



**GOVERNMENT OF THE PUNJAB
ENERGY DEPARTMENT**

PUNJAB POWER DEVELOPMENT COMPANY LIMITED (PPDCL)

BIDDING DOCUMENTS

(Single Stage Two Envelope Bidding Procedure)

**MODIFICATION OF TRASH COLLECTION AND DIVERSION
MECHANISM**

AT

**2.82 MW PAKPATTAN HYDROPOWER PLANT
DISTRICT PAKPATTAN, PUNJAB, PAKISTAN**



June, 2021

PUNJAB POWER DEVELOPMENT COMPANY LIMITED (PPDCL)

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DISCLAIMER

This document is provided to the recipient solely for use in preparing and submitting bids for the modifications in Trash Collection Mechanism at 2.82 MW Pakpattan Hydropower Plant. The Request for Proposal (RFP) is being issued by the PPDCL solely for use by prospective bidders in considering the Project.

Neither PPDCL, nor their employees make any representation (expressed or implied) or warranties as to the accuracy or completeness of the information contained herein, or in other document made available to a person in connection with the tender process for the Project and shall have no liability for this Document or for any other written or oral communication transmitted to the recipient in the course of the recipient's evaluation of the Bid. Neither PPDCL, nor their representatives will be liable to reimburse or compensate the recipient for any costs nor expenses incurred by the recipient in evaluating or acting upon this Document or otherwise in connection with the Project as contemplated herein.

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INVITATION FOR BIDS

INVITATION FOR BIDS

Date: _____

Bid Reference No.: _____

1. Energy Department of Government of the Punjab received a loan from the ADB under Renewable Energy Development Sector Investment Program (REDSIP) towards the cost of setting up four (04) small hydro projects on canal falls. As per loan covenant, these projects are being implemented by Punjab Power Management Unit (PPMU) whereas EPC of the project will be carried out by Punjab Power development Company limited PPDCL- a corporate entity under the Energy Department. Pakpattan Hydropower has been running on commercial operation since February 2017.
2. PPDCL is desirous of the comprehensive proposal for modifications in existing Trash Collection Mechanism at 2.82 MW Pakpattan Hydropower Plant by using single stage two envelop procedure under PPRA Rules 2014 from eligible firms or persons licensed by the Pakistan Engineering Council in the appropriate category for the Works. A foreign bidder is entitled to bid only in a joint venture with a Pakistani Contractor in accordance with the provisions of PEC bye-laws.
3. The Technical Proposal to be submitted by the bidder shall include but not limited to the following prescribed formats;
 - (i) Form of Technical Bid (Letter of Offer)
 - (ii) (TECH-1 TO TECH-VI)
 - (iii) Schedule – A To Bid Specific Works Data
 - (iv) Schedule – B To Bid Proposed Organization For The Project
 - (v) Schedule – C To Bid Method Of Performing The Works
 - (vi) Schedule – D To Bid Proposed Programme Of Works
 - (vii) Schedule – E To Bid Work To Be Performed By Subcontractors
 - (viii) Schedule – F-1 To Bid Deviations From Technical Provisions
 - (ix) Schedule – F-2 To Bid Deviations From Contractual Conditions
 - (x) Schedule – G To Bid Specific Plant And Equipment Detail
 - (xi) Schedule –H To Bid JV Agreement
 - (xii) Schedule –I To Bid Past Performance & Present Commitments
 - (xiii) Bid Security
4. The Financial Proposal to be submitted by the bidder shall include but not limited to the following prescribed formats;
 - (i) Form of Financial Bid (Letter of Offer).
 - (ii) Schedule J to Bid: Integrity Pact
 - (iii) Schedule K to Bid: Estimated Progress Payments
 - (iv) Schedule L to Bid: Lump Sum Cost Breakdown for Major Cost Items
 - (v) Schedules of Prices
 - Schedule No.1- Design Services
 - Schedule No.2- Civil Works, Installation and Other Services
 - Schedule No.3- Supply of Plant (E&M Works) (Pre Engineered Structures) including Fixtures and other materials & goods
 - Schedule No.4- Grand Summary of Bid Prices

Bidding Documents

5. Bidders may obtain further information from, inspect at and acquire the Bidding Documents from the Office of the Chief Executive officer at 3rd floor, Mega Tower, 63-B Main Boulevard Gulberg II Lahore.
6. A complete set of Bidding Documents may be purchased by an interested Bidder on submission of a written application to the above office and upon payment of a non-refundable fee of Rs. 2,000 /- in the shape of draft/pay order in favor of PPDCL.
7. EPC Cost of Project on Turnkey basis is estimated as Pak. Rs. 6 million. All bids must be accompanied by a Bid Security in the amount of Rs. 275,000 (Rupees two hundred thousand) or an equivalent amount in US \$, and must be delivered to Office of Punjab Power Development Company (PPDCL), 3rd Floor, Mega Tower, 63-B Main Boulevard, Gulberg II Lahore at or before the date and time mentioned below.
8. Bids shall be received up to **11:00 hours** on **15-07-2021**.
9. Bids will be opened at **11:30 hours** on the same day, in the presence of bidders' representatives who choose to attend at the same address.

Punjab Power Development Company Ltd.
3rd Floor, Mega Tower,
63-B Main Boulevard, Gulberg II Lahore

**INSTRUCTIONS
TO
BIDDERS & APPENDICES**

INSTRUCTIONS TO BIDDERS AND APPENDICES

(A) GENERAL

IB.1 Scope of Bid and Source of Funds

1.1 SCOPE OF BID

Chief Executive Officer, Punjab Power Development Company (PPDCL) (hereinafter called “the Employer”) wishes to receive bids for the following scope of works/services:

“Modification of existing Trash Collection Mechanism(s) at 2.82 MW Pakpattan Hydropower plant “

The Works to be executed under this Contract comprise Design, Construction, Manufacturing, Supply and Installation on EPC/Turnkey basis. The successful Bidder will be expected to complete the Works within the stipulated period of **60 days** as specified in these Bidding Documents.

Bidders must quote for the complete scope of works/Services. Any bid covering partial scope of work/services will be rejected as non-responsive, pursuant to Clause IB.24.

1.2 SOURCE OF FUNDS

The Employer has funded the project through its own resources. PPDCL will bear the cost of modification of existing Trash Collection Mechanism(s) services out of revenue accruing from sale of energy to the Power Purchaser in accordance with the provisions of tariff already determined by NEPRA.

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 appropriate Category (C6 or above) for the works
- b) Foreign Bidders from eligible countries as per Appendix ‘A’ to Instructions to Bidders, Duly licensed by the Pakistan Engineering Council (PEC) in appropriate Category (FC-1 or above) for the works. A foreign bidder is entitled to bid only in a joint venture with a Pakistani Contractor in accordance with the provisions of PEC bye-laws/Registration policy.

IB.3 Eligible 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 respective 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:
 - (i) Schedule A: Specific Works data
 - (ii) Schedule B: Proposed Organization for the Project
 - (iii) Schedule C: Method of Performing Works
 - (iv) Schedule D: Proposed Programme of Works
 - (v) Schedule E: Work to be Performed by Subcontractors
 - (vi) Schedule F: Deviations from Technical & Contractual Provisions
 - (vii) Schedule G: Specific Operation/Plant and Equipment Details
 - (viii) Schedule H: Specimen JV Agreement
 - (ix) Schedule I: Past Performance and Present Commitments
3. Letter of Price Bid & Schedules to Bid
Schedules to Bid are the following:
 - (i) Schedule J: Integrity Pact
 - (ii) Schedule K: Estimated Progress Payments
 - (iii) Schedule L: Lump Sum Cost Breakup for Major Cost Items
4. Schedule of Prices
5. Preamble to Conditions of Contract
6. General Conditions of Contract (GCC)
7. Particular Conditions of Contract (PCC)
8. Standard Forms
Forms include the following:

- (i) Form of Bid Security
 - (ii) Form of Contract Agreement
 - (iii) Form of Performance Security
 - (iv) Form of Bank Guarantee for Advance Payment
 - 9. Specifications - Technical Provisions
 - 10. Drawings
- 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 PPDCL with a copy to General Manager Procurement & Contracts in writing or by fax at the address as provided under Sub-Clause 49.2 of GCC. 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, shall be written in the English language, provided that any printed literature furnished by the Bidder may be written in another language as 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.
- (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.
- (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:

- (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.
- 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.

12.3 The currencies of payment shall be as stated in Particular Conditions of Contract.

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, the Bidder is 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:
- i. has completed at least one (1) Project during the last five years.
 - ii. has completed at least one (1) EPC Contract during the last ten years
 - iii. has designed, constructed, supplied and installed at least one (1) similar facility of Rs. 5 Million or more during the last ten years.
 - iv. Only those Bidder/Manufacturer are expected to participate who can provide owned, rented or leased specific equipment/tools/machines specified in the Bidding Documents for satisfactory performance of any specialized job as required under the Contract.

Documentation regarding the Bidder's experience on previous similar contracts must accompany with each Bid.

Bidder shall also submit proof of their financial capability to undertake the Contract.

In the event that the successful Bidder is a joint venture formed of two or more companies, the Employer requires that the parties to the joint venture accept joint and several liabilities for all obligations under the Contract.

Bidders 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 three years equal to or more than Rs. 15 Million. Alternately, the Bidder should have successfully completed in the last five (5) years any specific project having value equal to or

higher than Rs. 15 Million.

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 and shall meet the eligibility requirement of Sub-Clause 2.1 hereof.
- (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 (Refer Schedule - H).

- 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 Plant and Services which Bidder proposes to perform under the Contract.
- 14.2 The documentary evidence of the Plant 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 Plant 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 Plant, 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. Drawings and data submitted must be in sufficient detail and clarity to permit the Employer to verify compliance with the provisions of the Bidding Documents. This will include but not be limited to the following:
 - (i) A sufficient number of drawings, diagrams, photographs, catalogues, illustrations and such other information as are necessary to illustrate clearly the significant characteristics such as general construction dimensions and other relevant information about the Plant to be furnished.
 - (ii) The approximate weight and dimension of the main components, a brief description of the principal materials and fabrication processes to be used and recommended methods of assembly.
 - (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 Plant's and Service's substantial responsiveness to those Specifications or a statement of deviations and exceptions to the provisions of the Technical Provisions as required in Schedule F 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, 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 Employer'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 in the amount as indicated in the Data Sheet.
- 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.
- 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;
 - (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 a period as indicated in the Data Sheet after the date of bid opening.
- 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 The Proposal shall comprise of two envelopes. Envelope-I of the Proposal shall contain the Capability and Technical aspects of the Bidder. Envelope-II of the Proposal shall contain Bidder's Proposal Price for a period as indicated in the Data Sheet.
- 17.2 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.
- 17.3 All Appendices to Bid and appendices to IB are to be properly completed and signed.
- 17.4 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.
- 17.5 Each Bidder shall prepare one (1) Original and two **(02) 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.
- 17.6 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.

- 17.7 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.
- 17.8 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.
- 17.9 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. The envelope marked as ORIGINAL will contain Original Copies of Technical and financial proposal each sealed in separate envelopes. Whereas the envelopes marked as 'copy' will contain only copy of Technical proposal.
 - (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 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. 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 as per criteria prescribed in Clause IB. 26.2 to attend opening of the Price Bids.

The Bidders' representatives who are present shall sign in a register evidencing their attendance.

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. Any discount offered by the Bidder on its quoted prices, shall only be considered if such discount is either shown on the duly filled-in, signed and stamped Form of Bid/Letter of price bid or on the Summary Page of the quoted amount for Lump sum contract/bill of quantities as applicable. In case of any discrepancy or difference in the rate or amount of discount mentioned in the Form of Bid/Letter of price bid (as duly filled-in and signed), and on the Summary Page of the Priced BOQ, the discount shown on the Priced BOQ shall prevail. Discount, if offered, through a separate letter of discount submitted with the Bid, will not be entertained and shall be considered null & void."

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 Employer 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, the Employer will determine the responsiveness of the Bids as follows:

- (a) the Employer 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, and
 - (vii) Alteration in Form of Bid as per IB.17.3.
- (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.

It is after review and determination of the responsiveness as per above that further action on technical evaluation will be taken.

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 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 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 determination of a Bid responsiveness will be based on the contents of the Bid itself without recourse to extrinsic 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 The Bidder 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.

IB.26 Detailed Evaluation of Bids

- 26.1 Only the Bids previously determined to be substantially responsive pursuant to Clause IB.24 will be evaluated and compared in detail by the Employer as per the requirements given hereunder:

26.2 Evaluation and Comparison of Bids

- (a) Bids will be evaluated for each item and/or complete scope of work.
- (b) Basis of Price Comparison

The prices will be compared on the basis of the Evaluated Bid Price pursuant to Para (e) herein below.

- (c) Technical Evaluation
 - (i) It will be examined in detail whether the Plant/facility offered by the Bidder comply with the Technical Provisions of the Bidding Documents. For this purpose, design offered by the Bidder will be reviewed for which the Bidder's data submitted with the Bid under Schedule A to Bid (Specific Works Data) will be compared with the technical features/criteria of the Plant/facility detailed and prescribed by the Employer in these documents. Other technical information submitted with the Bid regarding the Scope of

Work will also be reviewed including importations, if any, required.

(ii) The criteria for evaluation of technical bid shall be as per following details:

Sr. No.	Screening for Technical Evaluation of various parameters		Minimum threshold/ Knock out Criteria	Pass/Fail
i	Experience	General Experience of the firm as per schedule I/ TECH – III: Bidder Experience (i)/ as per IB 13.4 (a) (i)	<i>Has completed at least one (01) Project/assignment during last five (05) years</i>	
		General Experience of the firm as per schedule I/ TECH – III: Bidder Experience (ii)	<i>Has successfully executed at least one (01) EPC contract during last ten (10) years</i>	
ii	Competence	Design capacity as per IB 13.4 (a) (ii)/ Relevant Experience of the firm as per schedule I/ TECH – III: Bidder Experience (iii)	<i>Has designed , constructed , supplied and installed at least one similar facility with a minimum value of Rs. 5 Million during the last ten (10) years</i>	
		Construction Schedule /Work methodology / Resource scheduling plan/ as per schedule B,C and D	<i>Must meet Requirement to comply with Technical Specifications</i>	
		Available Resources i.e. Equipment and Key Personnel as per schedule G & TECH-V	<i>Must meet Requirement as per Schedule G and TECH-V</i>	
iii	performance	Past performance as per schedule I	<i>Successfully completed projects</i>	
iv	Financial	Financial soundness as per IB 13.4 (b)	<i>Minimum Average Annual Turnover in last 03 Years = 15 Million. The Lead Partner must meet 50% while Other JV partner must meet 25 % or above of the requirement. Alternately, the Bidder should have successfully completed in the last five (5) years any specific project having value equal to or higher than Rs. 15 Million.</i>	

(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 Lump Sum 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 in the financial evaluation:

- (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 average 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 Employer.

- (iii) Price Adjustment for Commercial Compliance

The cost of making good any deficiency resulting from any quantifiable acceptable variations and deviations from the Bid Schedules and Conditions of Contract, as determined by the Employer 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 mark-up rate of 8 % per annum 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.

Bids indicating completion beyond 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

- 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 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.
- 27.7 The computation for the purpose of domestic preference under Sub-Clause IB 10.2 and Clause IB 27 and award of contract shall subject to change, if any, as per policy of the Federal Government as applicable on the date of bid opening.

IB.28 Process to be Confidential

- 28.1 Subject to Clause 23 heretofore, no Bidder shall contact Employer 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 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 ten (10) 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, is technically qualified 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.

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 or Clause IB.44 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/Sales Tax to the concerned Commissioner of the Income Tax and Sales Tax, Lahore.
- (b) Inquiries on customs duties and other import taxes, to the concerned authorities of Customs Department, Government of Pakistan.
- (c) Inquiries on the Sales Tax on Services to the Punjab Revenue Authority, Lahore.
- (d) Information regarding port clearance facilities, loading and unloading facilities, storage facilities, transportation facilities and congestion at Pakistan seaports.
- (e) Investigations regarding transport conditions and the probable conditions which will exist at the time the Goods will be actually transported.

IB.41 Alternate Proposals by Bidder

- 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.
- 42.2 All Bidders are required to visit the site at their own expense to review the areas allocated for the Plant and the interfacing facilities, if any. Bidders may also wish to study local conditions, available facilities, communications, craft wages, roads and other transport facilities. Bidders shall also acquaint themselves with the relevant laws, rules, and regulations of Pakistan.
- 42.3 The Bidders and any of their personnel or agents will be granted permission by the Employer to enter upon his premises and lands for the purpose of such inspection, but only upon the express condition that the Bidders, their personnel and agents, will release and indemnify the Employer, his personnel and agents from and against all liability in respect thereof and will be responsible for death or personal injury, loss of or damage to property and any other loss, damage, costs and expenses incurred as a result of such inspection.

IB.43 Pre-Bid Meeting

- 43.1 The Employer may, at his own or at the request of any prospective Bidder(s), hold a Pre-Bid meeting to clarify issues and to answer any questions on matters related to the Bidding Documents. The date, time and venue of Pre-Bid meeting, if convened, shall be as provided in the Data Sheet. All prospective Bidders or their authorized representatives shall be invited to attend such a Pre-Bid meeting.

IB.44 Integrity Pact

- 44.1 The Bidder shall sign and stamp the Integrity Pact provided in Schedule-J 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.

IB.45 General Performance of the Bidders

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

DATA SHEET

A. General	
IB Clause Reference	
Invitation to Bid	<p>Bids shall be received up to 11:00 hours on 15-07-2021.</p> <p>Bids will be opened at 11:30 hours on the same day, in the presence of bidders' representatives who choose to attend the meeting at the following address:</p> <p>Chief Executive Officer, Punjab Power Development Company Ltd. 3rd Floor, Mega Tower, 63-B Main Boulevard, Gulberg II Lahore</p>
Bidding Document	
6.1	<p>The words "twenty eight (28)" shall be replaced with words "seven (07)" while word "fourteen days (14)" shall be replaced with "three (03)"</p> <p>The contact office for requesting clarifications is:</p> <p>Chief Executive Officer, Punjab Power Development Company Limited, 3rd Floor, Mega Tower, 63-B Main Boulevard, Gulberg II Lahore Tel: +92-42-99332153-56 Fax: +92-42-99332157</p> <p>Email: ppdcl.dmm@energy.punjab.gov.pk</p> <p>Clarification(s) may be notified in writing or email at the address as provided.</p>
Preparation of Bid	
8	Bid shall be written in the English language. If any document is submitted in other language it will be translated in English and an attested copy of the same shall be provided.
12	<p>The Financial Proposal shall be stated in the following currencies:</p> <p>The Financial Proposal shall state costs in the Employer's country currency (local currency): Pak. Rupee (PKR)</p>
13.3 a	The bidder shall submit the documentary evidence of the Goods and Services' in the form of literature, drawings and data etc. supplied by the manufacturer to substantiate that the manufacturer has been producing parts and is capable to produce parts for Pakpattan hydropower plant and that the manufacturer has supplied such equipment/parts which are working successfully.
15.1	Each Bidder shall furnish, as part of his bid, a Bid Security in the amount of Pak. Rupees 275,000/- (Pak. Rupees Two hundred and seventy five thousand only) or an equivalent amount in a freely convertible currency.
15.2	The Bid Security shall be, at the option of the Bidder, in the form of Deposit at Call

	or a Bank Guarantee issued by a Scheduled Bank in Pakistan or from a foreign bank duly counter-guaranteed by a Scheduled Bank in Pakistan in favour of PPDCL valid for a period twenty eight (28) days beyond the bid validity date.
16.1	Proposals must remain valid for: One hundred twenty (120) days.
16.2	The words “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).” shall stand deleted.
17.1	Financial Proposal shall contain Bidder’s Proposal Price on Lump Sum basis to perform complete Scope of Works for a period of two (2) months.
17.5	Each Bidder shall prepare one (1) Original and two (02) Copies, of the technical bid and clearly mark them “ORIGINAL” and ‘COPY” as appropriate, however one original financial bid shall be submitted.
Submission of Bid	
18	<p>Financial Proposal to be submitted together with Technical Proposal: Yes (In separate sealed Envelope) The bidder must submit:</p> <p>(a) Technical Proposal: one (1) original and two (2) copies;</p> <p>(b) Financial Proposal: one (1) original.</p> <p>The Proposal submission address is:</p> <p style="padding-left: 40px;">Chief Executive Officer, Punjab Power Development Company Limited, 3rd Floor, Mega Tower, 63-B Main Boulevard, Gulberg II Lahore</p> <p>Tel: +92-42-99332153-56 Fax: +92-42-99332157</p>
Bid Opening and Evaluation	
25	<p>The single currency for the conversion of all prices expressed in various currencies into a single one is: PKR</p> <p>The official source of the selling (exchange) rate is : State Bank of Pakistan</p> <p>The date of the exchange rate: Seven (07) days prior to deadline for submission of proposal</p>
Additional Conditions	
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 fourteen (14) days after the receipt of Notification of Award/Letter of Acceptance. Performance Security shall be valid 28 days beyond Defect Liability Period that is 365 days after the date certified in the Taking-Over Certificate or any extension thereof.
40	It shall be the responsibility of the Bidder to obtain the information from Federal Bureau of Revenue (FBR) of Pakistan/Sea ports/transportation etc. and Punjab

	Revenue Employer or any other government agency regarding details of applicable taxes and duties.
41	Alternate proposal shall not be accepted
43	Pre-bid conference A Pre-Bid meeting shall be held on 05-07-2021 at 03:00 Hours in the office of Punjab Power Development Company Ltd at 3 rd Floor, Mega Tower,63-B Main Boulevard, Gulberg II Lahore.

(H) APPENDICES TO INSTRUCTIONS TO BIDDERS

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-D: Determination of Responsiveness.

Appendices are given below:

Appendix A to Instructions to Bidders

NAME OF ELIGIBLE COUNTRIES

All countries with which Pakistan entertains Commercial relationship are eligible countries, as notified eligible by Government of Pakistan GoP.

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.	
2	Type of firm whether individually owned, partnership, corporation or joint venture and the names of its owners or partners.	
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 three (3) years. Audited Balance Sheets for the preceding three (3) years shall be provided. Projected assets and liabilities for the next two (2) years may be provided.</p> <ul style="list-style-type: none"> i. Total value of works in hand on bid opening/preparation date. ii. Total value of works completed in last three years. 	
4	<ul style="list-style-type: none"> (a) Has completed at least one (1) Project during the last five years. (b) Has completed at least one (1) EPC Contract during the last ten years. (c) Has designed, supplied and installed at least one (1) similar facility with a min.value of Rs. 5 Million during the last ten years 	
5	Location and address of manufacturing facilities as applicable.	
6	Full description of factories owned and the annual manufacturing capacities of various items made therein.	
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.	
8	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.	
9	Names, qualifications and experience of the key technical personnel along with Resumes. i. Nos. of total permanent Staff on roll of the company. ii. Nos. of total qualified engineers on roll of the company.	
10	The time since the manufacturer has been in this business and the time since he has been doing work of similar nature.	
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).	
12	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)	
13	Details of projects under execution and future contractual commitments (for each partner, in case of a joint venture).	
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.	
15	Health, Safety and emergency plan as well as Risk Management plan for the project.	
16	Detailed/ Integrated work plan along with methodology to complete the assignment.	
17	Training and Employment plan of local work force for which contractor is to at least have a budget of Rs 30,000/- for incurring expenditures on arranging such trainings for Employer staff who are to maintain and operate the facility after construction. This is not reimbursable and contractor has to consider this amount included in his overheads.	
18	Information on any litigation or arbitration resulting from contracts completed or under execution by the Bidder over the last ten (10) 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).	

Appendix C to Instructions to Bidders

Domestic Goods (Value added in Pakistan)

Bidders claiming eligibility for domestic preference should fill in for supply items only, all columns hereunder and provide necessary documentation to substantiate their claim.

Sr. No.	Description of Indigenous Goods	Unit	Qty	Total Price of Goods Ex-Factory (Pak Rs.)	Domestic value added in the manufacturing cost as percentage of Ex-Factory Price	Amount of value addition (Pak Rs.)
1	2	3	4	5	6	7
Total in columns 5 & 7						

Computations:

- | | |
|--|-------------|
| A. Total amount of Value Addition (from Col.7) | Rs_____ |
| B. Total Ex-Factory Price of Indigenous Goods (from Col.5) | Rs_____ |
| C. Total DDP Price of imported supply items | Eqv.Rs_____ |
| D. Total Price of supply items [B+C] | Eqv.Rs_____ |
| E. % of value addition = [(A/D)x100] | _____% |
| F. Domestic Preference =(15,20 or 25)% of B | Rs_____ |

DETERMINATION OF RESPONSIVENESS

This Appendix enlists the procedure to determine responsiveness of bid. For a bid to be substantially responsive, the answers to all the questions in the following table should be YES:

Sr.	Responsiveness Measure	Yes	No	Remarks
1	Has the Proposal contained in sealed Envelope for technical and financial proposal?			
2	Has the Bidder submitted complete Proposal and does not have material deviation in conformity to Bidding			
3	Have the documents been properly signed?			
4	Form of Bid (Technical/Financial) provided?			
5	Is the validity date of proposal in accordance with that required?			
6	Bidder Information (TECH-I)			
7	Power of Attorney (TECH-II)			
8	Bidder's Experience – General & Relevant (TECH-III)			
9	Evidence of Bidder's Financial Capability (TECH-IV)			
10	Bidder's Proposed Key Personnel (TECH-V)			
11	Bidder's Equipment Capabilities(TECH-VI)			
12	Bidder's Methodology for EPC Services (Appendices D to Bid)			
13	Form of Bid Security			
14	Is the form issued by the Bank not materially different from that required in IB.15?			
15	Is the amount of proposal security in accordance with that prescribed?			
16	Is the issuing Bank a Scheduled Bank of Pakistan?			
17	Is the validity of Bid Security in accordance with IB 15.2			
18	Does bidder comply with IB 2, IB 9 and IB13			
19	The Bidder has not participated in more than one bid.			
20	Litigation History provided (if any)			
21	Registration with SECP or Registrar of firms			
22	National Tax Number			
23	Audited financial statement of Account			
24	Forming of JV/Consortium Document (MOU or Agreement)			
25	Affidavit on stamp paper that firm is not blacklisted by any Government Agency or any autonomous body			

SECTION-3

LETTER OF TECHNICAL BID

AND

SCHEDULES TO BID

LETTER OF TECHNICAL BID
AND
SCHEDULES TO BID

Form of Technical Bid (ENVELOPE – I)

Schedules to Bid

- Schedule A to Bid: Specific Works Data
- Schedule B to Bid: Proposed Organization for the Project
- Schedule C to Bid: Method of Performing Works
- Schedule D to Bid: Proposed Programme of Works
- Schedule E to Bid: Works to be Performed by Subcontractors
- Schedule F-1 to Bid: Deviations from Technical Provisions
- Schedule F-2 to Bid: Deviations from Contractual Conditions
- Schedule G to Bid: Specific Operation/Plant and Equipment Detail
- Schedule H To Bid: Specimen JV Agreement
- Schedule I To Bid: Past Performance and Present Commitments

LETTER OF TECHNICAL BID (ENVELOPE – I)

Date:.....

**Modifications in the Trash Collection and Diversion Mechanism at 2.82 MW Pakpattan
Hydropower Plant**

Chief Executive Officer,
Punjab Power Development Company Ltd (PPDCL)
3rd Floor, Mega Tower,
63-B Main Boulevard, Gulberg II Lahore
Lahore (Pakistan)

The undersigned

Last Name: _____

First Name: _____

Title / Position: _____

Company [_____ Bidder _____] (the “Lead Bidder”)

Acting as the legal representative of [_____ Bidder _____] (the “Bidder”) pursuant to the [power of attorney] attached hereto as TECH-II, located at the following address:

Address:

Telephone: _____

Fax: _____

Email: _____

Hereby certify, represent, warrant and agree, on behalf of the Bidder that:

1. This Proposal Letter, along with all its attachments (**TECH-I to TECH-VI** & Appendices to ITB and Appendices to Bid) hereto, forms our Proposal and is submitted pursuant to the Request of Proposals dated [_____] issued by the Punjab Power Development Company Ltd (PPDCL, Government of the Punjab(the “GoPb”) as amended, modified, supplemented or varied through [list all Addenda with title and date], [list all clarifications with title and date] issued by PPDCL (the “RFP”) for the modifications in existing Trash Collection Mechanism and installation of trash diversion mechanism at 2.82 MW Pakpattan Hydropower Plant.
2. Having examined and being fully familiar with all the provisions of the RFP (including its forms and attachments and all the above Addenda), receipt of which is hereby duly

acknowledged, and having evaluated, following our own studies undertaken under our responsibility, the nature and scope of the contractual obligations to be executed, the Contract Agreement and any other regulation associated to the Project or its execution, we hereby offer:

- a. to undertake the services of modifications in existing Trash Collection Mechanism(s) at 2.82 MW Pakpattan Hydropower Plant in compliance with all requirements of the RFP;
 - b. at a Proposal Price in Rupees as offered in Envelope-II
3. We understand that all the Schedules attached hereto form part of this Bid.
4. We hereby agree that this proposal constitutes our firm, irrevocable offer that is binding upon us and will remain valid for a period of one hundred twenty (120) Days from the Deadline for Submission of Proposals (the “Proposal Validity Period”), except as such period may be extended by us at the request of PPDCL.
5. We have provided and attached hereto a Proposal Security in the form of Pay Order/Demand Draft/Banker’s Cheque No. [] dated [] issued by [name of issuing bank] in the amount of Pak. Rs (state amount in words) (Pak. Rs [show amount in figure]) in accordance with the form of Bid Security.
6. We certify that (i) the information submitted as part of this Proposal is complete and accurate (ii) the Proposal has been submitted in the legal name of the Bidder [consortium whose members] [who] will be bound to this Proposal and to do modifications in existing Trash Collection Mechanism and installation of diversion mechanism at 2.82 MW Pakpattan Hydropower Plant, (iii) we accept the documents, terms and conditions and disclaimers of the RFP documents.
7. We understand the criteria and process for evaluation of Proposals and selection of Successful Bidder established in the RFP and acknowledge that PPDCL is not obligated to accept our Proposals and may at any time reject our Proposal at its sole discretion.
8. We commit ourselves, if we were to be selected as the Qualified Bidders, to extend the validity of our Proposal and our Bid Security until the issue of the Letter of Invitation (LOI) to the Successful Bidder.
9. We commit ourselves, if we are invited by PPDCL to do so, to clarify our Proposal and finalize the Contract Agreement as specified in the RFP.
10. 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.
11. We agree to abide by this Bid for the period of 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.

12. 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.
13. 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.
14. 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.
15. We do hereby declare that our firm, including any subcontractors or suppliers for any part of the Contract, has 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]*.
16. We, including any subcontractors or suppliers for any part of the Contract, do not have any conflict of interest.
17. We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process.
18. 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).
19. The Lead Bidder duly authorized to execute the Proposal for and on behalf of the Bidder [consortium]:

Dated this day of 2021

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

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

Telephone:

.....

Email

.....

address:

.....

Witness:

Signature:

Name:

Address:

.....

.....

Occupation

TECH – I: BIDDER INFORMATION**LEGAL FORM AND ORGANIZATION OF BIDDER**

(In Table – 1 and Table – 2 below, the Bidder shall provide the required information regarding each member of the Bidder consortium/JV).

TABLE – 1: Legal Form and Organization of Bidder

Sr. No.	Item	Information
1	Name of Bidder	[Lead Bidder/Main Sponsor]
2	Name of Members of Bidder Consortium	[Other members of Bidder consortium]
3	Telephone/Fax/Email	
4	Regional office Address	[Lead Bidder/Main Sponsor]
5	Telephonic / Fax / Email	
6	Authorized person for contact for the Project	
7	Contact Address of Authorized Person	
8	Telephone/Fax/Email of Authorized Person	
9	Legal Form	[e.g. company, corporation, partnership, consortium, joint venture]
10	Memorandum and Articles of Association(for all partners in JV)	[To be attached by Bidder]
11	Joint Venture Agreement	[To be attached by Bidder]
12	PEC license in appropriate category	[To be attached by Bidder]
Attached are copies of the following documents. <ol style="list-style-type: none"> 1. In case of single entity, articles of incorporation of the legal entity named above, in accordance with IB2. 2. Authorization to represent the firm or JV named in above, in accordance with IB17.5 3. Registration with Pakistan Engineering Council in appropriate category, in accordance with IB2. 		

TABLE – 2: Legal Form and Organization of Bidder Members

Sr. No.	Item	Lead Bidder	Other Member	Other Member
1	Name			
2	Legal Form	[e.g. Company Corporation, partnership, consortium, joint venture]	[e.g. Company Corporation, partnership, consortium, joint venture]	[e.g. Company Corporation, partnership, consortium, joint venture]
3	Country of Registration/ Incorporation			
4	Home Office Address			
5	Telephone/Fax/Email			
6	Name and Position of Contact Person			
7	Address of Contact Person			
8	Telephone/Fax/Email of Contact Person			
9	Share in EPC Services for the Complex (%)			
10	Organization Charts	[To be attached by Bidder]	[To be attached by Bidder]	[To be attached by Bidder]
<p>Attached are copies of the following documents.</p> <ol style="list-style-type: none"> 1. In case of single entity, articles of incorporation of the legal entity named above, in accordance with IB2. 2. Authorization to represent the firm or JV named in above, in accordance with IB17.5 3. Registration with Pakistan Engineering Council in appropriate category, in accordance with IB2. 				

TECH – II: POWER OF ATTORNEY

1. If the Bidder is not a consortium, it will furnish a power of attorney authorizing the person who signs the Proposal and other documents forming parts of the Proposal to sign for and on behalf of the Bidder and to bind the Bidder to the signed Proposal and document and any subsequent agreement.
2. If the Bidder is a consortium:
 - Each member of the consortium (other than the Lead Bidder) shall furnish a Power of attorney authorizing the Lead Bidder to act and receive instructions on behalf of all the consortium members and to submit the Proposal for and on their behalf.
 - Each member of the consortium (including the Lead Bidder) shall furnish a power of attorney authorizing the person who signs the proposal and other documents forming parts of the Proposal to sign for and on behalf of the Bidder (which term includes all members of consortium) and to bind the Bidder to the signed Proposal and document and any subsequent agreement.

TECH – III: BIDDER EXPERIENCE (GENERAL AND RELEVANT)

(In Table – 3 and Table – 4 below, the Bidder shall provide the required information regarding

- i. General Experience of any Project/Assignment during last five years
- ii. General Experience of EPC Contracts during last ten years &
- iii. Relevant EPC Contracts of Mechanical works related to Trash Collection systems e.g. water works, hydraulic and gate and control system etc. executed or being executed during last ten (10) years).

General (i) & (ii) & Relevant experience (iii) will be listed separately using Table-3 & 4 for each project.

TABLE – 3: General Information about EPC Contracts

Sr. No.	Item	Information
1	Name of EPC Contractor	
2	Legal Form	[e.g. company, corporation, partnership consortium, joint venture, individual]
3	Country of Registration/Incorporation	
4	Home Office Address	
5	Telephonic / Fax / Email	
6	Name and Position of Contact Person for the Project	
7	Address of Contact Person	
8	Telephone/Fax/Email of Contact Person	
9	Bidder's Area of Main Business	
10	Business license in country of origin (for both local and foreign bidders)	[To be attached]
11	Number of Staff in Main Business	Engineers: Others:

TABLE – IV: GENERAL/RELEVANT EXPERIENCE

Sr. No.	Item	Information
1	Name of Project	
2	Location of Plant	
3	Name of Employer	
4	Name of [Power] Purchaser	
5	Capacity of Plant	
6	Type of Plant	
7	Scope of Services	
8	Number and Rated Capacity of Units	
9	Principal Manufacturers of Major Equipment	
10	Date of completion of Plant	
11	Commercial Operations Date of each unit	
12	Date of award of EPC Contract	
13	Date of Commencement of EPC services at plant	
14	Term (years) of the EPC Contract	
15	Date of cessation of EPC services on plant	
16	Cost of EPC Contract (million Pak. Rs.)	
21	Other Details including technical details of plant (e.g. Turbine type, head, discharge, etc.)	

Note: Table – 4 shall be completed for each reference project separately.

- Reference projects shall have been in successful operation for at least one (1) year on Proposal submission date, duly supported by user's certificate and any other documentary evidence.

TECH-IV: EVIDENCE OF BIDDER'S FINANCIAL CAPABILITY**TABLE-1 Annual Turnover Data**

Applicants, including each partner of a joint venture, should provide financial information to demonstrate that they meet the requirements stated in the Instructions to Bidder.

Annual Turnover Data				
Equivalent in Pak Rupees, Millions				
Partner		Year 1 (2017/18)	Year 2 (2018/19)	Year 3 (2019/20)
1. Lead Partner				
2. Partner				
3. Partner				
Total:				

TABLE-2 Assets and Liabilities

Summarize actual assets and liabilities in Pak Rupees (Equivalent at the current rate of exchange at the end of each year) for the previous three years.

Financial information in Pak Rs. millions	Actual: previous three year		
	Year 1 (2017/18)	Year 2 (2018/19)	Year 3 (2019/20)
1. Total assets (TA)			
2. Total liabilities (TL)			
3. Net worth (TA-TL)			
4. Current assets (CA)			
5. Current liabilities (CL)			
6. Working capital (CA-CL)			
7. Profits before taxes			
8. Profits after taxes			
9. Employer Equity			
Note: Attach audited financial statements for the last three years (for individual applicant or each partner of joint venture). Firms owned by individuals, and partnerships, shall submit their balance sheets certified by a registered accountant, and supported by copies of tax returns, if audits are not required by the laws of their countries of origin in case of foreign firms.			

TABLE-3 Summary Sheet: Current Contract Commitments/Works in Hand

Name of Bidder or partner of a joint venture

Bidder and each partner of Joint Venture should provide information on their current commitments on all contracts that have been awarded and or under operation.

In case of Joint ventures, each joint venture partner must fill out this form separately and provide joint venture partner name.

Name of Contract	Brief description of plant such as capacity, type and other relevant features	Employer's contact address, tel, email, fax	Estimated Completion Date	Value of Outstanding Work (Equivalent Pak Rs. Millions) (X) ^a	Remaining Contract period in months (Y) ^b	Monthly Financial Resources Requirement (Equivalent Pak Rs. Millions) (X/Y)
1.						
2.						
3.						
4.						
5.						
Total monthly financial requirements for current contract commitments (Pak Rs. Millions)						

^a Remaining outstanding contract values to be calculated from 10 days prior to bid submission deadline

^b Remaining contract period to be calculated from 10 days prior to bid submission deadline

TABLE-4 Available Financial Resources

Bidders must demonstrate sufficient financial resources, usually comprising of Working Capital supplemented by credit line statements or overdraft facilities and others to meet the Bidder's financial requirements for its current contract commitments, and the subject contract.

In case of joint ventures, each joint venture partner must fill out this form separately and provide joint venture partner name below:

Name of Bidder or Partner of a Joint Venture

Financial Resources		
Sr. No.	Source of Financing	Amount (million Pak. Rs.)
1	Working Capital (To be taken from Table-2 above)	
2	Credit line ^a	
3	Other Financial Resources	
	Total Available Financial Resources	

^a To be substantiated by a letter from the bank issuing the line of credit

TABLE-5 Available Financial Resources for subject contract

Name of Applicant or Joint Venture Partner	Total Available Financial Resources from TABLE-4 (A)	Total Monthly Financial Requirement for Current Contract Commitments from TABLE-3 (B)	Available Financial resources net of Current Contract Commitments (A-B)
Lead Partner or Single Entity			
Partner 2			
Partner 3			
All partners combined			Σ(A – B)=

TABLE-6

Litigation History

Name of Bidder or Partner of a Joint Venture

Bidders, including each of the partners of a joint venture, should provide information on any history of litigation or arbitration. A separate sheet should be used for each partner of joint venture. 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).

Year	Award For Or Against Applicant	Name of client, cause of litigation, and matter in dispute	Disputed amount (current value Pak Rs. or equivalent)

TECH – V: BIDDER’S PROPOSED ORGANIZATION FOR THE PROJECT

The Bidder shall provide in this Schedule Organization chart indicating the key personnel he will employ for Head office and for Site office involved in management, supervision and Project Management/Engineering of the Works to be done under the Contract to direct and execute the Works, together with their names, qualifications, experience, positions held and their nationalities. Bidder shall provide minimum 3 key personnel with B.Sc Engineering and five (5) years experience, registered with PEC.

The following documentary evidence shall be attached with each CV;

1. The Proposed Key Personnel(s) is / are the employees of the Bidder on Proposal Submission Date.

OR

2. If the Proposed Key Personnel(s) is / are un-employed or are employed by any organization other than the bidder or bidding consortium/JV on the Proposal Submission Date, affidavit of the individual(s) on stamp paper undertaking his / their commitment to join the Bidder, in case of Contract award to the Bidder.

CV’s of key personnel are to be given on the following format:

CURRICULUM VITAE (CV) FOR PROPOSED PROFESSIONAL STAFF

1. **Proposed Position:** _____

2. **Name of Firm** [*Insert name of firm proposing the staff*]: _____

3. **Name of Staff** [*Insert full name*]: _____

4. **Date of Birth:** _____ **Nationality:** _____

5. **CNIC No** (if Pakistani): _____ **or Passport No:** _____

6. **Education :**

<i>Degree</i>	<i>Major/Minor</i>	<i>Institution</i>	<i>Date (MM/YYYY)</i>

7. **PEC Registration No:**

8. **Membership of Professional Associations (if any):** _____

9. Other Training [Indicate significant training since degrees under '6 – Education' were obtained]: _____

10. Languages [For each language indicate proficiency: good, fair, or poor in speaking, reading, and writing]: _____

11. Employment Record [Starting with present position, list in reverse order every employment held by staff member since graduation, giving for each employment (see format here below): dates of employment, name of employing organization, positions held.]:

<i>Employer</i>	<i>Position</i>	<i>From (MM/YYYY)</i>	<i>To (MM/YYYY)</i>

11. Detailed Tasks Assigned

[List all tasks to be performed under this assignment]

12. Work Undertaken that Best Illustrates Capability to Handle the Tasks Assigned

[Among the assignments in which the staff has been involved, indicate the following information for those assignments that best illustrate staff capability to handle the tasks listed under point 11.]

1) Name of assignment or project & Location: _____

Cost of EPC Contract _____

Date of Start _____ Date of Completion _____

Actual Time Spent on the Project: _____ in months.

Client: _____

Main project features: _____

Positions held: _____

Activities performed: _____

2) Name of assignment or project & Location: _____

Cost of EPC Contract _____

Date of Start _____ Date of Completion _____
Actual Time Spent on the Project: _____ in months.
Client: _____
Main project features: _____
Positions held: _____
Activities performed: _____

3) Name of assignment or project & Location: _____

Cost of EPC Contract _____

Date of Start _____ Date of Completion _____
Actual Time Spent on the Project: _____ in months.
Client: _____
Main project features: _____
Positions held: _____
Activities performed: _____

13. Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

Date: _____

[Signature of staff member or authorized representative of the staff] *Day/Month/Year*

Full name of authorized representative: _____

TECH – VI: BIDDER’S EQUIPMENT CAPABILITIES

Bidder shall list the availability of T&P given below.

Sr. No.	Equipment Type and Characteristics	Availability (Yes/No)
1.	Bull Dozer	
2.	Dump Truck	
3.	Excavator	
4.	Mixer	
5.	Over Head crane shed Motorized, 5-30 Ton	
6.	Welding Generators	
7.	Power Generators	
8.	Lathe Machine	
9.	Boring Machine	
10.	Bending Press	
11.	Shearing Machine	
12.	Crane mounted D-Cabin Vehicle, 3 Ton Lifting and 7 Ton weight carrying capacity	
13.	Concrete pump 90 cumec/hr capacity	
14.	Air Compressor 20 HP	
15.	Dewatering Pumps	
16.	Steel Shuttering Plates	

- i. List of T&P mentioned above shall be made available by the successful bidder at site at the time of commencement of services.
- ii. T&P mentioned above may be owned, leased or rented by the Bidder.

SCHEDULES TO BID

**SCHEDULE – A TO BID
SPECIFIC WORKS DATA**

The EPC Contractor shall execute the modification of existing Trash Collection Mechanism(s) and installation of trash diversion mechanism at 2.82 MW Pakpattan Hydropower plant safely and efficiently and in accordance with the provisions of Contract Agreement. Without prejudice to the generality, the EPC Contractor shall provide the Services as stated below except as otherwise agreed upon by the Employer and the EPC Contractor.

The design basis and conditions are prescribed in the relevant sections of the Technical Provisions. The Bidder is required to furnish the technical data by providing hereunder other salient parameters including main Trash Rack Cleaning Machine's parts' make, capacity and suitability for the works under consideration to enable the Employer to assess technical conformance of the proposed process and the means available with the contractor to execute the works.

Initials of Signatory to Bid:.....

SCHEDULE – B TO BID
PROPOSED ORGANIZATION FOR THE PROJECT

The Bidder shall provide in this Schedule Organization chart indicating the key personnel he will employ for Head office and for Site office involved in management, supervision, Procurement & Contracts and Engineering of the Works to be done under the Contract 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 engineers
- Plant Erectors
- Construction Supervisors
- QA/QC
- Other Staff

Initials of Signatory to Bid:.....

SCHEDULE – C TO BID
METHOD OF PERFORMING THE WORKS

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

- The sequence and methods in which he proposes to carry out the Works, including the number of shifts per day and hours per shift, he expects to work.
- A list of all major items of constructional and erection plant, tools and vehicles proposed to be used in carrying out the Works at Site, including number of each kind, make, type, capacity of all equipment, working condition, which shall be deployed by him for Civil Work and Erection, Testing and Commissioning of the Works, in sufficient detail to demonstrate fully that the equipment will meet all the requirements of the Specifications.
- The procedure for installation/erection of equipment and transportation of equipment and materials to the site.
- Details regarding mobilization in Pakistan, the type of facilities including personnel accommodation, office accommodation, provision for maintenance and for storage, communications, security and other services to be used.
- The Contractor shall provide description of his construction camp's facilities and staff housing requirements.
- The Contractor shall be responsible for pumps, electrical power, electrical distribution systems, including all fittings, pipes and other items necessary for servicing the Contractor's construction camp. The Bidder shall list or explain his plans for providing these facilities for the service of the Contract as follows:
 1. Site Preparation (clearing, land preparation, etc.)
 2. Provision of Services
 3. Construction of Facilities
 - a) Contractor's Office, Workshop and Work Areas (areas required and proposed layout, type of construction of buildings, etc.)
 - b) Warehouses and Storage Areas (area required, type of construction and layout)
 - c) Housing and Staff Facilities (Plans for housing for proposed staff, layout, type of construction, etc.)
 4. Construction Equipment Assembly and Preparation (detailed plans for carrying out this activity).
 5. Other Items Proposed (Security services, etc.).

Initials of Signatory to Bid:.....

**SCHEDULE – D TO BID
PROPOSED PROGRAMME OF WORKS**

Bidder shall provide a programme in a bar-chart/CPM/PERT form showing the sequence of work items by which he proposes to complete the Work of the entire Contract. The programme should indicate the sequences of work items and the period of time during which he proposes to complete the Works including the activities like designing, schedule of submittal of drawings, ordering/procurement of materials, manufacturing, delivering, design & construction of associated civil works, installation/erection, testing and commissioning of Works to be executed under the Contract.

Proposed Program of Works shall also include Resource loading, synchronized with the team proposed in Schedule B-Proposed Organization for the project and deployment of manpower for each activity or work item for the period of time for completion of each activity or work item.

Initials of Signatory to Bid:.....

SCHEDULE – E TO BID
WORK TO BE PERFORMED BY SUBCONTRACTORS

The Bidder will do the work with his own forces except the part (s) of the Works listed below which he intends to sub-contract.

Sr. No.	Items of Work/ services to be sub-contracted	Name of proposed Sub-Contractor	Address of Sub-Contractor	Statement of similar works/services previously executed by the Sub-Contractor (attach evidence)

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 Subcontractors is guaranteed by the Bidder. The Employer's judgment shall be final as to the evaluation of the experience of Subcontractors submitted by the Bidder.
3. Statement of similar works shall include description, location & value of work, year completed and name & address of the clients.
4. This may include manufacturer(s) who are proposed here and their relevant details to be provided accordingly including make, capacity and salient features to make it particularly suitable for the works. The technology used should also be detailed adequately.

Initials of Signatory to Bid:.....

**SCHEDULE – F-1 TO BID
DEVIATIONS FROM TECHNICAL PROVISIONS**

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

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

Note: Attach additional sheets, if necessary

Initials of Signatory to Bid:.....

SCHEDULE – F-2 TO BID
DEVIATIONS FROM CONTRACTUAL CONDITIONS

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

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

Note: Attach additional sheets, if necessary

Initials of Signatory to Bid:.....

**SCHEDULE – G TO BID
SPECIFIC PLANT AND EQUIPMENT DETAIL**

The bidder shall furnish detail of T&P/equipments required for fabrication, welding, heating, erection and commissioning activities to be supplied by the Bidder at site for execution of Works

Note: Attach additional sheets, if necessary

Initials of Signatory to Bid:.....

**SCHEDULE –H TO BID
JV AGREEMENT**

**PROVIDING ENGINEERING, PROCUREMENT AND CONSTRUCTION (EPC)
SERVICES ON TURNKEY BASIS FOR MODIFICATION OF EXISTING TRASH
COLLECTION MECHANISM(S) OF 2.82 MW PAKPATTAN HYDROPOWER PLANT
IN DISTRICT PAKPATTAN PUNJAB**

This joint Venture Agreement (hereinafter called the “Agreement”) made and entered into this day of _____ 2021 by and between.

M/s _____ having its office at _____ Tel: # _____, E-mail _____ through its authorized representative

Mr.

_____, a company under the laws of Pakistan (hereinafter referred to as “_____”).

AND

M/s _____ having its office at _____ Tel: _____, Fax _____, Email: _____ through its authorized representative _____, a company under the laws of Pakistan (hereinafter referred to as “_____”).

The above companies shall be referred to singularly as “Party” and collectively as Parties or Contractor”.

WHEREAS

PUNJAB POWER DEVELOPMENT COMPANY LTD. (PPDCL), Government of Punjab, Lahore, Pakistan with address at 3rd Floor, Mega Tower, Main Boulevard, Gulberg II, Lahore, Pakistan (hereinafter referred to as “the employer) invited for “Bidding for providing EPC Services on Turnkey basis for Modification of Existing Trash Collection Mechanism of 2.82 MW Pakpattan Hydro Power Plant in Punjab” (hereinafter referred to as “the Plant”):

The parties hereto desire to associate themselves by the signing of this JOINT VENTURE Agreement for the exclusive purpose of drawing upon joint experience by collaborating together in the preparation and submission of tender documents, and entering in to the Contract Agreement with the Employer and performing all the Services to be undertaken by the Joint Venture if awarded contract.

NOW THEREFORE in accordance with the mutual covenant hereinafter covenant the Parties hereto agree as follows:

1. Definitions and Interpretations

1.1 Definitions

The following words and expressions shall have the meanings assigned to them, except where the context otherwise requires:

1.1.1 “Employer” means Punjab Power Development Company Ltd. (PPDCL).

Government of Punjab, Lahore, Pakistan, Project Offices Building; with address as 3rd Floor, Mega Tower, Main Boulevard, Gulberg II, Lahore, Pakistan except its legal successors and permitted assigns.

- 1.1.2 “Day” means the period between anyone midnight and the next midnight, and “month” means a period of one month according to the Gregorian calendar commencing with any day in the month;
- 1.1.3 “Document” means written, drawn, typed, printed, magnetized or photographic material which is capable of being copied
- 1.1.4 “Joint Venture” means the Joint Venture formed between the parties in accordance with this Agreement; parties are jointly and severally liable for performance under the contract.
- 1.1.5 “Leader Party” means the member which will take the lead in the management of the joint Venture’s affairs and which will provide the joint Venture’s Representative for liaison with the employer
- 1.1.6 “Proposal means the proposal to be prepared and submitted y the Joint Venture in pursuance to the invitation to Bid;
- 1.1.7 “Services” means all the services to be performed by the Joint Venture in accordance with the Proposal, any Terms of Reference or the Contract Agreement, as the case may be;
- 1.1.8 “Contract” means the agreement between the Employer and the joint Venture for the provision of professional services for the Project; and
- 1.1.9 “Plant” means 2.82 MW Pakpattan Hydro Power plant in Punjab owned by the Employer;

2. JOINT VENTURE

- 2.1 The parties hereby establish a joint Venture being an unincorporated association under the name of_____ JV (hereinafter called the “JOINT VENTURE”) for the purpose of drawing upon joint experience by collaborating together in the preparation and submission of Tender documents, and entering into the Contract with the Employer and performing all the Services to be undertaken for the Plant by the joint Venture if awarded contract.
- 2.2 The parties hereby appoint _____ as the Leader Party and a nominated person by JV’s shall be the representative of the JOINT VENTURE.
- 2.3 The JOINT VENTURE representative is authorized for signing and submitting the Proposals, negotiation, correspondence and discussion with the Employer on matters involving the signing and interpretation of the documents and alteration to

its terms and to the Services to be performed.

- 2.4 All parties shall be liable jointly and severally for the execution of the Contract in accordance with the agreed terms. The parties to the joint venture accept joint and several liabilities for all obligations under the Contract.
- 2.5 None of the PARTIES shall, directly or indirectly, under its own name or through its successors, execute or take any other interest in the Tender in a manner other than as defined in this Agreement.

3. SCOPE OF WORK

The parties agree to work together toward the same structures i.e. the scope of services under the subject Tender, however the percentage share of works will be as under:

3.1 Lead Member %

3.2 Member %

Split of Services/contribution to be provided by the Parties is as under:

3.3 Lead Member

3.4 Member

4. BANK GUARANTEE

- 4.1 Lead Member shall provide the bank guarantees for entire work scope in the name of the JOINT VENTURE.

5. VALIDITY OF JOINT VENTURE

- 5.1 This AGREEMENT shall become valid upon signing thereof and shall terminate upon the earliest of the following occurrences:
- a) if the EMPLOYER does not accept the offer submitted by the JOINT VENTURE,
Or
 - b) In the event the TENDR is cancelled by the EMPLOYER, or awarded to another bidder,
Or
 - c) if TENDER is not submitted by the PARTIES to the EMPLOYER by the closing date of the tender.

6. ARBITRATION

- 6.1 Any dispute or difference of any kind whatsoever in connection with or arising out of this Agreement shall be settled by friendly negotiation. If it cannot be settled by mutual consultations, the disputes shall be arbitrated in Pakistan as per local law.

7. OTHERS

- 7.1 Each PARTY shall be responsible for the execution of its work to be finalized as per

the stipulations of Work scope in this Agreement. In executing its work Scope, each Party shall owe a duty to their PARTY to ensure that all the plant, material, equipment and services used or provided between conformity with the Contract and that all the work undertaken by that PARTY is executed in good and workmanlike manner as per specifications and practices.

7.2 Each Party will be responsible for the payment of taxes associated with the Project scope.

This AGREEMENT is signed in three (3) originals, on the _____ day of _____ 20____ by the joint consent of the PARTIES.

For

For

Lead Member

Member

Name of Authorized Representative:

Name of Authorized Representative:

Signature:

Signature:

Designation:

Designation:

Seal:

Seal:

SCHEDULE –I TO BID
PAST PERFORMANCE & 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.							
4.							
5.							
6.							
7.							

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.

LETTER OF PRICE BID (ENVELOP-II)
AND
SCHEDULES TO BID

LETTER OF PRICE BID AND SCHEDULES TO BID

Letter of Price Bid

Schedules to Bid

- Schedule J to Bid: Integrity Pact
- Schedule K to Bid: Estimated Progress Payments
- Schedule L 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

Date:.....

Modifications in the Trash Collection and Diversion Mechanism at 2.82 MW
Pakpattan Hydropower Plant

Chief Executive Officer,
Punjab Power Development Company Ltd (PPDCL)
3rd Floor, Mega Tower,
63-B Main Boulevard, Gulberg II Lahore
Lahore (Pakistan)

The undersigned

Last Name: _____

First Name: _____

Title / Position: _____

Company [_____ Bidder _____] (the “Lead Bidder”)

Acting as the legal representative of [_____ Bidder _____] (the “Bidder”) pursuant to the [power of attorney] attached hereto as TECH-II, located at the following address:

Address: _____

Telephone: _____

Fax: _____

Email: _____

Hereby certify, represent, warrant and agree, on behalf of the Bidder that:

Gentlemen,

1. This Proposal Letter, along with all its attachments & Appendices to ITB and Appendices to Bid) hereto, forms our Proposal and is submitted pursuant to the Request of Proposals dated [_____] issued by the Punjab Power Development Company Ltd (PPDCL, Government of the Punjab(the “GoPb”) as amended, modified, supplemented or varied through [list all Addenda with title and date], [list all clarifications with title and date] issued by PPDCL (the “RFP”) for the modifications in existing Trash Collection Mechanism and installation of trash diversion mechanism at 2.82 MW Pakpattan Hydropower Plant.
2. 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

Bidding Documents

remedy any defects therein in conformity with the said Documents including Addenda thereto for the Total Bid Price comprising of Pak Rupees (Rs.) or such other sum as may be ascertained in accordance with the said Documents.

3. We understand that all the Schedules attached hereto form part of this 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. We agree to abide by this Bid for the period of 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.
5. 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.
6. We understand that you are not bound to accept the lowest or any Bid you may receive.
7. 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.
8. 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) , 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.

Dated this day of 2021

Signature in the capacity ofduly 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 – J TO BID
INTEGRITY PACT**

[Deleted]

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC.

Contract No. _____

Dated _____

Contract Value: _____

Contract Title: _____

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

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

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

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

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

Name of Buyer:

Name of Seller/Supplier:

Signature:

Signature:

[Seal]

[Seal]

SCHEDULE – K 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 nd Month		
Total Bid Price		

Initials of Signatory to Bid:

SCHEDULE –L 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.

The breakdown will be used to assess reasonability of quoted price only. Payment shall be reimbursed on Lump Sum basis on achievement of respective payment milestones as provided in the Contract.

SCHEDULE OF PRICES

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 and Bid Drawings.
- 1.2 The Bidder shall quote for all items of the Works executed on EPC/Turnkey basis and the prices shall be quoted for the complete scope of Work as described or implied from these Bidding Documents in schedule-L to bid.
- 1.3 Site Visit
 - i. The Bidder is advised to visit and examine the site and the surrounding areas and obtain or verify all information it deems necessary for the preparation of the Proposal.
 - ii. The Bidder shall submit a written request to PPDCL at least three (3) Days in advance of such Site inspection. PPDCL will grant Bidder or its agents written permission to visit the Site or, if necessary, to enter into certain premises for such purpose. Bidder or its agents will only be granted permission on the express condition that Bidder agrees to follow all instructions of PPDCL-and to release and indemnify PPDCL and its agents from and against all liability in respect thereof and to be responsible for personal injury (whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expenses however caused, which, but for the exercise of such permission, would not have arisen.
 - iii. Failure to investigate the Site or prevailing conditions fully shall not be grounds for Bidder subsequently to alter its Proposal nor shall it relieve the Bidder from any responsibility.
 - iv. Maximum of up to two (2) representatives of each Bidder shall be allowed. Representatives of PPDCL shall accompany the Bidders, if necessary, to brief the Bidders about the Site and facilitate the Site visit.

2. Description & Quantities

- 2.1 Price given in the Schedule of Prices against each item shall be for the scope covered by that item as detailed in the Specifications, Bid Drawings or elsewhere in the Bidding Documents. The general directions and descriptions of work and materials are not necessarily repeated nor summarized in the Schedule of Prices and do not generally give a full description of the Plant and equipment to be supplied and the services to be performed under each item. References to the relevant sections of the Bidding Documents shall be made to ascertain the full scope of the requirements included in each item prior to filling in the rates and prices against each item in Schedule of Prices.

The Schedule of Prices only identifies major components of the structure and it does not restrict the responsibility of the Contractor to furnish all equipments, materials and services as deemed necessary by the Employer for making the structure operationally

complete and satisfactory as specified and/or implied in the Bidding Documents and subsequent revisions thereto.

- 2.2 The activities/items as shown in the Schedule of Prices are provisional only being given as an indication of the Scope of Work to enable the Bidder to bid for different items of the Works in accordance with his estimate of costs. It is, however, to be noted that the basis of payment will be Fixed Lump Sum Cost quoted in Schedule of Prices irrespective of the quantities of work.
- 2.3 The quantities to be entered by the Contractor in the Schedule of Prices are estimated quantities based on Contractor's detail design and provisional only to be given as an indication of the Scope of Work to enable the Bidder to bid for different items of the Works in accordance with his estimate of costs. The Lump Sum Price will be used for comparing the Bids. Lump Sum Price quoted by the bidder shall remain fixed irrespective of the actual quantities used for completion of Works/Services as per the Scope of Work.
- 2.4 The sizes & dimensions mentioned and/or specified in the various technical descriptions and specifications including Bid Drawings are tentative and not final as the responsibility for detailed design rests with the Contractor under the Contract. If, in the opinion of the Project Manager/Engineer, at the time of review of Contractor's drawings/designs for approval, certain sizes & dimensions of some items have to be increased for proper completion and/or operation of the Works, then revised sizes & dimensions shall be supplied by the Contractor at no extra cost to the Employer.

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:

	<u>Abbreviation</u>
Local Currency Component	LCC
Pakistani Rupees	PKR/Pak Rs.
Ex Works	EXW
Quantity	Qty
Square Feet	Sft.
Running Feet	Rft.

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, transportation 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 2 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 seven (7) 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 in the Schedule of Prices for any work required to be executed by the Contractor on EPC/Turnkey basis under single responsibility for the completion of the Works and to make the structure operationally complete, the cost of such item(s) 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 by the Employer for those items executed by the Contractor.

The rates, prices and amounts shall be entered against each item in the Schedule of Prices. Where a Bidder fails to quote a price of any item of the Schedule of Prices, the Employer will consider that the price of that item is included among other items and the Contractor will be obligated to furnish that item at no extra cost to the Employer, if awarded the Contract.

- 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 of the Plant and Equipment to 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 out side 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) Shipping & Insurance

i) Shipping

The Bidder shall quote prices for shipping from port of shipment to the port of entry in Pakistan (Pakistan seaport) 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 marine transportation costs including ocean freight, heavy lift charges, fees and other charges, etc.

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

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

ii) 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.

b) Unit Price for Supply of 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 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 including loading, unloading, transportation, storing and insurance costs,
- 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 equipments.

c) Local Transport

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

- i) the Plant, Erection Equipment, Spare Parts, Workshop Equipment 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, Workshop Equipment and other materials if any, offered from within Pakistan; from the factory in Pakistan to the storage area at the Site. The cost shall also include all insurance costs of Local Goods and other materials from factory to Site covering the responsibility of all losses or damages, while loading, unloading, storing, trimming on the carrier and transporting to Site. The cost of insurance of Local Goods shall be quoted on the basis of insurance through any insurance company listed in Clause 5.1 a) ii) here above, acceptable to the Employer.

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, Workshop Equipment 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.

d) Erection & Other Work

The Bidder shall quote prices for Erection & Other Work 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, performance tests, reliability tests and until issuance of the Taking-Over Certificate, the cost of foreign and local erection staff and labour, material, 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 any insurance company listed in Clause 5.1 a) ii) hereabove, acceptable to the Employer.

e) Civil Works

The Bidder shall quote prices for Civil Works separately. Such prices shall include all costs of materials used for civil building and other construction works, construction for civil works, supervision including all costs of construction staff and labour, Contractor's Equipment, tools and equipment, etc.

f) Other Services

In the Schedule of Prices, under the relevant items, the Bidders shall quote prices for all costs to be incurred in connection with inspections and witnessing of tests at manufacturers' works within or outside Pakistan by the Employer/Manager Procurement & Contracts/Engineer's staff.

5.2 Total Bid Price

The total of Bid prices in the Schedule of Prices shall be entered in the Summary of Bid Prices.

6. Erection & Testing Equipment and Maintenance Tools

- 6.1 The Bidder shall be responsible to provide all Erection and Testing Equipment & Maintenance Tools at the Site, at his own expenses.

7. Provisional Sums

- 7.1 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. The Contractor will only receive payment in respect of Provisional Sums if he has been instructed by the Employer to utilize such sums.

Provisional Sums shall be expended for reimbursement of Contractor's invoices for any additional site protection works, relocation of services or any other work / payments as instructed by the Employer through Variation Order.

8. Schedule of Rates and Prices

- 8.1 The bidder shall enter a price in the schedule representing a Lump Sum price for performing all design , procurement, manufacturing, establishment, material supply and processing, installation, construction, quality assurance, quality control, testing, commissioning and all other necessary works to implement the complete project.

SCHEDULE OF PRICES

Schedule No.1-	Design Services
Schedule No.2-	Civil Works, Installation and Other Services
Schedule No.3-	Supply of Plant (E&M Works) (Pre Engineered Structures) including Fixtures and other materials & goods
Schedule No.4-	Grand Summary of Bid Prices

Schedule No. 1 –Design Services

Item	Description	Qty	Unit Price		Total Price	
			Local Currency Portion	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion
1	2	3	4	5	6= 3*4	7=3*5
1	Design					
1.1	Design of Civil Works/E&M Design including Design Basis, Datasheets, Specifications, Requisitions, BOQs, MTOs, CAPEX/OPEX, GA Drawings, Fabrication Drawings, Utilities etc.					
1.2	Construction Drawings					
1.3	As Built Drawings					
1.4	Erection Sequence Drawings/ Drawings for E&M Works etc.					
1.5	Testing and Commissioning Report on Completion					
1.6	O&M Manuals					
1.7	Design of Infrastructure					
1.8	Project Management Documents including List of Deliverables, Work Plan, Level 3 Schedule Gantt Chart, Bi-monthly progress Reports etc.					
1.9	Any other (Give Details)					
Total						

N.B.

- i. Whether expressly mentioned or not in column 2, the prices are deemed to cover all deliverables pertaining to Technical Specifications/Scope of Work.
- ii. Total Columns 6 & 7 to be carried forward to Schedule No.04 Grand Summary

Name of Bidder

Signature of Bidder

Schedule No. 2 –Civil Works, Foundations, Installation and Other Services

Item	Description	Qty	Unit Price		Total Price	
			Local Currency Portion	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion
1	2	3	4	5	6= 3*4	7=3*5
2	Civil Works					
2.1	Temporary Works					
2.2	Permanent Works					
2.3	Excavation for Columns					
2.4	Concrete Columns					
2.5	Support Structures					
2.6	Installations					
2.7	Any Other (Provide Details)					
	Total					

N.B.

- i. Whether expressly mentioned or not in column 2, the prices are deemed to cover all Works and Installations pertaining to Technical Specifications/Scope of Work.
- ii. Total Columns 6 & 7 to be carried forward to Schedule No.04 Grand Summary

Name of Bidder

.....

Signature of Bidder

.....

Schedule No. 3 –Supply of Plant (E&M Works) including Fixtures and other materials & goods

Item	Description	Qty	Country Origin	Unit Price		Total Price	
				Local Currency Portion	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion
1	2	3	4	5	6	7=3*5	8=3*6
3A	Floating Boom						
3A.1	Steel Drums						
3A.2	Clamping Arrangement						
3A.3	Wire Rope Fiber Core						
3A.4	Wooden Planks (3feet*57 feet)						
3B	Modification of Already Installed TRCM and TRCM Bucket						
3B.1	Stainless Steel Side Guide Strips						
3B.2	Steel Rollers						
3B.3	Stainless Steel Lifting Pin						
3B.4	Steel Weights to be attached with Bukcet to increase its weight						
3C	Pre Engineered Structures (if any)						
3D	Any Other (Provide Detail)						
	Total						

N.B.

- i. Whether expressly mentioned or not in column 2, the prices are deemed to cover all E&M Works and Installations pertaining to Technical Specifications/Scope of Work.
- ii. Total Columns 7 & 8 to be carried forward to Schedule No.04 Grand Summary

Name of Bidder

Signature of Bidder

Schedule No.4 –Grand Summary

Schedule No.	Title	Total	
		Foreign	Local
1			
2			
3			
4	Contingency	-	500,000/-
Sub Total			
Exchange Rate			
Grand Total in Pak. Rs. (1+2+3+4)			

Name of Bidder

Signature of Bidder

* Specify currency and its exchange rate in accordance with IB 25. Create additional columns for foreign currency if so required.

* Contingency amounting to Rs. 500,000/- will be expended with the express permission of the Employer and will form a part of Total Bid Price.

PREAMBLE TO CONDITIONS OF CONTRACT

PREAMBLE TO CONDITIONS OF CONTRACT

Commencement Date	Sub-Clause 1.1.1.(i) The date for commencement of the Works is the date of issuance of the Project Manager/Engineer's Written Order to Commence which shall be issued within 14 days of signing of Contract Agreement and also site possession has been delivered.
Defect Liability Period	Sub-Clause 1.1.11 The Defect Liability Period is <i>365 days</i> after the date certified in the Taking-Over Certificate but subject to extension as provided under Sub-Clause 30.4. The defects at site considering structural stability, physical appearance and precautionary measures shall be identified by the Employer's Representative.
The Employer	Sub-Clause 1.1.12. The Employer is <i>Punjab Power Development Company Ltd. (PPDCL), Energy Department, Government of Punjab</i> 3rd Floor Mega Tower, 63 B Main Boulevard, Gulberg II, Lahore Phone: 042-99332153-56 Fax: 042-99332157
The Project Manager/Engineer	Sub-Clause 1.1.16. The Project Manager is <i>General Manager Hydel, PPDCL</i> and the Engineer is: <i>Project Manager shall also act as the Engineer</i>
Time for Completion	Sub-Clause 1.1.35. The Time for Completion for whole of the Works is <i>sixty (60) days</i> reckoned from the Commencement Date for the project.
Warranty Period	Sub-Clause 1.1.40. The Warranty Period is <i>One (1) year</i> for (goods/equipment)
Project Manager/Engineer's Duties & Authorities	Sub-Clause 2.1 The duties & authorities of the Project Manager/Engineer are specified in Particular Conditions of Contract.
Confirmation in Writing	Sub-Clause 2.6 (i) The Contractor shall notify to the Project Manager/Engineer within ten (10) days, if he requires any confirmation. (ii) Project Manager/Engineer shall confirm the decision/instruction within ten (10) days of the requirement.
Ruling Language	Sub-Clause 5.1. The version in English language (ruling language) shall prevail.
Day to Day Communications	Sub-Clause 5.2. The language for day to day communication is English.

As Built-Drawings	Sub-Clause 6.10 As-Built drawings shall be provided to the Project Manager/Engineer within thirty (30) days from the date of issue of Taking-Over Certificate.
Programme to be Furnished	Sub-Clause 12.1. The Programme must be submitted in the form of Bar-Chart with critical path/activities for individual activities and overall Project.
Employer's Equipment	Sub-Clause 14.4. There will be no Employer's Equipment available for use by the Contractor.
Working Hours	Sub-Clause 18.3. The normal working hours on the Site are to conform to the applicable labour laws and the existing customs of Pakistan.
Time for Completion	Sub-Clause 25.1 Period of Completion is as stated under Sub-Clause 1.1.35 hereof. Place for execution of Works is Pakpattan Hydropower Plant, District Pakpattan, Punjab.
Earlier Completion	Sub-Clause 26.3 (i) Amount of Bonus per day: <i>Not Applicable</i> (ii) Max. Amount of Bonus: <i>Not Applicable</i> Sub-Clause 27.1.
Delay in Completion	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 the Contract Price as stated in Letter of Acceptance, excluding Provisional Sums.
Prolonged Delay	Sub-Clause 27.2. Maximum amount recoverable from the Contractor by the Employer shall be 10% of Contract Price as stated in the Letter of Acceptance, excluding Provisional Sum.
Terms of Payment	Sub-Clause 33.1. 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.
Payment in Foreign Currencies	Sub-Clause 35.1. Payment will only be made in local currency
Insurance of Works	Sub-Clause 43.1. 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. Sub-Clause 43.1.(a) The additional risks to be insured are as stated in Sub-Clause 43.1(a) of the Particular Conditions of Contract.
Third Party Liability	Sub-Clause 43.3. The amount of insurance against third party liability taken out by the Contractor shall not be less than Pak Rs. One (1) million per occurrence with number of occurrences unlimited.
Payment on Termination for Employer's Default	Sub-Clause 46.3. The additional amount payable by the Employer on termination shall not exceed the actual cost of work executed.
Labour, Materials and Transport	Sub-Clause 47.1. The Contract shall not be subject to price adjustment.
Notices to Project Manager/Engineer	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 Project Manager/Engineer for notices is the same as given in Sub-Clause 1.1.15 here above.
Applicable Law	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.
Procedural Law for Arbitration	Sub-Clause 51.2. The procedural law for arbitration shall be the Rules of Pakistan Arbitration Act 1940 as amended.
Language and Place of Arbitration	Sub-Clause 51.3. The language of arbitration is English. The place of arbitration is Lahore, Islamic Republic of Pakistan.

GENERAL CONDITIONS OF CONTRACT

PART-I: 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.

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 ro 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, mobilisation, requisition or embargo,
- (b) 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,
- (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.

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.

PARTICULAR CONDITIONS OF CONTRACT

PART-II: PARTICULAR CONDITIONS OF CONTRACT

These Conditions of Particular Application Part-II are additions, deletions and amendment to General Conditions of Contract Part-I. Clause Nos., if similar as of Part-I are amendments therein otherwise these are additional clauses or sub-clauses thereto.

This Contract is a single responsibility EPC/Turnkey Contract for all the purposes. Any mentions or descriptions and intents in this Contract Agreement which are contrary to the spirit of EPC/Turnkey Contract shall be ignored.

Definitions 1.1

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, supply, 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 beginning of this Sub-Clause:

“For the purpose of this EPC/Turnkey Contract, based on two party agreement, the term Engineer is construed as Project Manager/Engineer. The Project Manager is a Person appointed by the Employer to act on behalf of the Employer for the purpose of the Contract whereas the Engineer has the same meaning as defined in GCC Sub-Clause 1.1.15.”

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

“or any other competent person appointed by the Employer as his replacement.”

Sub-Clause 1.1.16

The term “Engineer’s Representative” is replaced with the term “Project Manager/Engineer’s Representative”.

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.

Sub-Clause 1.1.33

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 new Sub-Clauses 1.1.38 to 1.1.49 are added:

1.1.38 “Month” means calendar month according to Gregorian calendar.

1.1.39 “Operation and Maintenance Manuals” has the meaning described in Sub-Clause 6.6.”

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’ wherever appearing in FIDIC Conditions of Contract is synonymous with the words “Particular Conditions of Contract”.

Sub-Clause 1.1.42

The words ‘Local Goods’ is synonymous with the words “Indigenous Goods” and the word ‘Installation’ with “Erection”.

Sub-Clause 1.1.43

“EPC/Turnkey Basis” means where the Contractor takes total responsibility for design and execution of the project with little involvement of the Employer. Under the usual arrangements of turnkey projects the contractor carries out all the Engineering, Procurement and Construction (EPC) providing a fully equipped facility ready for operation.

Total responsibility of the Contractor include; but not limited to; design, supply, installation and commissioning of all mechanical and electrical equipment, civil and other works necessary for the completion and commercial operation of the Plant and shall include all such items of Plant and equipment or work, whether mentioned in the Specifications, Bid drawings, Schedule of Prices or not, which are required to make the Plant operationally complete in accordance with the guarantees prescribed under the Contract

Sub-Clause 1.1.44

“Constructional Plant” means all appliances or things of whatsoever nature (other than Temporary Works) required for execution and completion of the Works and the remedying of any defects therein but does not include Plant, materials or other things intended to form or forming part of Permanent Works. The word ‘Constructional Plant’ is synonymous with “Contractor’s Equipment”.

Sub-Clause 1.1.45

“Contractor’s Agent” means the person for the time being or from time to time appointed by the Contractor pursuant to the provisions of Clause 13. The word “Contractor’s Agent” is synonymous with “Contractor’s Representative”.

Sub-Clause 1.1.46

“Performance Tests” means tests intended to demonstrate the attainment of guaranteed contract performance to be conducted in accordance with the requirement of the Specifications.

Sub-Clause 1.1.47

“Reliability Test” means such test or tests as are provided for in the Contract, or as may be agreed upon, which shall be successfully completed as a pre-requisite to Taking Over.

Sub-Clause 1.1.48

“Temporary Works” means all temporary works of every kind (other than Contractor’s Equipment) required in or about the execution and completion of the Works and the remedying of any defects therein.

Sub-Clause 1.1.49

“Permanent Works” means the permanent works to be executed (including Plant) in accordance with the Contract.

Sub-Clause 1.6 Costs, Overhead Charges and Profit

The last sentence “Any profit entitlement shall be added to cost at the percentage stated in the Preamble.” is deleted and substituted by the following:

“Any profit entitlement shall be embedded in the price stated in the Price Schedules as part of the Lump Sum Bid Price as agreed in the Contract Agreement.”

Sub-Clause 2.1 Project Manager/Engineer’s Duties

The text of Sub-Clause 2.1 is deleted and substituted by the following:

“The Project Manager/Engineer shall carry out the duties specified in the Contract.

The Project Manager/Engineer may exercise the authority attributable to the Project Manager/Engineer as specified in or necessarily to be implied from the Contract. The Project Manager/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 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,

Bidding Documents

- (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 Project Manager/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 Project Manager/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 Project Manager/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 Project Manager/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 Project Manager/Engineer. The Employer shall not replace the Project Manager/Engineer with a person against whom the Contractor raises reasonable objection by notice to the Employer, with supporting particulars.”

The following new Sub-Clause 2.9 is added:

Sub-Clause 2.9 Project Manager/Engineer Not Liable

Approval, reviews and inspection by the Project Manager/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 Project Manager/Engineer's 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 Project Manager/Engineer.”

The following new Sub-Clause 4.2 is added:

“Sub-Clause 4.2 No Contractual Relation between Subcontractor and the Employer

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 Letters of Technical and Price 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 (A to L)
9. The Specifications
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 and the following text is added:

“The Technical Specifications are taken to be correct, but complete accuracy is not guaranteed. Any error or ambiguity must be reported to the Employer and the Project Manager/Engineer before starting the work affected. In the event of any dispute arising as to the true intended meaning of Technical Specification, the Project Manager/Engineer shall interpret the same and his interpretation shall be accepted as final and binding upon all parties concerned, except to the extent provided for in the Arbitration provisions hereof.”

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 one (1) draft copy for approval of the Project Manager/Engineer prior to producing finished volumes.

The Contractor shall provide three (3) 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 Project Manager/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 Project Manager/Engineer three (3) 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 an electronic form (CD).

Sub-Clause 6.11 Shop Drawings

The Contractor shall submit to the Project Manager/Engineer for review three (3) copies of all shop and site erection work drawings in 1:4 scale seeking approval of the Project Manager/Engineer.

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

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 fourteen (14) days after the receipt of Letter of Acceptance. The Performance Security shall be of an amount equal to 10 percent of the Contract Price in the currency (ies) of the Contract 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.

The performance security shall be valid for twenty eight (28) days beyond defect liability period.

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

Sub-Clause 10.3 Claims 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, 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.

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

Sub-Clause 12.1 Programme to be Furnished

(1) The text of 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 of the Plant including design and construction of associated civil works and taking-over by the Employer). The programme on critical activity based format and resource planning schedule shall be prepared. The programme 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.”

(2) The text of Sub-Clause 12.1(c) is deleted and substituted by the following:

“(c) The Contractor requires the Employer:

- (i) to furnish any Employer’s Drawings;
- (ii) to provide access to the Site;

(3) The second last sentence of Sub-Clause 12.1 is deleted and substituted by the following:

“The programme is to be furnished by the Contractor within seven (7) days from the date of receipt of Letter of Acceptance. “The Project Manager/Engineer” proposed changes/modifications may also be incorporated and revised program shall be submitted within ten (10) days.”

Sub-Clause 12.3 Revision of Programme

The last sentence of Sub-Clause 12.3 is deleted.

The following new Sub-Clauses 12.4 and 12.5 are added:

Sub-Clause 12.4 Monthly Progress Report

During the period of the Contract, the Contractor shall submit two (2) sets of monthly progress report to the Project Manager/Engineer not later than the 5th 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 thirty (30) days sufficiently detailed to enable the Project Manager/Engineer to determine his programme 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

“During the period of the Contract, the Contractor shall keep a daily record of the work progress, which shall be made available to the Project Manager/Engineer as and when requested.

The daily record 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 Project Manager/Engineer (which 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. 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 Project Manager/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 Project Manager/Engineer may determine to be reasonably necessary for such purpose.

The Contractor shall make, maintain, and submit reports to the Project Manager/Engineer concerning safety, health and welfare of persons and damage to property as the Project Manager/Engineer may from time to time prescribe.”

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 be available on the Site. The Contractor shall, before the commencement of the work at Site, seek the approval of the Project Manager/Engineer as to his detailed requirements of electricity, water and gas for the entire Contract period. The Contractor shall pay the Employer at the rates/cost incurred by the Employer. 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 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”.

The following new Sub-Clauses 16.4 and 16.5 are added:

Sub-Clause 16.4 Photographs of Works and Advertisement Prohibited

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 exhibition shall be immediately removed if the Employer so requires.

Sub-Clause 16.5 Training of Employer's Staff

The Contractor shall provide such facilities for the training of Employer's staff for operation and maintenance of installed systems, 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 language of training at the above stated premises shall be English and Urdu.”

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 his 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 Licences

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 18.16 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 Manager/Engineer and vice-versa, unless mutually agreed between the Employer/Project Manager/Engineer 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 against the same.

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 Project Manager/Engineer may from time to time prescribe.

Sub-Clause 18.11 Reporting of Accidents

The Contractor shall report to the Project Manager/Engineer details of any accident as soon as possible after its occurrence. In the case of any fatality or serious accident, the Contractor shall, in addition to appropriate action required under the law, notify the Project Manager/Engineer 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 18.13 Housing for Labour

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

Sub-Clause 18.14 Epidemics

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

Sub-Clause 18.15 Supply of Water

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

Sub-Clause 18.16 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 Project Manager/Engineer, his detailed method statement(s) for the execution of such items of work as may be desired by the Project Manager/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.”

The following new Sub-Clause 19.4 is added:

Sub-Clause 19.4 Use of Pakistani Materials

“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.”

The following new Sub-Clause 20.6 is added:

Sub-Clause 20.6 Witnessing of Factory Acceptance Tests (as applicable):

If deemed necessary by Employer, Factory acceptance tests shall be witnessed by the personnel (one each) of the Employer and the Project Manager/Engineer. All costs in connection with witnessing of the factory acceptance tests by the Employer and the Project Manager/Engineer shall be borne by the Contractor.

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 Project Manager/Engineer or the Employer or in consequence of

any of the Employer's Risks under Sub-Clause 37.2.”

In the last paragraph, the word twenty eight (28) will be replaced with seven (7).

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 at the place of the project mentioned in the Preamble to Conditions of Contract shall be completed tested and commissioned within the period mentioned in the Preamble to Conditions of Contract.”

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.

The following new Sub-Clause 26.4 is added:

Sub-Clause 26.4 Rate of Progress

“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 Project Manager/Engineer, too slow to comply with the Time for Completion, the Project Manager/Engineer shall so notify the Contractor who shall thereupon take such steps as are necessary, subject to the consent of the Project Manager/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 Project Manager/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 Project Manager/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 Project Manager/Engineer shall notify the Contractor accordingly, with a copy to the Employer.”

Sub-Clause 27.1 Delay in Completion

The text of 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 28.1 Notice of Tests

The text of Sub-Clause 28.1 is amended as follows:

Unless otherwise agreed, the Tests shall take place within three (3) days on such day or days as the Engineer shall notify the Contractor.

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 Project Manager/Engineer”.

Sub-Clause 29.3 Use before Taking Over

Sub-Clause 29.3 is deleted.

Sub-Clause 30.4 Extension of Defects Liability Period

At the end of 4th paragraph of Sub-Clause the following is added:
“or a mutually agreed period.”

Sub-Clause 30.5 Failure to Remedy Defects

In first line after the words “reasonable time” the following is added:
“fixed by the Project Manager/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 Project Manager/Engineer's Right to Vary

The text of Sub-Clause 31.1 is deleted and substituted by the following:

Being a fixed Lump Sum Turnkey Contract for Modification of Trash Collection and Diversion Mechanism, any price variation due to alteration, amendment, omission, addition or variation in Contractor's Estimated Volume of Work will be borne by the Contractor. The Contract Price corresponds to a complete, functional and effective mechanism complying with Scope of Work/ Technical Specifications.

No such variation shall in any way vitiate or invalidate the Contract. 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.

The Contractor may, however, at any time propose variations of the Scope of Work as Additional Works to the Engineer that may be compensated through a Variation Order. The Contractor shall not vary or alter Scope of Work, except in accordance with a Variation Order issued by the Engineer.

Rates determined by the Engineer as per this clause will be deemed as ceiling price for the execution of Works under variation order. Before ordering for the work, Contractor shall submit three (3) quotations to the Employer that are qualified to supply or perform the services. Selection will be made on the basis of Least Cost. When applying for payment, the Contractor shall submit invoices, vouchers or receipts for any goods or works and will be reimbursed as per actual.

Sub-Clause 31.3 Disagreement on Adjustment of the Contract Price

Sub-Clause 31.3 is deleted in its entirety.

Sub-Clause 31.4 Contractor to Proceed

In the second paragraph, the words “or an adjustment to the Contract Price under Sub-Clause 31.3”, shall be deleted.

Sub-Clause 31.5 Records of Costs

The words “the adjustment to the Contract Price” in the second line of Sub-Clause is deleted and substituted by “Price”.

The word “Engineer” in 4th line of Sub-Clause is deleted and substituted by “Project Manager/Engineer/Employer”.

The following new Sub-Clause 31.6 is added:

Sub-Clause 31.6 Value Engineering

Bidding Documents

The Contractor may, at any time, submit to the Project Manager/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:

"The EPC/Turnkey Contract shall be payable for the following items on Lump Sum Basis. Completion of all activities or heads listed in each Schedule shall form a payment milestone and payment terms shall be linked to the milestone performance of the EPC contractor. Pertaining to completion of work of the particular Schedule of Price the contractor qualifies for raising a bill as per Payment Schedule prescribed in Sub-Clause 33.13.

Schedule No. 1 Design Services

Except for As-Built Drawings, Payment milestone includes approval of Design Documents and Drawings pertaining to the Schedule by Project Manager/Engineer.

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Schedule No. 2 Civil Works, Installation and Other Services

Payment milestone includes successful testing and commissioning of Works and Installation etc. for activities pertaining to the Schedule marked by issuance of Test Certificate by the Project Manager/Engineer.

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Schedule No. 3 Supply of Plant (E&M Works) (Pre Engineered Structures) including Fixtures and other materials & goods

Payment milestone includes successful testing and commissioning of systems/equipment for activities pertaining to the Schedule marked by issuance of Test Certificate by the Project Manager/Engineer.

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Schedule No. 4 Grand Summary of Bid Prices

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Advance Payment Security

The Contractor shall 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.”

After Contractor’s Mobilization at site and if so requested by the Contractor in writing, the Employer shall make advance payment of one (1) week’s expenses estimated on the basis of contract value on submission of Bank guarantee from any scheduled bank of Pakistan. This amount shall be set off at the rate of 25% of advanced amount from each payment due to the Contractor as per Sub-clause 33.13.

The following new Sub-Clauses 33.1.1 to 33.1.5 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 Project Manager/Engineer.”

Sub-Clause 33.1.3 Extra Payment

No extra payment in respect of overtime, additional materials, or special conditions or hardship shall be claimed by the Contractor unless otherwise provided in the Contract or such payments have been previously authorized in writing by the Project Manager/Engineer or the Employer.

Sub-Clause 33.1.4 Breakdown of Lump Sum Items

For the purposes of statements to be submitted in accordance with Sub-Clause 33.1 hereof, the Contractor shall submit to the Project Manager/Engineer, within twenty eight (28) days after the receipt of the Letter of Acceptance, a breakdown for each of the lump sum items contained in the Bid. Such breakdowns shall be subject to the approval of the Project Manager/Engineer.”

Sub-Clause 33.2 Method of Application

The text of Sub-Clause 33.2 is deleted and substituted by the following:

“The Contractor shall submit to the Project Manager/Engineer six (6) copies of the Application for Certificate of Payment (invoices) in respect of the progress of the Works related to milestones specified in Sub-clause 33.13, accompanied by such evidence of the value of the work done as the Engineer may require, each signed by the Contractor and in such form as the Employer/Project Manager/Engineer may from time to time prescribe.

The Project Manager/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/Project Manager/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/Project Manager/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/Project Manager/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 Project Manager/Engineer pursuant to Sub-Clause 33.13, 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 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 and Contractor; Provided that the Interim Payment shall be caused in thirty (30) days and Final Payment in forty two (42) days in case of foreign funded project.

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 percent for local 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 Project Manager/Engineer from approved drawings, Specifications and Contract Documents. Payment shall be made for approved work on Lump Sum basis as per applicable milestone.

Sub-Clause 33.10 Issue of Final Certificate of Payment

Bidding Documents

The following paragraph is added at the end:

“The final certificate of payment is also subject to the production of “As-Built Drawings” by the Contractor as per Sub-Clause 6.10 of particular Conditions of Contract.

The following Sub-Clauses 33.12 and 33.13 are added:

Sub-Clause 33.12 Withholding of Payment

If the Works or any parts thereof are not being carried out to the Project Manager/Engineer's 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 Project Manager/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 Project Manager/Engineer shall upon being satisfied to that effect issue Certificate of Payment in respect of withheld amounts.

Sub-Clause 33.13 Payment Schedule

The payment will be made on Milestone basis mentioned below which will be subject to submission of bills/invoices.

Deliverables	Payment Schedule
Approval of Design Documents and Drawings	15% of Contracted amount
Successful testing and Commissioning of Civil Works, Foundations and Installations	15% of Contracted amount
Successful testing and Commissioning of E&M Works and Installations for Floating boom and modifications to TRCM	50% of Contracted amount
Final Performance Test	20% of Contracted amount

The Employer shall reimburse to the Contractor in Pakistani Rupees for the expenditures incurred in respect of the Services in line with payment schedule, substantiated by receipts, vouchers and other appropriate supporting documents/materials, of the amount reimbursable.

Within fifteen (15) days after receipt of the Letter of Acceptance, the Contractor shall submit

work schedule incorporating payment milestones indicating the payment throughout the currency of the Contract in line with sub-clause 33.1. This schedule shall be in a format satisfactory to the Employer and the Project Manager/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:

Payment will be made in Pak. Rs. only on Lump Sum basis on achievement of milestones as provided in Sub-clause 33.13.

Sub-Clause 36.4 Payment Against Provisional Sums

The text of Sub-Clause 36.4 is deleted and substituted by the following:

“Provisional Sums, if any, will be expended on the direction of the Project Manager/Engineer through Variation Orders which would be valued in accordance with the provisions of 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 Project Manager/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 Project Manager/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 Project Manager/Engineer”.

The following new Sub-Clause 39.4 is added:

Sub-Clause 39.4 Duty to Minimize Delay

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 from the words “death or personal injury” to the end of the Sub-Clause, is deleted and substituted by the following:

“..... (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 words “the sum stated in the Preamble to Conditions of Contract or if no such sum is stated” appearing in 2nd line of Sub-Clause are deleted.

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 therefrom, lightning, strike, riot, civil commotion, escape of water, inundation, rain, snow, land slides, 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) If applicable, 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 % CIF value at the Site for each consignment of the Plant or part thereof plus not less than 30 % of CIF 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 to be erected
 - (ii) Ex-factory value of Indigenous Plant to be erected, if any
 - (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

In 3rd line after the word, “purpose”, the expression “and reasonable costs including the man-hours costs of Employer's Personnel” is added.

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 fourteen (14) 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 effected 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

At the end of the Sub-Clause 44.6 the following is added:

“However the Contractor shall put up his claim to the Employer / Project Manager/Engineer 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 Manager/Engineer'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 45.4 Payment after Termination

The text of Sub-Clause 45.4 is deleted and substituted by the following:

“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 Project Manager/Engineer shall certify the total cost of such completion of Works.

The Employer may recover the extra cost of such completion, as certified by the Project Manager/Engineer, from any sums otherwise due and payable to the Contractor and/or by disposing of the Contractor's Equipment and stores taken over by the Employer under this Clause or as otherwise provided by law. If there is no such extra cost the Employer shall pay any balance due to the Contractor.”

The following new Sub-Clause 45.6 is added:

Sub-Clause 45.6 Integrity Pact

If the Contractor, or any of his Subcontractors, agents or servants is found to have violated or involved in violation of the Integrity Pact signed by the Contractor as 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 words “including loss of profit” in the second paragraph of Sub-Clause 46.3 are deleted.

Sub-Clause 47.1 Labour, Materials and Transport

Sub-Clause 47.1 is deleted in its entirety.

Sub-Clause 47.2 Statutory and Other Regulations

Sub-Clause 47.2 is deleted in its entirety.

Sub-Clause 48.1 Local Taxation-Custom and Import Duties

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.

Sub-Clause 48.2 Clearance through Customs

Sub-Clause 48.2 is deleted in its entirety.

The following Sub-Clause 48.3 is added:

Sub-Clause 48.3 Port Charges and Port Congestion

“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 Project Manager/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

Clause 50 is deleted and in its place 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 Project Manager/Engineer, the matter in dispute shall, in the first place, be referred in writing to the Project Manager/Engineer, with a copy to the other party. Such reference shall state that it is made pursuant to this Clause. No later than the thirty (30) days after the day on which he received such reference, the Project Manager/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 Project Manager/Engineer unless 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 Project Manager/Engineer is to be final and conclusive, such decision shall not be referable 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 Project Manager/Engineer or if the Project Manager/Engineer fails to give notice of his decision on or before the thirtieth (30) 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 thirty (30) 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 Project Manager/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 Project Manager/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 Manager/Engineer's decision.

- 50.4 Any dispute in respect of which:

- (a) the decision, if any, of the Project Manager/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, certificate or valuation of the Project Manager/Engineer for the purpose of obtaining said decision pursuant to Sub-Clause

50.1. No such decision shall disqualify the Project Manager/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.

53.1 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.

53.2 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.

53.3 Income Taxes Provisions in Subcontracts

Provisions to the like effect as those contained in this Clause shall be incorporated in Subcontracts.

54. 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. The rates and prices stated in the priced Schedule of Prices shall be deemed to cover all related costs.

55. Joint and Several Liability

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

56. Details to be Confidential

The Contractor shall treat the details of the Contract as private and confidential, save in so far as may be necessary for the purposes thereof, and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere without the prior consent in writing of the Employer or the Project Manager/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 Project Manager/Engineer whose award shall be final.

STANDARD FORMS

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 Punjab Power Development Compnay Limited, (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 “**Modifications in Trash Collection and Installation of Trash Diversion Mechanism at 2.82 MW Pakpattan Hydropower Plant**”, (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,

Bidding Documents

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 fourteen (14) 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 **Punjab Power Development Company Limited (PPDCL) Energy Department, Govt. of Punjab, Lahore,** (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 **Modification in the Trash Collection and Installation of Trash Diversion Mechanism at 2.82 MW Pakpattan Hydropower Plant (“Project”)** should be executed by the Contractor and has accepted a Bid by the Contractor.

WHEREAS in consideration of the payments to be made by the Employer to the Contractor, 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.

NOW IT IS HEREBY AGREED as follows:

Article 1 Contract Documents

1.1 Contract Documents

The following documents shall constitute the Contract between the Employer and the Contractor, and each shall be read and construed as an integral part of the Contract:

- (a) This Contract Agreement and the Appendices hereto.
- (b) Letter of Acceptance
- (c) Letter of Price Bid and Price Schedules submitted by the Contractor.
- (d) Letter of Technical Bid and Technical Proposal submitted by the Contractor including completed Form of Bid and completed Schedules to Bid (A to L)
- (e) Preamble to Conditions of Contract
- (f) Particular Conditions of Contract
- (g) General Conditions of Contract
- (h) Specification-Technical and Special Provisions.
- (i) Drawings.
- (j) Other completed Bidding Forms submitted with the Letters of Technical and Price Bids.
- (k) Minutes of meeting of the pre-award meeting, before award of contract, endorsed by BoD of PPDCL.
- (l) Operation & Maintenance Manual.

1.2 Order of Precedence

In the event of any ambiguity or conflict between the Contract Documents listed above, the order of precedence shall be the order in which the Contract Documents are listed in Article 1.1 (Contract

Documents) above.

1.3 Definitions

Words and expressions used herein shall have the same meanings as are ascribed to them in the General Conditions of Contract.

**Article 2
Contract Price and
Terms of Payment**

2.1 Contract Price

The Employer hereby agrees 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.

2.2 Terms of Payment

The terms and procedures of payment according to which the Employer will reimburse the Contractor are given in the Conditions of Contract.

**Article 3
Effective Date**

3.1 Effective Date

The Contract shall become effective from the date when all of the following conditions have been fulfilled:

- (a) The Contractor has submitted to the Employer the performance security
- (b) This Contract Agreement has been duly executed for and on behalf of the Employer and the Contractor has mobilized at site;

Each party shall use its best efforts to fulfill the above conditions for which it is responsible as soon as practicable.

**Article 4
Communications**

4.1 The address of the Employer for notice purposes

Chief Executive Officer, PPDCL

3rd Floor, Mega Tower,
63-B Main Boulevard, Gulberg II, Lahore, Pakistan

**4.2 The address of the Contractor for notice purposes, is:
[Contractor's Address]**

**Article 5.
Appendices**

5.1 The Appendices listed in the attached List of Appendices shall be deemed to form an integral part of this Contract Agreement.

5.2 Reference in the Contract to any Appendices shall mean the Appendices attached hereto, and the Contract shall

be read and construed accordingly.

IN WITNESS WHEREOF the parties hereto have caused this Agreement to be executed by their duly authorized representatives the day, month and year first above written.

[Legal Name of Employer]

By:

Witness:

Signature-----

Signature -----

Name:

Name:

Title:

Title:

Seal:

[Legal Name of EPC Contractor]

By:

Witness:

Signature-----

Signature -----

Name:

Name:

Title:

Title:

Seal:

**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 **Punjab Power Development Company Limited (PPDCL) Energy Department, Govt. of Punjab, Lahore, Pakistan** (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 “**Modifications in Trash Collection and Installation of Trash Diversion Mechanism at 2.82 MW Pakpattan Hydropower Plant.**”

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.

Bidding Documents

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

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

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

Guarantor (Bank/Approved Insurance Co.)

Witness:

1. _____

Signature _____

Corporate Secretary (Seal)

Name _____

Title _____

2. _____

Name, Title & Address

Corporate Guarantor (Seal)

FORM OF BANK GUARANTEE FOR ADVANCE PAYMENT

Guarantee No. _____

Executed on _____

Expiry date _____

WHEREAS the **Punjab Power Development Company Limited (PPDCL) Energy Department, Govt. of Punjab, Lahore, Pakistan** (hereinafter called the Employer) has entered into a Contract for _____

_____ (Particular
ars 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

Bidding Documents

amount to be claimed hereunder.

Witness:

1. _____

Corporate Secretary (Seal)

2. _____

Name, Title & Address

Guarantor (Bank)

Signature _____

Name _____

Title _____

Corporate Guarantor (Seal)

TECHNICAL SPECIFICATIONS

1. SCOPE OF WORKS

1.1 GENERAL

Excessive quantity of weed in Pakpattan Canal is disrupting the continuous and effective operation of the power plant as well as jeopardizing plant and equipment safety. Consequently, frequent and unscheduled/forced outages at plant are borne by shutting down the plant to divert this excessive quantity of trash through powerhouse spillway which in turn reduces plant operation time and thus power output. Frequency of plant shut downs is increased in summer especially during rainy season on account of excessive trash in canal water.

1.2 INTRODUCTION OF THE PLANT

Punjab Government availed loan from Asian Development (ADB) for the construction of four (4) Hydropower Plants at Marala (7.64 MW), Chianwali (5.38 MW), Deg Outfall (4.04 MW) and Pakpattan (2.82 MW) under Renewable Energy Development Sector Investment Program (REDSIP). Punjab Power Management Unit (PPMU) was established for implementation of the projects. The low head run-of-river type Pakpattan Hydropower Plant is envisaged on Upper Pakpattan Canal (UPC) downstream its head regulator at about RD 114+650 and the estimated plant capacity was established as 2.82 MW in bypass arrangement. PPMU has utilized the International Competitive Bidding (ICB) mode for the execution of Pakpattan Hydropower Project. M/s SINOTEC-SHPE-JV was appointed as Contractor for providing construction and development services on EPC / Turnkey basis.

1.3 OPERATION OF THE PLANT

The Pakpattan Hydropower Project has been constructed without storage in the power channel in by-pass arrangement. PPMU completed 2.82 MW Pakpattan Hydropower Plant and handed over to Punjab Power Development Company Ltd. (PPDCL) in Feb, 2017, which is an autonomous body under Punjab Energy Department for Operation & Maintenance of the plant as per ADB loan covenant. The PPDCL has engaged the services of O&M Contractor namely M/s Hydrotech Pak Private Limited (HTPPL) for a period of three (3) years i.e. from 20th March 2019 to March 21, 2022 through Competitive Bidding process. The Pakpattan Hydropower Plant was commissioned in August, 2016 and its commercial operation was started in February 2017 by PPDCL through O&M Contractor. The electricity produced by PHPP is being sold to MEPCO through dedicated 11 kV interconnection/transmission arrangement.

2. SALIENT FEATURES OF PAKPATTAN HYDROPOWER PLANT

Pakpattan Hydro Power Plant (PHPP) is situated on Pakpattan Canal at R.D:114+650 at 16 Km from Pakpattan City, Punjab Province and has two Turbine–Generator Units with 1.41 MW generation capacity each. Type of the turbine is “Double regulated horizontal shaft, Pit type tubular Kaplan” and generator is air cooled synchronous type. Technical & salient parameters of the plant are as under:-

Sr. No	DESCRIPTION	UNIT
HYDROLOGY		
a.	Mean Annual Discharge	64 Cumecs
b.	Total Annual Flow	2029 Mill.m ³ /yr
DIVERSION SPILLWAY		
a.	Spillway Type	Gated (Radial)

Bidding Documents

b.	Crest Elevation Broad Crested	166.074 masl
c.	Crest Length	.4 m
d.	Maximum Height	2.856 m
e.	Design Discharge	113 Cumecs
HEADRACE & TAILRACE CHANNEL		
a.	Length (L) x Width (W)	608x45.70 m
		425x45.71 m
b.	Bed Slope	0.000125
POWER PLANT		
a.	Rated Discharge	2826 Cusecs
b.	Head Water Level Just u/s of Powerhouse	167.930 masl
c.	Max. Tail water Level just d/s of Powerhouse	164.073 masl
d.	Min. Tail water Level just d/s of Powerhouse	162.136 masl
e.	Turbines Rated Output of Turbine (Nr)	1410KWh
f.	Rated Discharge of Turbine (Q)	1414Cumecs
g.	Rated Net Head (Hr)	4.2 m
h.	Design discharge	112.57 Cumec
i.	FSL u/s of Spillway	167.930 masl
j.	Bed Level u/s of Spillway	165.339 masl
k.	FSL d/s of Spillway	164.073 masl
l.	Bed Level d/s of Spillway	161.483 masl
m.	Crest Level of Spillway	166.074 masl
TRASH RACKS		
a.	Length of Trash Rack Screen	9.164 mtr
b.	Width of Trash Rack Screen	6.825 mtr
c.	Vertical Height of the Trash Racks	12.896 mtr
d.	Trash Racks Bar Spacing	0.150 mtr
e.	Angle of inclination	80°
f.	No of Intake Bays	2

The canal water carries bulk quantity of the trash and canal weed. This excessive quantity of weed is disrupting the smooth and effective operation of the plant which may also jeopardize plant and equipments safety. Consequently, frequent and unscheduled/forced plant outages are borne by shutting down the plant and later on in diverting this excessive quantity of trash through powerhouse spillway. Generally out of all aquatic plants causing this problem, Water Hyacinth has been classified as a major floating debris. Excessive growth of these floating plants is causing detrimental effects on water bodies by gradual filling and impeding water flow in power house intake passage.

These plants normally start germinating in the month of March and keep on flourishing till May. During rainy season, plants are uprooted due to high velocity of water and start traveling along the irrigation channel. Survey of Sulemanki Head works and Pakpattan canal has shown that aquatic plants grow in abundance at a sketch of 15x2 km² upstream of Sulemanki Head works in the form of contiguous colonies. The plants are also growing in different patches at the berms of Pakpattan Canal. Survey of the canal in its reach from R.D: 0 to R.D: 152 showed presence of many enroued and floating plants. It is observed that these aquatic plants appear to have some

entry from Ravi River through Balloki Sulemanki Link Canal as these also exist in the form of scattered colonies along sides of River Ravi upstream Balloki Head works.

3. CANAL DEBRIS CHARACTERIZATION

3.1 CAUSES AND TYPES OF DEBRIS

Pakpattan Canal Upper off-takes from Sulemanki Headwork's and is a perennial channel. The problem of entry of unwanted floating matter (aquatic plants) has been existing for many years and exacerbating with passage of time. Pakpattan canal passes mainly through agricultural lands and much populated areas. Although a variety of debris exists in Pakpattan Canal, which can be classified mainly into three types as explained below:

SMALL DEBRIS which includes small branches, leaves, and garbage. Because of its small size, this debris can be transported into the flow by a variety of ways. In addition to the mechanics by which larger debris enters the flow, small debris can enter through wind events and seasonal variations, resulting in loss of foliage.

MEDIUM DEBRIS consists mostly of larger branches and can enter the flow through runoff stream, because of bank erosion or under growth, shrubberies, the breakdown of larger debris, and through flood events.

LARGE DEBRIS consisting of very large branches of trees and bush woods, can enter the flow in many of the same ways as medium debris, the debris often enter the main flow via runoff. Large debris most commonly enters the flow either during a flood event or because of bank erosion. Not surprisingly, the magnitude of a flood event and the concentration of debris within the floodplain also greatly affect the amount of debris that enters the flow. Any time there are long periods between flood events, debris problems can be anticipated, and the first major flood event of the year typically carries the greatest amount of debris into a river.

"MAN MADE WASTES" include municipal solid waste, household trash, dead animals, dead poultry and others, scrap and discarded material, agriculture waste etc.

The canal water is dominantly contaminated by naturally floating & biodegradable waste (70.0%), submerged trash (20.0 %) and man-made/miscellaneous trash (10.0%) approximately. Addition of such material is marginally disturbing the operation and maintenance of the canals as well irrigation infrastructure. Generally Type of debris coming with canal water are:-

- Natural floating debris & Water hyacinth
- Submerged material
- Manmade wastes, dead animals and dead poultry etc.

The different types of debris are explained in **Appendix-A**.

4. TRASH COLLECTION MECHANISM

4.1 TRASH RACKS

The trash racks are provided at the power intake area to prevent debris throughout the water column and are intended to protect against entrance of debris or other large size trash in the turbines. The trash racks are sectionalized for ease of handling and inserted in embedded guides in the piers. Embedded parts i.e. sill support, lintel beam and the lateral piers are installed in second stage concrete. The trash racks are designed for a 140 % rated flow through each turbine. Each trash rack is provided with head differential measuring equipment with an alarm system during clogging by debris (**Appendix-B**).

The trash racks panels are placed in front of the power house intake and are designed to keep debris and other obstacles away from the water path to prevent jamming or damage to the machinery and to ensure safe power production. For this excessive trash, the turbines intake passage is clogged and due to increased suction pressure water flow becomes turbulent and possess undue stress on hydraulic structure and equipment vibrations are increased. Eventually power plant has to shut down to pass on this heavy trash through spillway.

4.2 TRASH RACK CLEANING MACHINE

An Electrically operated Trash Rack Cleaning Machine (TRCM) as shown in **Appendix-C** has been provided with a winch operated debris raking beam on the deck of the powerhouse. It is designed for cleaning the debris accumulated in front of the trash racks with a load lifting capacity of approximately 0.5 tons. The TRCM has been supplied by the Wuxi Junda Electrical & Mechanical Manufacturing Co. Ltd P.R. China. The bucket of the TRCM finds a capacity of approximately 2 m³. The TRCM works automatically and manually too. The TRCM is movable transversely to the intake structure beneath the intake deck and throws the debris into the dump container located beside the TRCM. The control of the TRCM depends upon an adjustable swimmer switch just behind the trash racks.

4.3 TRASHRACK CLEANING OPERATION

The existing TRCM is of cable-operated rack type. It can be operated both manually by an operator and automatically without an operator. The TRCM consists of grab unit, movable cart, guide rail and electronic control system. The grab unit includes the grab bucket hydraulic unit and wire rope hoist. The movable cart includes grab bucket hoist and hydraulic hopper closing actuator. It is driven by the reduction motor mounted at its top. The movable cart is directly mounted onto the output shaft of the gear box. The trash raking machine rides on deck-mounted rails to traverse the structure to allow cleaning all of the trash racks. The grab rake is also designed to pick up larger objects and to drift floating debris.

4.4 ISSUES WITH EXISTING TRASH COLLECTION ARRANGEMENTS

The TRCM is lowered in open position. At the bottom of the trash rack, the TRCM bucket is closed and lifted again. The debris collected from the rack-bars are then lifted over the sliding plate in front of the trash rack cleaner and dropped into the container or flushing conduit or other storage place. During cleaning, the bucket ribs do not fit properly between the rack bars and remains away from the rack bars instead due to free falling down and its dislocated Centre of gravity (C.G) and debris/ clogged material simply stays between the racks mesh rather being cleaned by TRCM.

- a. TRCM does not remove submerged trash completely while turbines are in running and plant is operational. It is possibly due to high suction pressure at the turbine intake area. In addition of suction pressure, trashrack vibrations may be the reason due to which the trash is not collected during water flowing through the trashrack , which need to be addressed. As a result submerged trash remains fixed around the trash rack bars as shown in photographs given below. However when machines are stopped, trash gathered around the rack bars is pushed back by turbines backward water and in this condition TRCM grabs almost all the trash as shwon in **Appendix -D**.Trash which we remove mostly include water hyacinth, tree roots, plastic bags, plastic wrappers, Agriculture waste dead animals etc. Most problematic trash is water hyacinth and plastic bags. Some of trash

stuck on vertical rack bars and other on horizontal steel rods inside the trash rack panels, which TRCM do not remove completely. The stretchy and flexible trash is normally wrapped around the vertical ribs and horizontal steel bars. Functioning of the TRCM has been explained through pictorial demonstration given in **Appendix -E**.

- b. Trash rack machine grabs much more trash as compared to the condition when units are in operation. The submerged trash stick with the trash rack bars and steel structure due to increased suction pressure when units are in operation because the suction pressure increases as the guide vanes open and load is increased. Photographs given in **Appendix-F** show the clear difference in volume of trash collected while units were under operation and on other hand when units were stopped.
- c. It is observed that floating trash typically water hyacinth remains away from the range of TRCM. On account of water whirling in intake area floating trash remains away and neither comes in the range of TRCM despite bulk trash is available in front of intake bay. Trash rack panels start approximately 3.7 meters down from the surface, incoming water when strike & stays with concrete and returns back then, as a result a backwards flow pattern is developed which do not allow the floating trash to come into the range of TRCM bucket and keeps trash away from concrete wall structure. The phenomenon can be seen in the pictures as given in **Appendix -G**.

4.5 EFFECTS OF EXCESSIVE TRASH IN CANAL WATER

Accumulation of excessive trash in power canal has the following detrimental effects on the power plant.

- (i) Loss of machinery & plant Equipments
- (ii) Loss of head
- (iii) Loss of revenue & energy

4.6 HOW TRCM WORKS NORMALLY

The trolley travels in a narrow path supported above the screen using beam and frame supports. The brake motor ensures precise movement of the trolley in either direction. There are two independent cable-slack detectors integrated into the two separate cable reels in the hoist, eliminating the need for rollers turning against the cables. The asymmetric grab consisting of a prong carrier with fixed prongs and a hydraulically controlled swiveling collecting basket is suspended on the two cables. A compact hydraulic motor in the trolley supplies hydraulic fluid, and is connected to the actuators on the grab by a double hose.

The trolley moves over the screen, the hoist motor is switched on and the grab is lowered.

- i- The grabber prongs slide between the screen elements. Limiters prevent the grab catching behind the cross-members in the screen.
- ii- The descending grab collects the screenings from the water surface to the bed.
- iii- Once the grab arrives at the bed, the grab closes and the hoist motor is switched on.
- iv- Once it has reached its upper position, the hoist motor is switched off and the traction motor is switched on.
- v- The grab opens above the screenings dump to allow the screenings to fall. After that, the trolley travels back to the screen for cleaning to continue.

4.7 OBSERVATIONS AS REGARDS EXISTING TRASH RACK CLEANING SYSTEM

Irregular velocity and improper flow of water at turbines intake due to continuous penetration of waste and debris at trash screen causing substantial damages to generation capacity of power house. It is observed that intake screens are blocked due to heavy trash and floating debris. The existing trash cleaning mechanism is not capable of cleaning such excessive trash which sometimes also results in malfunctioning of system.

- Trash racks are installed close to the turbines. Normally course screens should be installed at a distance of 250-1000 meters upstream of turbine intake and fine screen is installed at inlet side.
- The cleaning machine trolley/bucket movement over the trash screen is irregular and unbalanced due to dislocated center of gravity and being of lesser weight..
- The grabber prongs don't slide accurately with rack bars, and rack panels are not cleaned properly even still remains blocked and similarly disrupting the water passage.
- The grabber has two rollers on top for travel which are deformed, rough and un-even and mis-adjusted also. Bushes are also required to be checked for right orientation and truness in addition to the condition of Rollers.

Once the grab collects the debris, the trash screen cleaning machine and its winch vibrates. Guides may be provided on the rack bars to fix the TRCM boom on the base frame for its compactness and sliding movements.

- The machine rotation assembling mounted over the roof is designed for Load capacity of 500 KG. But during sucking force of turbine and water thrust, lot of pressure creates which produce vibration to the complete system.
- Single trash screen has been used for controlling the debris and waste of the PCU Canal. The cleaning machine is not capable for all such trash. The already installed trash screen is not fine, the members are not designed for small waste like heap of bottles, plastic bags etc.

5. CONTRACTOR RESPONSIBILITY

5.1 MODIFICATIONS

The scope of work shall includes study of design of existing trashrack cleaning machine, its capacities, submission of proposal, design of bucket, its guiding arrangement, C.G, fixing and guiding arrangement on the floor, trashrack vibrational analysis, provision of guides with the wall for smooth movement of bucket etc.

Modification and up gradation of exisisting TRCM bucket with smooth operation/ movement along the trash racks and of debris/ trash collection system.

5.2 REPLACEMENT WITH NEW BUCKET FOR COLLECTION OF WASTE

- i. The bucket/grabber of TRCM may be replaced with new design and dimensions.
- ii. The new design should be in accordance with the capacity of existing lifting mechanism of cleaning machine at Pakpattan HPP.
- iii. The current bucket/grabber is of light weight and vibrates / get dislocated in water due to water upwards pressure . New bucket or modified bucket is desired to be in placed with additional weight to achieve its right Centre of Gravity (CG) and positive contact with trash racks body.

5.3 PROVISION OF FLOATING BOOM

Keeping in view the topography and alignment of power canal & existing water regime at intake area at Pakpattan Hydropower Plant, it is desired to provide floating boom /barrier. Pictorial description of the Floating boom with steel wire ropes and adjustable clamps has been explained in (Appendix –H)

6. DETAILED DESIGN AND PLANNING OF THE WORKS

The Contractor shall perform Engineering, Procurement & Construction (EPC) regarding detailed design of the Works, its planning and implementation in accordance with accepted international standards. The EPC Contractor shall utilize best engineering practices while performing works at site. In addition, the Contractor shall establish a Quality Control/Quality Assurance program to verify that the Work performed by the Contractor is in accordance with the requirements of the Contract.

6.1 QUALITY ASSURANCE MANUAL

The Plant and Equipment covered under this Contract will be subjected to inspection and testing. The Contractor shall provide all services to establish and maintain quality of workmanship in his works and that of his Sub-contractors to ensure the mechanical accuracy of components, compliance with drawings. The bidder shall incorporate the test /inspection plan as mandatory part of Quality Assurance Manual regarding inspection of the material / equipment before , during , after completion of the works.

The minimum inspection requirements for all components/ equipment shall conform to the design and fabrication requirements as defined in the referenced Codes and Standards. The type of inspection will be prescribed or agreed upon by the Employer, and will include, if applicable inspection procedures prescribed by Codes and Regulations recognized by the Governmental authority having jurisdiction over the installed goods.

6.2 DETAILED DESIGN

All Designs shall be prepared in accordance with the requirements given in the following Section 6.3, “Basic Design Requirement” of the project. The Design responsibilities of the Contractor shall be as follows:

- a. The Contractor shall carry out the detailed design and prepare construction drawings of the Permanent Works to be performed under this Contract.
- b. The Contractor shall prepare the detailed design and construction drawings of the necessary Temporary Works to be performed under this Contract.
- c. The Contractor shall prepare Construction Methodology and an Implementation Plan to perform the works in line with the quality assurance & quality control document. .
- d. The Contractor shall prepare the detailed design and shop drawings of the Floating Boom, and Modification in Existing TRCM Bucket under this Contract and shall get approval from the Engineer before implementation.
- e. The activities to be performed under the detailed design are outlined below:
 - Expansion and clarification of design criteria and parameters.
 - Review and summary of all tests and investigations planned to be carried out in connection with the detailed design.
 - Design calculations.

- Contractor's Drawings.
 - Report on construction methods to be used for all major works.
 - Manufacturing and delivery schedule for major equipment.
 - Layout drawings for all works.
 - Principal items of erection equipment to be used.
 - Quality Control and Quality Assurance procedures for Construction/ completion of works.
 - Construction security, health and safety plans.
 - Basic outline of the Operation and Maintenance Manuals, and Training Program for the Employers engineers / staff.
- f. For each structural feature of the project, the Contractor shall prepare detailed design documentation to include the following as a minimum for the review of Employer:

6.3 DESIGN REQUIREMENT

The permanent works shall be designed to the latest international standards relevant to the particular section of works. Where there are differences between the various standards, the most conservative standards shall be adopted. The Contractor shall study in depth the existing trash cleaning infrastructure, the canal designed x-sections and intensity of trash/weed.

Temporary works shall be designed to be safe, reliable, and adequate for all loads and uses, and where they are to be incorporated into the permanent works, temporary works shall be designed in strict compliance with the criteria adopted for the permanent works.

6.4 OPERATION AND MAINTENANCE

The Contractor shall provide operation and maintenance manuals for all equipments supplied under this contract.

6.5 COMPLIANCE WITH LOCAL REGULATIONS

In addition to the basic design criteria, the design shall also conform to the requirements of all relevant local, state and federal authorities where approvals for that section of works is needed from the relevant authorities.

6.6 ECONOMIC LIFE OF WORKS

The design shall be based upon a useful economic life not less than 10 years for equipment, assuming the Employer will operate the works and perform normal routine maintenance in accordance with the works operation and maintenance manual.

7. BASIC DESIGN REQUIREMENT

7.1 FLOATING BOOM

To capture and to divert, debris throughout the water column and to prevent debris from reaching the Power intake area, debris booms shall be provided . Debris booms shall be made of wooden logs, plastic or similar floating arrangements and shall be located upstream of the intake passage and shall be held in place by mooring line debris boom alongwith floating deflector to divert floating surface debris in front of power house spillway .

The Floating Boom shall be provided in the power intake Canal area and are intended to protect against entrance of debris or other large size trash entering the turbines. The Floating Boom shall be sectionalized for ease of handling and connected with the concrete piers for anchorage

purpose. Anchorage points shall have tidal compensators with suitable compensating limits between the range of maximum & minimum values of available net head i.e. 5.43 m and 4.18 m respectively ,

which will allow floating boom to rise and fall with the varying water levels. However the full supply level crossponding to the design discharge is 167.930 masl.

Proposed Floating Boom /barrier shall be fabricated by using two rows of steel drums held across wooden planks tied together with suitable clamping arrangements as illustrated by the sketch given below, finally overall assembly shall be tied up to strong concrete piers piled at both sides of canal by steel wire rope. The Contractor may also propose an alternate arrangement if it is superior to this, in his opinion subject to the approval of Engineer.

There shall be a walkway made up of wooden planks for the movement of operator between the two rows of drums and must be safe enough regarding the operation of the floating boom. In case of accumulation of excessive trash in front of floating boom, the operator can divert the trash manually towards spillway. Additionally, floating boom assembly shall be hooked through turn buckles arrangement from mid for support, to avoid sagging in case of overburden developed for excessive trash.

7.2 TRASH RACK CLEANING MACHINE (TRCM) BUCKET

Presently, an electrically operated trash rack cleaning machine TRCM is available with winch operated debris raking beam on the deck of the powerhouse. It is designed for cleaning the debris accumulated in the trash racks with a load lifting capacity of approximately 0.5 tons. The bucket of the TRCM has a capacity of approximately 2m³.

The existing bucket has arrangement for adjustments however new roller assembly with additional adjustment shall be required for collecting debris/ trash floating in canal. The existing bucket shall require a smooth and aligned path for movement through trash racks. Moreover the hydraulic gripper assembly requires additional adjustment to collect all types of trash/debris.

8. SPECIFICATIONS

The Contractor shall be required to prepare his design in accordance with Technical Specification Standards as stated here in. The Contractor however may use any other internationally recognized standard demonstrably equivalent or better than those described in these Technical Specifications.

8.1 EQUIPMENT STANDARDS

All equipment and parts related to engineering design concerning choice of materials, main dimensions and function should conform to latest international standards. For this purpose the bidder will specify in his bid the relevant standards for the main items of his supply and clearly identify the parts, operations, functions etc, to which each particular standard shall be applied. For example he must indicate the standards to be applied for design, calculations, materials and fabrication of the supply.

The following standards shall be preferred:

- DIN German standards, issued by Deutsches Institute fuer Normung e.V.
- JIS Japanese Standards Association
- ISO International Organization for Standardization
- IEC International Electro technical Commission
- ASTM American Society for Testing of Materials

- AWS American Welding Society
- ASME American Society of Mechanical Engineers
- NFPA National Fire Protection Association, USA
- ANSI American National Standards Institute
- IEEE Institute of Electrical and Electronics Engineers
- EN European Standards
- FEM Federation Europeens de la Manutention
- ASIC American Institute of Steel Construction
- BS British Standards Institute

Whichever standard has been or shall be applied, the latest revision or edition in effect at the time of the invitation of bidders shall apply and the Contractor shall make available one copy of such standards in English language. If other standards have been or shall be chosen, the Contractor shall supply copies of other standards in English language, clearly identifying or making reference to the particular chapters or sections that were applied.

The equipment and materials furnished under this Contract shall conform to the requirements of the Specification and to the designated Standards.

8.2 MATERIALS

All materials incorporated in the equipment supplied shall be new, suitable for the intended purpose and conforming to the latest issue of the specified standards.

Materials not specifically designated herein shall be subject to the approval of Employer's Representative, and shall as far as practicable comply with the latest issue or revision of the specified standards or their approved equivalent or better. The use of alternative materials having corresponding or higher quality and properties shall be acceptable without cost increase.

Material for general purposes shall have a quality equal to or better than the specified standards.

The Contractor shall clearly state which standards are applicable for different materials.

Following are the specified standards for materials:

Cast steel general engineering purposes	ASTM A 27, Grade 65-35 DIN1681 GS 45.3, WI. 0466
Iron castings gray	ASTM A 278 Class 35 DIN 1691, GG 25
Iron casting modular	ASTM A 536 DIN 1693 GGG 40 WI 7040
Flanged Joints	DIN Subject groups: 2810, 2820, 2850, 2870, 2880
Structural steel general	ASTM A 36 DIN 17100 RSt 37-2
Structural steel weld able fine grained	DIN 17102 DIN 17100 ST 52-3
Bronze castings	ASTM B 584 Alloy 2B

	DIN 1705, Rg 7
Bronze for bearing bushings thrust disc etc.	ASTM B584 Alloy 2B DIN 1716, SnPbBz 10
Welded and seamless steel piping	ASTM A 53 Grade A DIN 1626, 1628, 1629, 1630
Stainless steel piping	ASTM A 269 Grade type 304L DIN 17440, WI 4301
Stainless steel plates	ASTM A 269 Grade type 304L DIN 17440 WI 4301
Stainless steel casting	ASTM A 487 DIN 17445
Fine grained, normalized steel, general purpose	EN 10113
Fine grained, normalized steel, pressure vessels	EN 1 0028
Bolts and Nuts	ISO 898-2, ISO 898-1
Steel Wire	ASTM , A492

8.3 STEEL BRACKETS / CLAMPING ARRANGEMENTS

Suitable Clamping arrangements as illustrated by the sketch given in **Appendix-H** will be used to tie the two rows of Steel drums of floating boom. Clamping shall meet the flowing minimum requirements.

- Material ASTM A36
- Suitable width, length and thickness strong enough to sustain the accumulative load of the trash and steel drums in extreme loading conditions.
- Painting shall be done as per section 12

8.4 WOODEN PLANKS

There shall be a walkway made up of wooden planks for the operator between the two rows of steel drums. In case of accumulation of excessive trash in front of floating boom, the operator will divert the trash manually towards spillway by walking on the aforesaid wooden walkway platform. All scantling planks etc. shall be sawn straight and shall have uniform thickness. They shall be sawn in the direction of the grain and shall have full measurement from end to end. All planks and scantlings shall be sawn 1/16 inch in excess of actual measurement to allow planning. They shall be supplied with straight square edge, or rebated, ploughed, tongued or dwelled, as may be directed.

Wooden Walkway shall meet the flowing minimum requirements.

- Material : Deodar Wood

- Suitable width, length and thickness strong enough to sustain the accumulative load of the Operator in extreme loading conditions.
- Wooden planks shall have anti swelling properties in the water to avoid dislodging.

Wooden Planks shall have the side in contact with the water , therefore these shall be painted with two coats of hot solignum, creosote, coal tar or other wood preservatives approved by the Employer. If wooden planks are to be subsequently painted, the priming coat shall be painted on the wooden plank before they are fixed.

8.5 STEEL WIRE ROPE

For the purpose of anchorage of floating boom with concrete piers steel wire rope shall be used. Steel wire rope shall meet the flowing requirements.

- Galvanized steel Wire Rope of suitable dia, strong enough to sustain the accumulative load of the trash and steel drums in extreme loading conditions.

9. WELDING AND HEAT TREATMENT

9.1 WELD SIZE

Fillet weld, leg length (Full Length): Y: ¼ inch

9.2 ELECTRIC WELDING

All welds shall be made continuous and watertight. All butt welds shall be full penetration welds welded from both sides.

9.3 WELDER QUALIFICATIONS

The qualification of welders for all welding, including weld repairs shall conform to the relevant AWS Standard Qualifications Procedures B2.1. The Contractor shall furnish the facilities, all equipment, materials and other articles required to perform qualification tests of his welders and welding operators.

9.4 APPROVAL OF WELDING PROCESS AND EQUIPMENT

The Contractor shall submit the welding processes, procedures and equipment to be used in each phase of the works to the Engineer for approval prior to the starting of all welding. All equipment shall conform to the requirements for arc-welding equipment as set forth in the AWS Specification D-1.1.

9.5 FILLER METAL

All deposited weld metal shall have limits and ultimate tensile strength not less than those specified for the respective base metal welded; shall have chemical composition similar to that of the base metal, and when subjected to tests, shall have corrosion resistance at least equivalent to that of the base metal

9.6 WELDING ELECTRODES

Except as otherwise specified herein, welding electrodes shall be of a type and grade approved by the Engineer and so adopted to ensure effective penetration and an intimate uniform fusion of the filler and base metals, in all welding positions and under all conditions to be encountered, without undercutting or overlapping. All welding electrodes used shall be suitable for the work

performed, and shall conform to the requirements of the applicable AWS and ASTM Specifications.

9.7 CORROSION-RESISTING WELDS

Welding of corrosion resisting metal shall be done with special precaution to ensure that the joints are made without flaws .

9.8 WELD FINISH

Welds shall in general display good appearance and a surface suitable for painting. Structural welds shall be grinded to avoid stress raisers. All welds, which require non-destructive examinations, shall be dressed by chipping and grinding as required for good interpretation by the selected weld examination methods.

10. INSPECTION AND TESTING

All material, equipment, etc., related to or intended for incorporation in the works, shall, while in the process of manufacture at the Contractor's shops or in any of his contractors' shops, as the case may be, be subject to such tests and inspections as may be necessary, to prove compliance with the requirements of the Contract documents.

The testing and inspection plans shall include but not limited to the following tests.

1. Material Test (Mechanical and Chemical).
2. Welding tests
 - Welding and Heat Treatment
 - NDT of weld as per drawings.
 - Welder Qualification.
 - Stress Relief Heat Treatment
 - Ultrasonic Inspection
 - Magnetic particle Inspection
 - Liquid Penetrating Inspection
 - Tolerances Inspection
3. Dimensional Checks.
4. Proof assembly & Match marking.
5. Painting Inspection
6. Functional Tests.

All tests shall be carried out in accordance with the relevant ASTM and all equivalent Standards . Otherwise the test method shall be proposed by the Contractor and consented to by the Employer.

Consent of assemblies, tests and test procedures etc., and acceptance of pertinent test certificates, or waiving of inspections and tests, shall in no way relieve the Contractor of contractual obligations for furnishing the works in accordance with the provisions of contract.

The Contractor shall, upon reasonable notice, grant the Employer's Representative, at all times, free access to his factories and workshops, both local and overseas and provide full facilities for unrestricted inspection and witnessing of assembly and tests and shall furnish him with such information as may be required.

11. TESTING OF MATERIALS

All materials shall be tested in compliance with the relevant ASTM standards latest edition thereof.

Material	Specifications
Carbon Steel Castings	ASTM-A27 "Specification for mild to Medium-Strength Carbon-Steel Casting for General Application" Grade 65-35, or approved equivalent standard.
Low-Alloy Steel Castings	ASTM-A148, "Specification for High-Strength Steel Casting for Structural Purposes", Grade 80-85 or approved equivalent standard.
Corrosion-Resistant Steel Plate	ASTM-A157, "Specification for Stainless and Heat-Resisting Chromium Nickel Steel Plate, Sheet and Strip", or corresponding equivalent approved standard.
Bronze Castings	ASTM-B584, "Specification for Copper Alloy, and Sand Castings for General Applications, "Alloy UNSA No. C903000 and Alloy UNS No. C92300 and Alloy UNSA No. C93700", or corresponding equivalent approved standard.
Bronze (for bearings, wearing plates, etc.)	ASTM-A584, "Specification for Copper Alloy, and Sand Castings for General Applications, Alloy UNS No. C93200 and Alloy UNS No. C93700", or corresponding equivalent approved standard.
Steel Pipe	ASTM-A53, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and seamless or corresponding approved standard.

11.1 EXAMINATION OF WELDS

Main Welds: All butt welds on all welds on main components & other shall be given complete non-destructive examination by ultrasonic, dye Penetrate, or magnetic particle methods, supplemented by radiographic examination. Supplemental radiographic examinations shall include examination of areas where the Interpretations by other methods is unclear or where integrity of the weld is doubtful.

Secondary Welds: The Employer shall have the right to request random spot-check examination of welds, including radiographic examination, as part of the Equipment inspection.

Technique & Acceptance Standard: Examination of welds shall be in accordance with the technique and acceptance standards of "AWS Code D-1.1 welding in Building construction.

11.2 PINS AND PIN HOLES

Pin holes shall be bored true to gauges, straight and at right angles to the axis of the member. Pinholes shall have a surface finish of RMS finer. The boring shall be done after the member is securely fastened in position.

11.3 HANDLING AND DISMANTLING

Equipment shall be designed for easy dismantling and maintenance operations. Dismantling and maintenance of electrical equipment shall be possible without stopping or disturbing other equipment in its vicinity.

All equipment or parts of equipment designed to be dismantled and handled shall be provided with:

- Lifting rings, lugs, hoisting collars.
- Sliding, chassis and special handling apparatus such as: grappling beams, monorails, trolleys, jacks, pulley and ratchet systems, etc.

11.4 TOLERANCES

The tolerances related to all equipment and supplies shall be selected according to the requirements of manufacturing, erection, operation and maintenance, based on the best engineering practice. All relevant factors shall be considered, including deformations due to temperature variations and forces occurring under normal as well as extreme conditions. The tolerances applied shall be stated on the drawings. The tolerances shall be selected so that all wearing and replaceable parts may be intervariationed without additional machining.

If not otherwise specified, the tolerances on measurements and shape shall be according to ISO 2768, class medium.

In general, pipes, plates and profiled steel shall have tolerances in thickness, straightness etc. according to EN 10029 Class B (ISO 7452) or other approved standards. The Contractor shall specify recommended Tolerances in his Bid.

11.5 WORKSHOP ASSEMBLY

As a general rule, all equipment shall be fully assembled in the workshop after manufacturing. All site welds shall then be temporarily fixed by tack welds. The equipment shall be checked and approved with regard to dimensions, tolerances and alignment. Functional test shall be made in the presence of the Engineer.

The Contractor shall clearly state in his Bid the items for which the shop assembly has not been foreseen, and the reasons for this.

After the assemblies have been inspected and approved by the Employer's Representative, the components shall be match marked, disassembled and prepared for shipment.

12. PAINTING

12.1 SCOPE

The Contractor shall furnish and apply all paints as specified herein, before packing and transportation, with the exception of those parts or surfaces that are expressly designated as unpainted. Surfaces to be painted shall receive the preparatory treatment and number of coats prescribed in the painting schedule. The applicable provisions of the SSPC shall apply unless specifically covered otherwise in this clause.

12.2 STANDARD PRODUCTS

All materials, supplies, and articles furnished shall be the standard products of recognized and reputed manufacturers.

12.3 SURFACE PREPARATION

For all structural steel and cast iron parts including piping for areas in contact with air, oil and water the following applies:

On all cast iron and structural steel parts the rust must be removed by mechanical means (sandblasting to Swedish standard S A 3) to obtain a bare surface according to DIN 55928 Part 4.

Prime Coat for all areas: - 2 layers with “Friazinc R”, dry thickness of each layer 40 microns.

TYPE A: - Areas in contact with water :- After assembling the mechanical parts in the workshop of all items to be delivered, three coats of water resistant paint “Shell Black” must be applied with each layer having a minimum thickness of 100 microns.

Type B: - Areas in contact with oil: - All those areas will receive three coats with oil resistant paint, for example Keratol, which must be applied as finishing coat.

Type C: - Areas in contact with air: - All those areas still accessible after assembling on site, receive two prime coats with different colours with each layer having a minimum thickness of 300 microns.

Areas in contact with concrete: - Cast-in items do not receive any coating, but must be free of rust and spunk.

Cast-in items exposed to air and water must be provided with a prime coat to a depth of approximately 150 mm into the concrete.

Pipelines in contact with water: - They must be provided in stainless steel.

Oil carrying pipelines: - They must be dismantled after assembling on site, pickled in acid solution, neutralized and oiled.

All bare surfaces, which are not in contact with oil, shall be provided with a protection coat (removable with water) after manufacturing.

Parts located in inaccessible areas, which must not be dismantled after workshop assembling must be protected as follows:

The electrical equipment such as electric motors, limit switches, control panels etc. must receive corrosion protection according to specifications in the worst atmosphere.

Any coated surface damaged after or during assembling must be reinstated.

12.4 METALS SUBJECT TO CONTACT WITH WATER

- Abrasive blast cleaning SA 2.5.
- Spray zinc sheathing with thickness of 120 microns.
- Two or three coats of High Build Modified Epoxy.
Minimum dry film thickness of the system not less than 450 microns.

12.5 METAL SUBJECT TO UNFAVORABLE ATMOSPHERIC EXPOSURE

- Abrasive blast cleaning SA 2.5.
- One coat of epoxy polyamide primer.
- One intermediate coat of epoxy polyamide paint or vinyl epoxy.
- One topcoat of acrylic polyurethane paint.
- Dry film thickness of the system not less than 200 microns.

12.6 PARTS EMBEDDED IN CONCRETE

Immediately prior to the application of the protective coating, all traces of calming, rust and paint shall be removed by abrasive jet cleaning.

The protective system for embedded parts of parts exposed to air, as applicable, shall be applied over a length of 10 cm measured from the line of penetration into the concrete for parts with surfaces not embedded in the concrete.

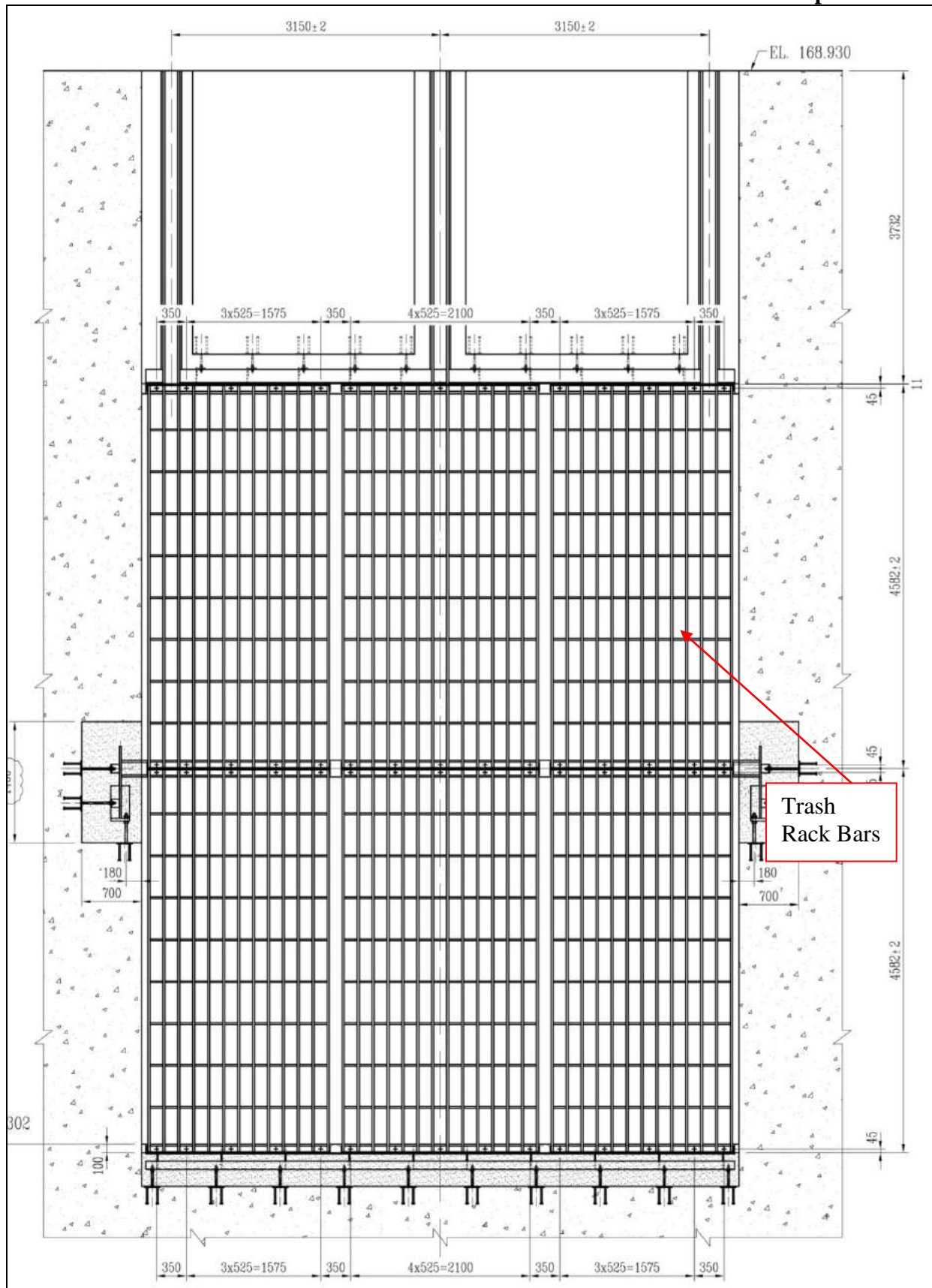
12.7 COLOURS

Colours shall be in accordance with the standard codes for such like works otherwise as selected by the Engineer out of the colour scheme provided by the Contractor. Alternate coats of paints having the same colour shall be tinted in order to insure that all surfaces are properly coated with the specified number of paint coats. Unless otherwise specified, the colour of all undercoats shall match the colour of the finish paint.

APPENDIX TO THE TECHNICAL SPECIFICATIONS

Appendix-A-
To the Technical Specifications

	
NATURAL FLOATING DEBRIS	
	
SUBMERGED TRASH INSIDE WATER BODY	<i>WATER HYACINTH IN FRONT OF POWER PLANT</i>
	
AQUATIC PLANTS ACROSS UPSTREAM BANKS OF SULEMANKI HEADWORKS	



FRONT VIEW OF TRASH RACK PANNELS AT PHPP



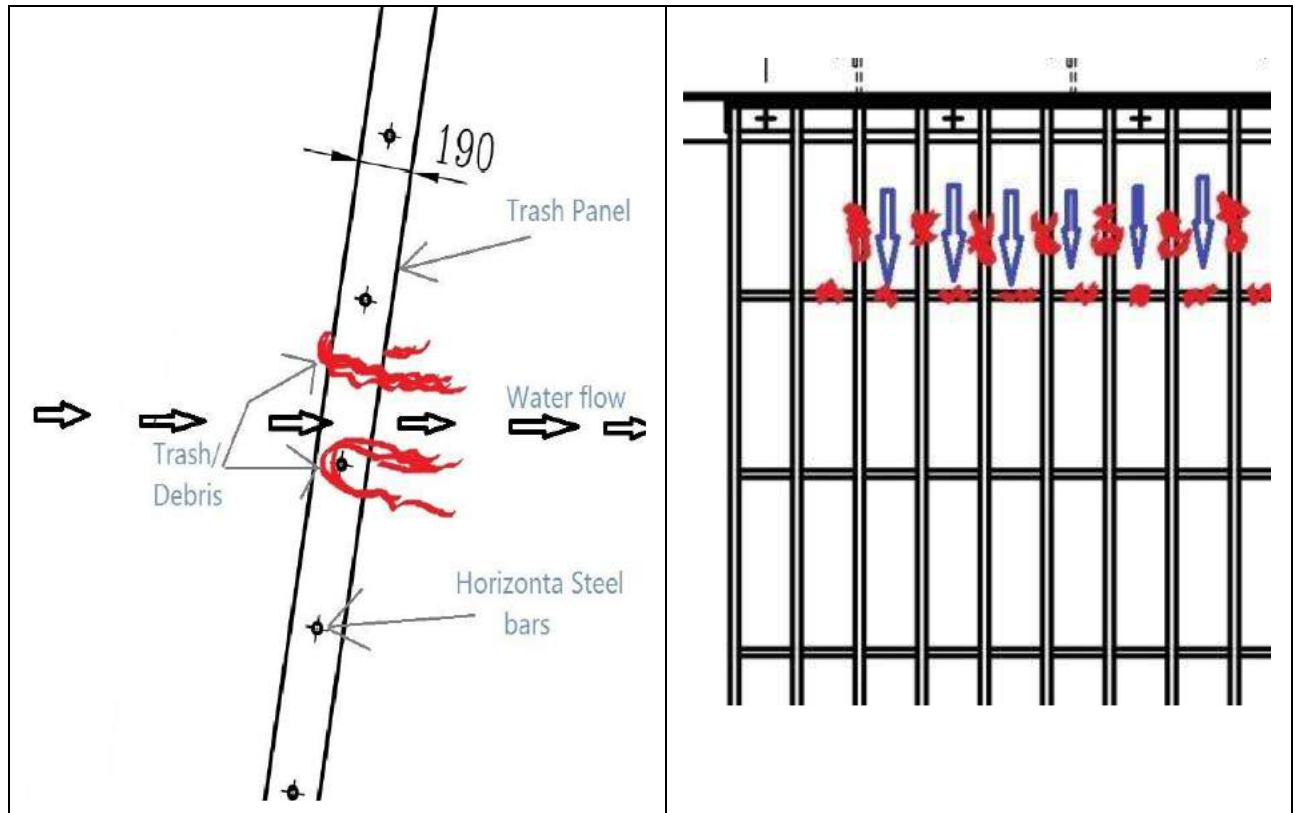
POWER INTAKE TRASH RACK MACHINE



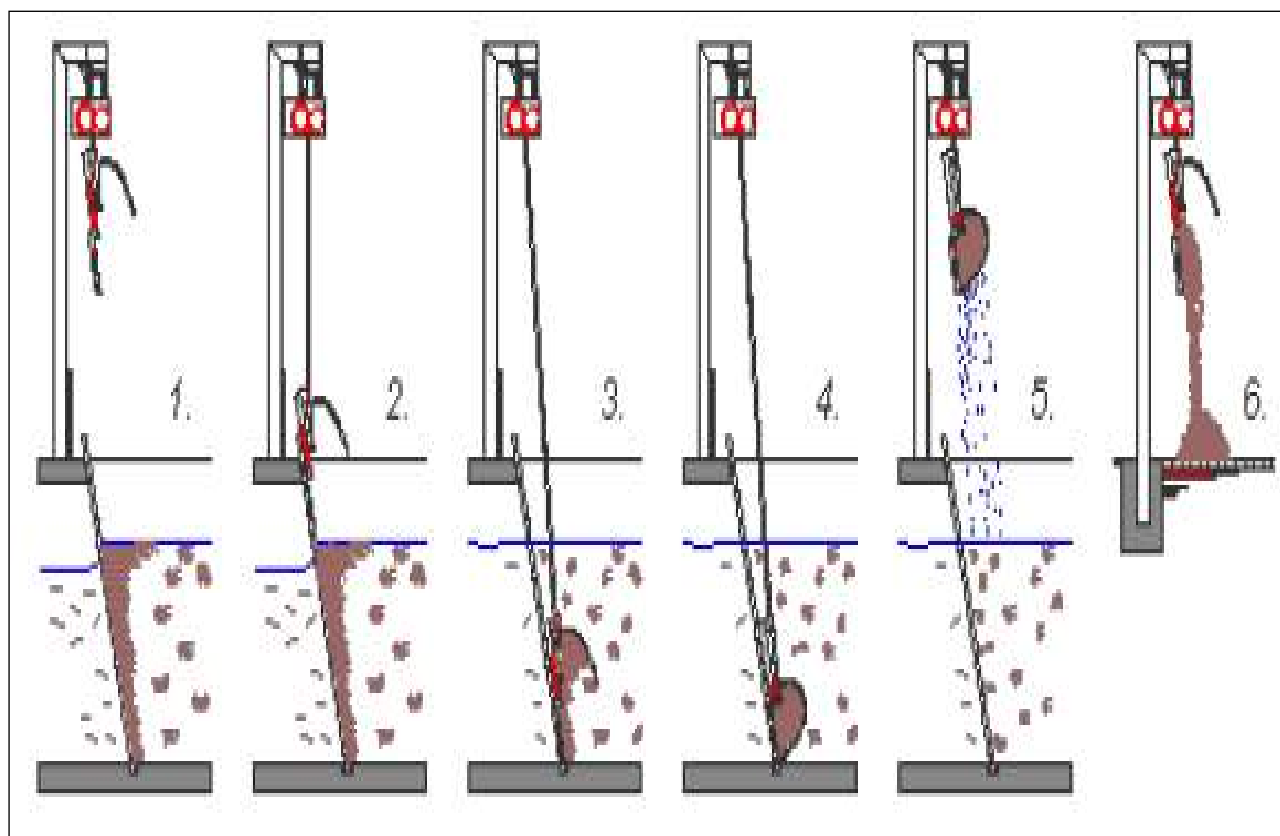
TRASH RACKS & POWER INTAKE GALLERY



**POWER INTAKE TRASH RACK MACHINE
DECK**



UNCLEARED TRASH PANNELS



FUNCTIONING OF THE TRASH RACK CLEANING MACHINE



TRASH GRABBED IN WORKING MACHINES



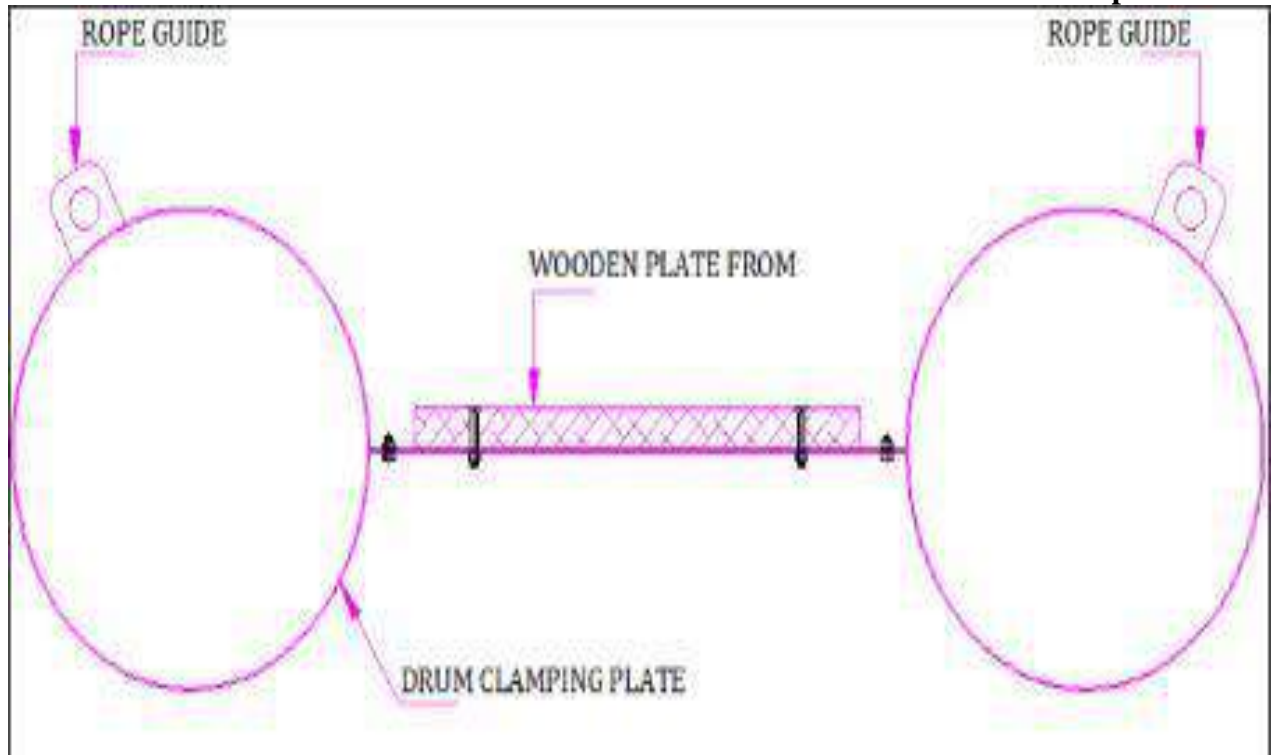
TRASH GRABBED DURING SHUTDOWN



UNACCESSIBLE TRASH IN THE TURBINE INTAKE GALLERY



TRASH ACCUMULATED INFRONT OF POWER INTAKE AREA UNDER THE BRIDGE



THE CLAMPING ARRANGEMENT OF DRUMS WITH STEEL WIRE ROPES AND ADJUSTABLE CLAMPS



PROPOSED ARRANGEMENT FOR DIVERTING THE TRASH TOWARDS SPILLWAY THROUGH FLOATING BOOM