer’s Country, the

following payments shall be made:

**Ten percent (10%)** of the total “EXW” amount as an advance payment against receipt of invoice after placement of manufacturing order for Plant & Equipment and an irrevocable advance payment security for the equivalent amount made out in favor of the Employer. The advance payment security may be reduced in proportion to the value of the plant and equipment delivered to the site, as evidenced by delivery documents.

**Eighty percent (80%)** of the total “EXW” amount upon delivery of measured quantity to the site within time period specified in PCC Sub-Clause 33.5

**Five percent (5%)** of the total EXW amount upon issue of the Taking over Certificate, within time period specified in PCC Sub-Clause 33.5

**Five percent (5%)** of the total on site amount upon expiry of the Defect Liability period, within fifty six (56) days after receipt of invoice.

### **3. Civil Works, Installation and other Services including Transportation/Storage at Site**

In respect of Civil works, Installation and other services including transportation/Storage for the local currency, the following payments shall be made:

**Ninety percent (90%)** of the measured value of work and services performed by the Contractor, as identified in the said Program of Performance, during the preceding month, as evidenced by the Employer’s authorization of the Contractor’s application, will be made within time period specified in PCC subclause 33.5

**Five percent (5%)** of the measured value of civil works, installation and other services performed by the Contractor as evidenced by the Employer's authorization of the Contractor's monthly applications, upon issue of the Completion Certificate, within time period specified in PCC Sub-Clause 33.5.

**Five percent (5%)** of the measured value of civil works, installation and other services performed by the Contractor as evidenced by the Employer's authorization of the Contractor's monthly applications, upon issue of the Defect Liability Certificate, within time period specified in PCC Sub-Clause 33.5

#### **Advance Payment Security**

The Contractor will submit advance payment security for all advance payments in the form of Bank Guarantee issued by a Scheduled Bank of Pakistan or from a bank located outside Pakistan duly counter-guaranteed by a Scheduled Bank in Pakistan in favor of the Employer valid for a period twenty-eight (28) days beyond issue of taking over certificate on the standard form on Bank Guarantee for Advance Payment. “Advance Payment Security may be reduced according to proportion of the value of work performed as certified for payment not more frequently than every three months”

The following Sub-Clauses 33.1.1 to 33.1.4 are added:

#### **Sub-Clause 33.1.1 Retention of Payment**

“If at any time any payment would fall due for Works or part of Works and, if there shall be any defect in part of such Works in respect of which such payment is proposed, the Employer may retain the whole or any part of such payment. Any sum retained by the Employer pursuant to the

provisions of this Clause shall be paid to the Contractor after the said defect is removed.”

**Sub-Clause 33.1.2 Payment Where Taking-Over Certificate Issued for Section or Part of Works**

“If any section or part of the Works shall be taken-over separately under Clause 29 (Taking- Over) hereof, the payments herein provided for on or after Taking-Over shall be made in respect of the section or part taken-over and reference to the price shall mean such part of the price as shall, in the absence of agreement, be apportioned thereto by the Engineer.”

**Sub-Clause 33.2 Method of Application**

The following paragraphs are added at the end of Sub-Clause 33.2:

“The Contractor shall submit to the Employer/Engineer six (6) copies of the Application for Certificate of Payment (invoices) each signed by the Contractor and in such form as the Employer/Engineer may from time to time prescribe.

The Employer/Engineer shall examine such invoices within the times stated in Sub-Clauses 33.3 and 33.5. After such time each invoice will be deemed to have been accepted. If the invoice amount is not accepted by the Employer/Engineer, the disputed amount which is retained, shall be communicated, giving the reasons in writing, to the Contractor within the same time. If the objections of the Employer/Engineer are not acceptable to the Contractor, he will justify his claims with necessary documentation and include left over amounts/items in the next invoice. However, the portions of such invoices accepted by the Employer/Engineer shall be paid as per Sub-Clause 33.5.”

**Sub-Clause 33.5 Payment**

The text of Sub-Clause 33.5 is deleted and substituted by the following:

“The amount due to the Contractor under any Interim Payment Certificate issued by the Engineer pursuant to this Clause, or to any other term of the Contract, shall, subject to Clause 27, be paid by the Employer to the Contractor within thirty (30) days after such Interim Payment Certificate has been jointly verified by Employer, Engineer and Contractor, or, in the case of the Final Certificate (referred to in Sub-Clause 33.10) within sixty (60) days after such Final Payment Certificate has been jointly verified by Employer, Engineer and Contractor.

Deduction shall be made from the net amounts payable to the Contractor of any sum(s) in accordance with the prevalent Federal and/or Provincial laws, provided that no such deduction shall be made from those payments in respect of which the Contractor has obtained exemption under the Law.”

**Sub-Clause 33.6 Delayed Payment**

The text of Sub-Clause 33.6 is deleted and substituted by the following:

“In the event of the failure of the Employer to make payment within the times stated in Sub- Clause 33.5, the Employer shall pay to the Contractor compensation at the rate of KIBOR+2% for local currency and LIBOR+1% for foreign currency per annum upon all local currency sums unpaid from the date by which the same should have been paid. The provisions of this Sub-Clause are without prejudice to Contractor's entitlement under Sub-Clause 46.1.”

### **Sub-Clause 33.8 Payment by Measurement**

The work shall be measured for the units mentioned in the Schedule of Prices according to the Contract as determined by the Engineer from approved drawings,

### **Sub-Clause 33.12 Withholding of Payment**

New Sub-Clauses 33.12 and 33.13 are added as given below:

If the Works or any parts thereof are not being carried out to the Engineer satisfaction and in order to protect the Employer from loss on account of:

- (a) defective work not rectified
- (b) guarantees not met
- (c) claims filed against the Contractor
- (d) failure of the Contractor to make payments due for Plant procured or Labour employed by him
- (e) damage to any other contractor employed by the Employer
- (f) Contractor's non-compliance with the Contract
- (g) any Government dues recoverable from the Contractor if notified by the Government

The Engineer may notify withholding of such payments or part thereof as may, in his opinion, be related to the aforesaid reasons/grounds. When the reasons/grounds for withholding the payment are removed by the Contractor, the Engineer shall upon being satisfied to that effect issue Certificate of Payment in respect of withheld amounts.

### **Sub-Clause 33.13 Payment Schedule**

Within thirty (30) days after receipt of the Letter of Acceptance, the Contractor shall submit a proposed payment schedule indicating the estimated payment throughout the currency of the Contract. This schedule shall be in a format satisfactory to the Employer and the Engineer, shall be consistent with the Program of Works, the advance, progress and final payment provisions included herein, and shall be in sufficient detail to permit preparation of cash flow projections for use by the Employer.”

### **Sub-Clause 35.2 Currency Restrictions**

The text of Sub-Clause 35.2 is deleted and substituted by the following:

“Any required foreign currency transactions shall be met by the Contractor at his cost from his own resources.”

### **Sub-Clause 35.3 Rates of Exchange**

The text of Sub-Clause 35.3 is deleted and substituted by the following:

“Any import, if required and approved by the Employer shall be paid in local currency at an exchange rate as notified by the State Bank of Pakistan 28 days prior to invoice submission date”.

### **Sub-Clause 36.4 Payment against Provisional Sums**

The text of Sub-Clause 36.4 is deleted substituted by the following:

Provisional Sums, if any will be expended on the direction of the Engineer through variation orders which would be valued in accordance with the provisions Clause 31 Conditions of Contract.

**Sub-Clause 37.2 Employer's Risks**

The text of Sub-Clause 37.2 is deleted and substituted by the following:

“The Employer's Risks are:

- (a) (Insofar as they relate to Pakistan) war and hostilities (whether war be declared or not), invasion, act of foreign enemies;
- (b) (Insofar as they relate to Pakistan) rebellion, revolution, insurrection, military or usurped power or civil war;
- (c) ionizing radiation or contamination by radioactivity from any nuclear fuel, radio-active toxic explosives or other hazardous properties of any explosive nuclear assembly or nuclear components thereof;
- (d) pressure waves caused by aircraft travelling at sonic or supersonic speed;
- (e) (Insofar as they relate to Pakistan) riot, commotion or disorder, unless solely restricted to the employees of the Contractor or of his Subcontractors.
- (f) use or occupation of the Work or any part thereof by the Employer;
- (g) fault, error, defect or omission in the design of any part of the Works by the Engineer, Employer or those for whom the Employer is responsible for which the Contractor has disclaimed responsibility in writing within a reasonable time after the receipt of such design;
- (h) the use or occupation of the Site by the Works or any part thereof, or for the purposes of the Contract: or interference, whether temporary or permanent with any right of way, light, air or water or with any easement, wayleaves or right of a similar nature which is the inevitable result of the construction of the Works in accordance with the Contract;
- (i) the right of the Employer to construct the Works or any part thereof on, over, under, in or through any land;
- (j) damage (other than that resulting from the Contractor's method of construction) which is the inevitable result of the construction of the Works in accordance with the Contract; and
- (k) the act, neglect or omission or breach of contract or of statutory duty of the Engineer, the Employer or other contractors engaged by the Employer or of their respective employees or agents.”

**Sub-Clause 39.2 Loss or Damage before Risk Transfer Date**

The words “by arbitration under Clause 50” are deleted and substituted “by the Engineer”.

**Sub-Clause 39.4 Duty to Minimize Delay**

New Sub-Clause 39.4 is added:

Each Party shall at all times use all reasonable endeavors to minimize any delay in the Performance of the Contract as a result of Risks.

The Contractor shall give notice to the Employer and vice versa the Employer shall give notice to the Contractor in case of foreseeable delay by the Risks.”

**Sub-Clause 40.2 Employer's Liability**

The text of Sub-Clause 40.2 is deleted and substituted such as;

The Employer shall be liable for and shall indemnify the Contractor against all losses, expenses or claims in respect of loss of or damage to any physical property (Other than the Works) or of death or personal injury to the extent caused by those of the Employer's Risks listed in paragraphs (f), (g), (h), (i), (j), and (k) of Sub-Clause 37.2 but not otherwise.”

**Sub-Clause 42.2 Maximum Liability**

The Clause 42.2 text is deleted and substituted by the following.

The liability of the Contractor to the Employer under these Conditions shall in no case exceed the Contract Price.

**Sub-Clause 42.6 Foreseen Damages**

Sub-Clause 42.6 is deleted in its entirety.

**Sub-Clause 43.1(a) The Works (Insurance)**

The other risks to be insured are:

- (i) Fire, smokes, explosion, falling objects, earthquake, perils of the sea, tempest, impact by aircraft or land vehicle, aircraft and other aerial devices or articles dropped there from, lightning, strike, riot, civil commotion, escape of water, inundation, rain, snow, landslides, flood, act of GOD, vandalism or malicious damage, windstorm or hail storm.
- (ii) Collision, upset, overturn, derailment, stranding or sinking of an automobile or any conveyance of a common carrier by land, water or air in which the Plant or any part thereof is being carried including overland transportation in Pakistan from port of entry to the Site.
- (iii) Theft, burglary or attempted theft or burglary.
- (iv) Any loss or damage during pre-erection storage.
- (v) Faults in construction and erection, lack of skill, lack of experience, negligence, malicious act.
- (vi) Any other sudden and unforeseen event such as loss or damage due to collapse etc. on site, transport of items to be erected.
- (vii) Actions of the Employer in the operation of plant or part thereof on behalf of the Contractor.

The following further Sub-Clauses are 43.1.1, 43.1.2 and 43.1.3 are added:

**Sub-Clause 43.1.1 Marine Insurance of Plant**

- 1) The Contractor shall in the joint names of the Contractor and the Employer, obtain Marine Cargo All Risks Insurance to cover loss or damage to the Plant or part thereof during transport.
- 2) The insurance for each consignment of Plant or part thereof shall attach from the time the Plant or part thereof leave the warehouse or place of storage and terminate after ninety (90) days on its completion of unloading at the Site or until insurance survey whichever occurs first. Upon arrival of each consignment at the Site, the Contractor shall, immediately arrange insurance survey by the insurance company.
- 3) The sum insured for imported Plant or part thereof shall be for its full replacement value at the Site i.e. 100% CIP value at the Site for each consignment of the Plant or part thereof plus not

less than 30% of CIP value at the Site to cover any additional costs resulting from loss or damage thereof.

- 4) The Insurance Policy for imported Plant etc. shall be on "All Risks" basis and shall not be limited to the attachment/endorsement of following clauses:
  - (a) Institute Cargo Clauses (A)
  - (b) Institute War Clauses (Cargo)
  - (c) Institute Strikes Clauses (Cargo)
  - (d) Institute Cargo Clauses (Air) excluding sending by Post
  - (e) Institute War Clauses (Air Cargo) excluding sending by Post.
  - (f) Institute Strikes Clauses (Air Cargo)
  - (g) Special Replacement Clauses (Air)
  - (h) Institute Theft, Pilferage and Non-delivery Clauses

**Sub-Clause 43.1.2 Erection/Construction All Risks Insurance**

- 1) The Contractor shall insure the Works or part thereof in the joint names of the Contractor and the Employer.
  - (a) from the date following the completion of the first unloading at the Site of the Plant or part thereof and other materials (to be used for construction or erection) and from commencement of Works at Site until the Risk Transfer Date against any loss or damage caused by any of the Contractor's risks and any other risks specified in Sub-Clause 43.1.(a) above and
  - (b) during the Defects Liability Period against any loss or damage which is caused either:
    - (i) by the Contractor in completing any outstanding work or complying with his obligations under Clause 30, or
    - (ii) by any of the Contractor's risks and any other risks specified in Sub-Clause 43.1(a) above, which occurred prior to the Risk Transfer Date.
- 2) The sum insured shall be the full replacement value at the Site, which includes
  - (a) (i) FOB value of Imported Plant and Equipment to be erected  
(ii) Ex factory value of indigenous plant to be erected
  - (b) Freight and insurance including local transport
  - (c) customs duties and taxes etc.
  - (d) cost of erection
  - (e) cost of civil engineering work including escalation
  - (f) clearance of debris, maximum @ 5 % of minimum amount of Third-Party Liability Insurance.

Plus 30% to cover any additional costs resulting from loss or damage thereof.

**Sub-Clause 43.1.3 General**

Should a loss be sustained, the Contractor shall replace or repair any loss or damage at his own cost and complete the Works in accordance with the Contract as soon as possible after occurrence

of such loss or damages, without waiting for the settlement of the insurance claim.”

**Sub-Clause 43.2 Contractor's Equipment**

The text of Sub-Clause 43.2 is deleted and substituted by the following:

“The Contractor shall insure the Contractor's Equipment for its full replacement value while on the Site against all loss or damage caused by any of the Contractor's Risks.”

**Sub-Clause 43.7 Remedies on the Contractor's Failure to Insure**

The text of Sub-Clause 43.7 is deleted and substituted by the following:

If the Contractor fails to produce evidence of insurance cover as stated in Sub-Clause 43.5 (a), then the Employer may effect and keep in force such insurance. Premiums paid by the Employer for this purpose and reasonable costs including the man- hours costs of Employer's Personnel shall be deducted from the Contract Price.

The following new Sub-Clauses 43.9 to 43.12 are added:

**Sub-Clause 43.9 Currency of Insurance**

All policies of Insurance of the Plant shall provide for payment of indemnity to be made in such amounts as will allow making good of loss of or damage to the whole or any part of the Works.

**Sub-Clause 43.10 Contractor to Notify**

It shall be the responsibility of the Contractor to notify the insurance company of any changes in nature and extent of the Works and to ensure the adequacy of the insurance coverage at all times in accordance with the provisions of the Contract.

**Sub-Clause 43.11 Procurement of Insurance Policies**

The Contractor shall procure and submit the insurance cover under this Clause within a period of twenty-eight (28) days from the date of receipt of Letter of Acceptance from the Employer.

**Sub-Clause 43.12 Insurance Company**

The policies of marine insurance and all other insurances with respect to Contractor's operations in Pakistan shall be affected with any of the insurance company acceptable to the Employer operating in Pakistan with financial strength rating of AA, approved by Pakistan Credit Rating Agency (PACRA) or JCR including National Insurance Corporation (NIC) of Pakistan.”

**Sub-Clause 44.6 Damage Caused by Force Majeure**

The text of Sub-Clause 44.6 is deleted and substituted by the following:

If in consequence of Force Majeure, the Works shall suffer loss or damage, the Contractor shall be entitled to have the value of the work done, without regard to the loss or damage that has occurred, included in a Certificate of Payment.

However, the Contractor shall put up his claim to the Employer / Engineers with full details and justification.

**Sub-Clause 44.8 Payment on Termination for Force Majeure**

Text in sub-Para (c) is deleted and Paras (d) and (e) are re-numbered as (c) and (d).

**Sub-Clause 44.10 Force Majeure Affecting Project Management Consultant's Duties**

Sub-Clause 44.10 is deleted in its entirety.

**Sub-Clause 45.2 Contractor's Default**

The following paragraph is added at the end of Sub-Clause 45.2.

“The Employer or such other contractor may use for such completion any Contractor's Equipment which is upon the Site as he or they may think proper, and the Employer shall pay the Contractor a reasonable compensation for such use”.

**Sub-Clause 45.6 Integrity Pact**

The following new Sub-Clause 45.6 is added as follows:

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 Schedule-J 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 45.2 to 45.5 and the payment under Sub-Clause 45.4 shall be made after having deducted the amounts due to the Employer under Sub-Paras (a) and (c) of this Sub- Clause.

**Sub-Clause 46.1 Employer's Default**

The comma and the word “or” at the end of paragraph (d) of Sub-Clause 46.1 are deleted and substituted by period (.) Paragraph (e) of Sub-Clause 46.1 is deleted.

**Sub-Clause 46.3 Payment on Termination for Employer's Default**

The text of Sub-Clause 46.3 is deleted and substituted by the following:

In the event of such termination, the Employer shall pay the Contractor an amount calculated in accordance with Sub-Clause 44.8.

The Employer shall pay in addition the amount of any loss or damage which the Contractor may have suffered in consequence of termination. The additional amount shall, however, not exceed the limit specified in the Preamble.

**Sub-Clause 47.1 Labour, Materials and Transport**

The text of Sub-Clause 47.1 is deleted and substituted by the following:

The contract price shall not be adjusted

#### **Sub-Clause 48.1 Local Taxation-Custom and Import Duties**

The text of Sub-Clause 48.1 is deleted and substituted by the following:

The rates and prices quoted by the Contractor in the Schedule of Prices shall be deemed to have included (i) business taxes, income tax, super tax, customs, import duties and other taxes on income, and (ii) fees charged for services provided under this Contract. The taxation is leviable as per income tax ordinance 2001 as amended to date issued by FBR Government of Pakistan including adjustment in prices as per clause 47.

#### **Sub-Clause 48.3 Port Charges and Port Congestion**

The following Sub-Clause 48.3 is added:

“The Contractor shall be deemed to have obtained all the information regarding facilities and charges, in respect of port clearance, loading and unloading, storage, transportation, congestion and confirmed the requirements thereof at his own responsibility and all such costs and charges are deemed to be included in the rates and prices of the Schedule of Prices.”

#### **Sub-Clause 49.1 Notices to Contractor**

The following paragraph is added at the end of Sub-Clause 49.1:

“For the purposes of Sub-Clause 49.1, 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.

#### **Sub-Clause 50 Disputes & Arbitration**

The Clause 50 is deleted and the following Sub-Clauses 50.1 to 50.5 are inserted:

50.1 If a dispute of any kind whatsoever arises between the Employer and the Contractor in connection with, or arising out of, the Contract or the execution of the Works, whether during the execution of the Works or after their completion and whether before or after repudiation or other termination of the Contract, including any dispute as to any opinion, instruction, determination, certificate or valuation of the Engineer, the matter in dispute shall, in the first place, be referred in writing to the Engineer, with a copy to the other party. Such reference shall state that it is made pursuant to this Clause. No later than the fifty sixth (56) day after the day on which he received such reference, the Engineer shall give notice of his decision to the Employer and the Contractor. Such decision shall state that it is made pursuant to this Clause.

Unless the Contract has already been repudiated or terminated, the Contractor shall, in every case, continue to proceed with the Work with all due diligence, and the Contractor and the Employer shall give effect forthwith to every such decision of the Engineer and until the same shall be revised, as hereinafter provided in an amicable settlement or in an arbitral award.

In any case where the Conditions of Contract provide that the decision of the Engineer is to be final and conclusive, such decision shall not be preferable to arbitration under this Clause nor shall the same be questioned in any other form of proceedings whatsoever.

50.2 If either the Employer or the Contractor be dissatisfied with a decision of the Engineer or if the Engineer fails to give notice of his decision on or before the fifty sixth (56) day after the day on which he received the reference, then either the Employer or the Contractor may, on or before the twenty eighth (28) day after the day on which the said period of fifty six (56) days

expired, as the case may be, give notice to the other party to commence arbitration, as hereinafter provided, as to the matter in dispute. Such notice shall establish the entitlement of the party giving the same to commence arbitration, as hereinafter provided, as to such dispute and, subject to Sub-Clause 50.5, no arbitration in respect thereof may be commenced unless such notice is given.

If the Engineer has given notice of his decision as to a matter in dispute to the Employer and the Contractor and no notification of intention to commence arbitration as to such dispute has been given by either the Employer or the Contractor on or before the twenty eighth (28) day after the day on which the parties received notice as to such decision from the Engineer the said decision shall become final and binding upon the Employer and the Contractor.

50.3 Where notice of intention to commence arbitration as to a dispute has been given in accordance with Sub-Clause 50.2, arbitration of such dispute shall not be commenced unless an attempt has first been made by the parties to settle such dispute amicably through mutual negotiation within ninety (90) days from the date of notification of Project Management Consultant's decision.

50.4 Any dispute in respect of which:

- (a) the decision, if any, of the Engineer has not become final and binding pursuant to Sub-Clause 50.1 and
- (b) amicable settlement has not been started/reached within the period stated in Sub-Clause 50.3

shall be finally settled, unless otherwise specified in the Contract, under the Rules of Pakistan Arbitration Act, 1940 (Act No. X of 1940) and Rules made thereunder as amended, by one or more arbitrators appointed under such Rules.

The said arbitrator(s) shall have full power to open up, review and revise any decision, opinion, instruction, determination, certification or valuation of the Engineer for the purpose of obtaining said decision pursuant to Sub-Clause 50.1. No such decision shall disqualify the Engineer from being called as a witness and giving evidence before the arbitrator(s) on any matter whatsoever relevant to the dispute.

The venue of arbitration proceedings shall be the place in Pakistan as mentioned in the Preamble to Conditions of Contract.

50.5 Where neither the Employer nor the Contractor has given notice of intention to commence arbitration of a dispute within the period stated in Sub-Clause 50.1 or 50.2 and the related decision has become final and binding, either party may, if the other party fails to comply with such decision, and without prejudice to any other rights it may have, refer the failure to arbitration in accordance with Sub-Clause 50.4. The provisions of Sub-Clauses 50.1 to 50.2 shall not apply to any such reference.

## **Additional Conditions**

### **52. Liens**

Each contractor, for himself and for any persons directly or indirectly responsible to him, and for his or their material, equipment and employees, and for all other persons performing any labor or furnishing any labor or material for any/or all of the Work covered by his Contract, will be required to release or waive, to the full extent permitted by law, all mechanical and other liens, for or on account of the Work done or equipment and material furnished hereunder and the improvements or structures herein same may be incorporated, and the land to which they are appurtenant shall at all times be free and clear of all such liens

#### **52.1 Payment of Income Tax, Etc.**

The Contractor shall be responsible for the payment, if any is required, of all Pakistani Income Tax, Super Tax, and other taxes on income arising out of the Contract, and the rates and prices stated in the priced Schedule of Prices shall be deemed to cover all such taxes.

#### **52.2 Personnel, Taxes and Duties**

The Contractor or his personnel shall pay all personal income tax or other taxes due in Pakistan, if any, for the personnel employed by the Contractor for implementing the work or any other activity required by the Contract. The Contractor shall obtain, at his own cost, work permits from competent authorities to enable any foreign personnel to work in Pakistan. The Contractor shall be responsible for all formalities in connection with passports, obtaining visas, police permits and expenses for customs duties, if any, related to personal goods of foreign personnel employed on the Project. However, the Employer will, if requested, assist the Contractor in obtaining visas and work permits.

#### **52.3 Income Taxes Provisions in Subcontracts**

Provisions to the like effect as those contained in this Clause shall be incorporated in Subcontracts.

### **53 Liability of the 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 permitted assigns and the Labour employed by them.

### **54 Joint and Several Liability**

The Contractor is a joint venture of two or more firms, 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 during currency of the Contract.

### **55 Details to be Confidential**

The Contractor shall treat the details of the Contract as private and confidential, save insofar 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.

## **STANDARD FORMS**

Standard Forms include the following:

- Form of Bid Security  
(Bank Guarantee)
- Form of Contract Agreement
- Form of Performance Security  
(Bank Guarantee/ Insurance Bond)
- Form of Bank Guarantee for Advance Payment

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

Guarantee No. \_\_\_\_\_  
Executed on \_\_\_\_\_  
Expiry date \_\_\_\_\_

Name of Guarantor (Bank) with address: \_\_\_\_\_

Name of Principal (Bidder) with address: \_\_\_\_\_  
\_\_\_\_\_

Penal Sum of Security (express in words and figures): \_\_\_\_\_  
\_\_\_\_\_

Bid Reference No. \_\_\_\_\_ Date of Bid Opening \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bid 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 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 Principal has submitted the accompanying Bid numbered dated as above for \_\_\_\_\_ (Particulars of Bid) to the said Employer; and

WHEREAS, the Employer has required as a condition for considering the said Bid that the Principal furnishes a Bid Security in the above said sum to the Employer, conditioned as under:

- (1) that the Bid Security shall remain valid for a period 28 days beyond the period of validity of the Bid,
- (2) that in the event of;
  - (a) the Principal withdraws his Bid during the period of validity of Bid, or
  - (b) the Principal does not accept the correction of his Bid Price, pursuant to Sub-Clause 24.2 of Instructions to Bidders, or
  - (c) failure of the successful Bidder to
    - (i) furnish the required Performance Security, in accordance with Clause 34 of Instructions to Bidders, or
    - (ii) sign the proposed Contract Agreement, in accordance with Clause 35 of Instructions to Bidders,

then the entire sum be paid immediately to the said Employer as liquidated damages and not as penalty 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 Guarantor shall forthwith pay to the Employer the said sum stated above 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 Guarantor at its address given above.

PROVIDED ALSO THAT the Employer shall be the sole and final judge for deciding whether the Principal 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 Guarantor shall pay without objection the sum 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 the instrument under its seal on the date indicated above, the name and seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

\_\_\_\_\_  
Guarantor (Bank)

Witness:

Signature \_\_\_\_\_

1. \_\_\_\_\_

Name \_\_\_\_\_

\_\_\_\_\_  
Corporate Secretary (Seal)

Title \_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
(Name, Title & Address)

\_\_\_\_\_  
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 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 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) The Preamble to Conditions of Contract
  - (e) The Particular Conditions of Contract
  - (f) The General Conditions of Contract
  - (g) The priced Schedule of Prices
  - (h) The completed Schedules to Bid (A to L)
  - (i) The Specifications
  - (j) The Drawings
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)

**FORM OF PERFORMANCE SECURITY  
(Bank Guarantee/ Insurance Bond)**

Guarantee No. \_\_\_\_\_  
Executed on \_\_\_\_\_  
Expiry date \_\_\_\_\_

Name of Guarantor (Bank/Approved Insurance Company) 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 \_\_\_\_\_ (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 30, 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 defenses 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.

	_____
	Guarantor (Bank/Approved Insurance Co.)
Witness:	
1. _____	Signature _____
_____	Name _____
Corporate Secretary (Seal)	Title _____
2. _____	
_____	_____
Name, Title & Address	Corporate Guarantor (Seal)

## FORM OF BANK GUARANTEE FOR ADVANCE PAYMENT

Guarantee No. \_\_\_\_\_  
Executed on \_\_\_\_\_  
Expiry date \_\_\_\_\_

WHEREAS the \_\_\_\_\_ (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 \_\_\_\_\_ (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 advance payment for performance of his obligations under the said Contract.

AND WHEREAS \_\_\_\_\_ (Bank) (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 fulfillment 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, as aforesaid, 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 come into force as soon as the advance payment has been credited to the account of the Contractor.

This guarantee shall expire not later than \_\_\_\_\_  
by which date we must have received any claims by registered letter, telegram, telex or telefax.

It is understood that you will return this Guarantee to us on expiry or after settlement of the total amount to be claimed hereunder.

Witness:

1. \_\_\_\_\_  
\_\_\_\_\_  
Corporate Secretary (Seal)

2. \_\_\_\_\_  
\_\_\_\_\_  
Name, Title & Address

\_\_\_\_\_  
Guarantor (Bank)

Signature \_\_\_\_\_  
Name \_\_\_\_\_

Title \_\_\_\_\_

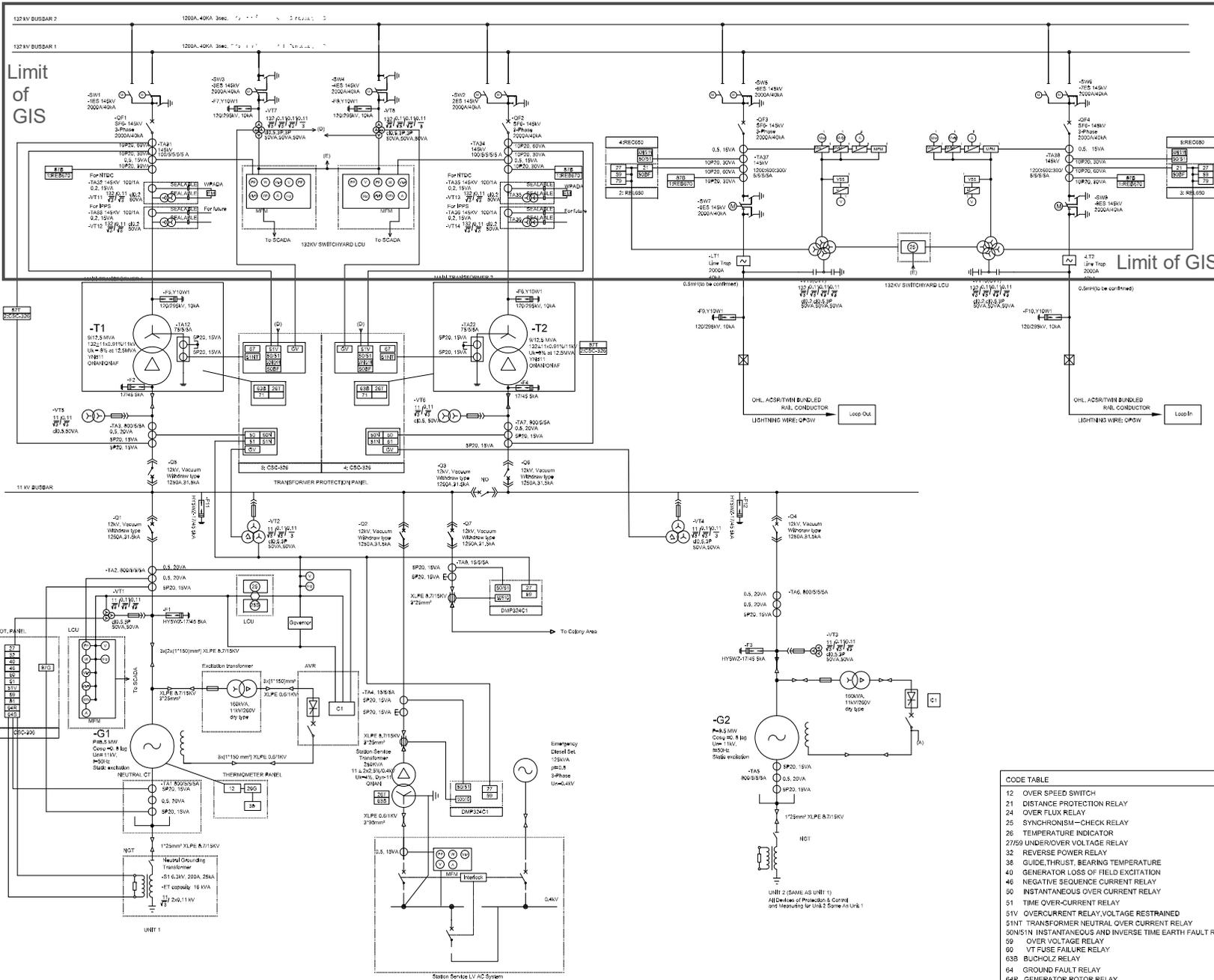
\_\_\_\_\_  
Corporate Guarantor (Seal)

**DRAWING**

# 132 KV Gas Insulated Substation (GIS)

Note: Protection Relays shown are not included.

Limit of GIS



**NOTES:**  
 1. For Control, Protection and Parameter T/G unit No.2 system same as unit No.1

LEGEND	
SYMBOL	DESCRIPTION
	SF6 CIRCUIT BREAKER (OF)
	CIRCUIT BREAKER (C)
	ISOLATOR WITH SINGLE EARTHING SWITCH (SWES)
	ISOLATOR WITH DOUBLE EARTHING SWITCH (SWIES)
	VOLTAGE TRANSFORMER (VT)
	CURRENT TRANSFORMER (TA)
	LIGHTNING ARRESTER (F)
	LINE TRAP (LT)
	GANTRY
	CAPACITOR VOLTAGE TRANSFORMER (CVT)
	CABLE WITH TERMINATIONS
	MULTIFUNCTION METER
	NORMAL OPEN
	SPARE
	0.2 CLASS EMERGENCY METER
	Mv TRANSDUCER
	Mvar TRANSDUCER
	VOLTAGE TRANSDUCER
	CURRENT TRANSDUCER
	VOLTAGE SELECTOR SWITCH

ISSUED FOR APPROVAL

LEVEL 1

REV	DATE	DESCRIPTION	PREP'D	CHKD	APPD
10	10-10-13	REVISED AS PER NTDC COMMENTS	Chen jian	Li xiaoli	Yan yongqiang
9	25-07-13	REVISED AS PER MC REQUIREMENTS	Chen jian	Li xiaoli	Yan yongqiang
8	18-06-13	REVISED AS PER CLIENT REQUIREMENTS	Chen jian	Li xiaoli	Yan yongqiang
7	31-01-13	REVISED AS PER NTDC COMMENTS	Chen jian	Li xiaoli	Yan yongqiang
6	18-12-12	REVISED AS PER NTDC COMMENTS	Chen jian	Li xiaoli	Yan yongqiang
5	08-06-12	ISSUED FOR APPROVAL			
4	17-05-12	ISSUED FOR APPROVAL			
3	26-04-12	ISSUED FOR APPROVAL			
2	12-04-12	ISSUED FOR APPROVAL			
1	30-03-12	ISSUED FOR APPROVAL			

CODE TABLE	
12	OVER SPEED SWITCH
21	DISTANCE PROTECTION RELAY
24	OVER FLUX RELAY
25	SYNCHRONISM CHECK RELAY
26	TEMPERATURE INDICATOR
27/50	UNDER/OVER VOLTAGE RELAY
32	REVERSE POWER RELAY
38	GUIDE,THRUST, BEARING TEMPERATURE
40	GENERATOR LOSS OF FIELD EXCITATION
46	NEGATIVE SEQUENCE CURRENT RELAY
50	INSTANTANEOUS OVER CURRENT RELAY
51	TIME OVER-CURRENT RELAY
51T	TRANSFORMER NEUTRAL OVER CURRENT RELAY
50S/N	INSTANTANEOUS AND INVERSE TIME EARTH FAULT RELAY
59	OVER VOLTAGE RELAY
60	VT FUSE FAILURE RELAY
63B	BUCHHOLZ RELAY
64	GROUND FAULT RELAY
64R	GENERATOR ROTOR RELAY
64S	STATOR EARTH FAULT RELAY
67	POWER DIRECTIONAL RELAY
71	TRANSFORMER OIL LEVEL
79	RE-CLOSING
81	FREQUENCY RELAY
87G	GENERATOR DIFFERENTIAL RELAY
87T	TRANSFORMER DIFFERENTIAL RELAY
87B	BUSBAR DIFFERENTIAL RELAY
CV	GROUND VOLTAGE CHECK RELAY

**OWNER**  
  
**SARHAD HYDEL DEVELOPMENT ORGANIZATION**  
 Government of K.P.K Peshawar

**CONTRACTOR:**  
  
**DESCON - TRIED CONSORTIUM**

**PROJECT TITLE:**  
**RANOLIA HYDRO POWER PROJECT**

**TITLE:**  
**MAIN SINGLE LINE DIAGRAM**

DATE	SCALE	DRAWING NUMBER	SHEET NO.	REV.
10-10-2015	1:XX	RHP-E00-001	1 OF 1	10

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Declaration: 1. Transmission Line system stability and reliability should be responsibility of National Grid.  
 2. Descon-Tried Consortium are only responsible for the control and protection and measurement of the 132KV busbar, the main transformers and the main plant equipments in our Switchyard.