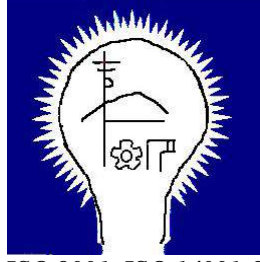


বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড



*ISO 9001, ISO 14001 &
OHSAS 18001 CERTIFIED*

BANGLADESH RURAL ELECTRIFICATION BOARD (BREB)

TENDER DOCUMENT FOR THE

**SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF 33/11 KV
SUB-STATION ON TURN-KEY BASIS**

**UNDER
RURAL ELECTRIFICATION EXPANSION DHAKA DIVISION PROGRAM-II
(REVISED)**

**TENDER PACKAGE NO: DDP-II-SSN-02,
SUB-PACKAGE/LOT NO:Lot-2/1**

ISSUED TO: M/S.....

ON BEHALF OF THE OFFICE OF
Project Director, REE-DDP-II
Training Academy Building(5th Floor)
Bangladesh Rural Electrification Board

SEAL & SIGNATURE

“শেখ হাসিনার উদ্যোগ-ঘরে ঘরে বিদ্যুৎ”
Invitation for Re-Tender (Local)
Bangladesh Rural Electrification Board
Government of the People's Republic of Bangladesh

1	Ministry/Division	Power Division, Ministry of Power, Energy and Mineral Resources		
2	Agency	Bangladesh Rural Electrification Board		
3	Procuring Entity Name & District	Project Director, Rural Electrification Expansion Dhaka Division Program-II (Revised)		
4	Invitation for Tender Name	Supply, Installation, Testing & Commissioning of 33/11 Kv Sub-Station on Turn-key basis.		
5	Invitation Ref No. & date	27.12.2637.131.87.011.17.910	Date: 27-04-2017	
KEY INFORMATION				
6	Procurement Method	Open Tendering Method, NCF		
FUNDING INFORMATION				
7	Budget and Source of Funds	GOB		
8	Development Partners (if applicable)	N/A		
PARTICULAR INFORMATION				
9	Project/ Program Name	Rural Electrification Expansion Dhaka Division Program-II (Revised)		
10	Tender Package No.	DDP-II-SSN-02		
11	Tender Publication Date	Within 03-05-2017		
12	Tender Last Selling Date	04-06-2017 up to office time		
TENDER CLOSING AND OPENING				
13	Tender closing date & time	Date	Time	
14	Tender opening date & time	05-06-2017	12.00 Noon (BST)	
15	Name & Address of the office	Address		
	- For Selling Tender Document	PD, REE-DDP-II (5 th floor), Training Academy Building, BREB, Nikunja-2, Dhaka- 1229, Bangladesh.		
	- For Receiving Tender Document	BREB Auditorium (1 st floor), Head Office Building, BREB, Nikunja-2, Dhaka- 1229, Bangladesh		
	- For Opening Tender Document	BREB Auditorium (1 st floor), Head Office Building, BREB, Nikunja-2, Dhaka- 1229, Bangladesh		
16	Pre-Bid Meeting Date	Date	Time	Place
		22-05-2017	11.00 AM	PD Office, DDP-II, Dhaka.
INFORMATION FOR TENDERER				
17	Eligibility of Tender	Bangladeshi Manufacturers/Tenderers		
18	Price of Tender Document (Tk.)	Tk. 8,000.00 (Per Document)		
19	Brief Description of Works and amount of Tender Security :			
	Tender Package No.	Sub-Package No.	Description	Tender Security Amount in Tk.
	DDP-II-SSN-02	Lot-2/1	Supply, Installation, Testing & Commissioning of 33/11 Kv Sub-Station on Turn-key basis	75,00,000.00
				31 st May 2018.
20	Regarding Tender Document	Tender Document can be purchased by the interested tenderer on submission of a written application to the address below upon the payment of non-refundable Tk. 8000.00 (Taka Eight Thousand) in the form of Pay Order / Bank Draft in favour of PD, REE-DDP-II, BREB, Dhaka, Bangladesh. No tender document will be sent by courier or by mail.		
21	Mode of payment	Payment will be made directly to the Tenderer in Local Currency (BDT).		
22	Completion Period	Completion Period shall begin with effect from the date of signing of contract or 28 th day from the date of notification of award which to be earlier.		
23	Special Information	Tender document can be viewed in the BREB Website www.reb.gov.bd		
PROCURING ENTITY DETAILS				
24	Name of official Inviting Tender	Md. Abdur Rahim Mallik		
25	Designation of official Inviting Tender	Project Director, Rural Electrification Expansion Dhaka Division Program-II (Revised)		
26	Address of official Inviting Tender	Bangladesh Rural Electrification Board, Training Academy Building (5th Floor), Nikunja-2, Khilkhet, Dhaka-1229.		
27	Contract details of official Inviting Tender	Tel. 02-8900035		
28	The procuring entity reserves the right to accept or reject all tenders			

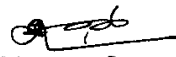


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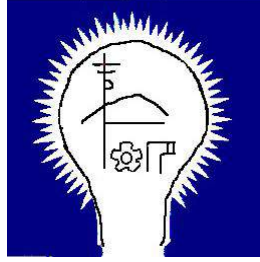
বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড
 Bangladesh Rural Electrification Board

বাপবিবো/জন () ২০১৬-১৭

Project Director
 Rural Electrification Expansion Dhaka Division Program-II (Revised).
 Bangladesh Rural Electrification Board,
 Training Academy Building (5th Floor)
 Nikunja-2, Khilkhet, Dhaka-1229, Bangladesh


 (স্বঃ আব্দুর রহিম মল্লিক)
 প্রকল্প পরিচালক
 আরইই-ডিডিপি-২
 বাপবিবোর্ড, ঢাকা।

বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড



*ISO 9001, ISO 14001 &
OHSAS 18001 CERTIFIED*

BANGLADESH RURAL ELECTRIFICATION BOARD (BREB)

TENDER DOCUMENT FOR THE

**SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF 33/11 KV
SUB-STATION ON TURN-KEY BASIS**

UNDER

**RURAL ELECTRIFICATION EXPANSION DHAKA DIVISION PROGRAM-II
(REVISED)**

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SECTION: 1- Instruction To Tenderers (ITT)

SECTION: 2- Tender Data Sheet (TDS)

SECTION: 3- General Conditions of Contract (GCC)

SECTION: 4- PCC, Labour Laws

SECTION: 5- Tender and Contract Forms

SECTION: 6- Bill of Quantity

BANGLADESH RURAL ELECTRIFICATION BOARD (BREB)

TENDER DOCUMENT FOR THE SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF 33/11 KV SUB-STATION ON TURN-KEY BASIS UNDER RURAL ELECTRIFICATION EXPANSION DHAKA DIVISION PROGRAM-II (REVISED)

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 - Form PW3-1 : Tender Submission Letter
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Volume 2 of 2

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Section 1. Instructions to Tenderers

A. General

- 1. Scope of Tender**
- 1.1 The Procuring Entity, as indicated in the Tender Data Sheet (**TDS**) issues this Tender Document for the procurement of Works and physical services incidental thereto as specified in the **TDS** and as detailed in **Section 6: Bill of Quantities**. The name of the Tender and the number and identification of its constituent lot(s) are stated in the **TDS**.
- 1.2 The successful Tenderer shall be required to execute the Works and physical services as specified in the General Conditions of Contract
- 2. Interpretation**
- 2.1 Throughout this Tender Document:
- (a) the term “in writing” means communication written by hand or machine duly signed and includes properly authenticated messages by facsimile or electronic mail;
 - (b) if the context so requires, singular means plural and vice versa;
 - (c) “day” means calendar days unless otherwise specified as working days;
 - (d) “Person” means and includes an individual, body of individuals, sole proprietorship, partnership, company, association or cooperative society that wishes to participate in Procurement proceedings;
 - (e) “Tenderer” means a Person who submits a Tender;
 - (f) “Tender Document” means the Document provided by a Procuring Entity to a Tenderer as a basis for preparation of the Tender; and
 - (g) “Tender” depending on the context, means a Tender submitted by a Tenderer for execution of Works and physical services to a Procuring Entity in response to an Invitation for Tender.
- 3. Source of Funds**
- 3.1 The Procuring Entity has been allocated public funds as indicated in the **TDS** and intends to apply a portion of the funds to eligible payments under the Contract for which this Tender Document is issued.
- 3.2 For the purpose of this provision, “public funds” means any monetary resources appropriated to the Procuring Entity under Government budget, or loan, grants and credits placed at the disposal of the Procuring Entity through the Government by the development partners or foreign states or organisations.
- 3.3 Payments by the development partner, if so indicated in the **TDS**, will be made only at the request of the Government and upon approval by the development partner or foreign state or Organisation in accordance with the applicable Loan / Credit / Grant Agreement, and will be subject in all respects to the terms and conditions of that Agreement.

4. Corrupt, Fraudulent, Collusive, Coercive (or Obstructive in case of Development Partner) Practices

- 4.1 The Government and the Development Partner, if applicable requires that the Procuring Entity as well as the Tenderers and Contracts (including , sub-contractors, agents, personnel, consultants, and service providers) shall observe the highest standard of ethics during implementation of procurement proceedings and the execution of Contracts under public funds.
- 4.2 For the purposes of ITT Sub Clause 4.3, the terms set forth below as follows:
- (a) “corrupt practice” means offering, giving or promising to give, receiving, or soliciting either directly or indirectly, to any officer or employee of the Procuring Entity or other public or private authority or individual, a gratuity in any form; employment or any other thing or service of value as an inducement with respect to an act or decision or method followed by the Procuring Entity in connection with a Procurement proceeding or Contract execution;
 - (b) “fraudulent practice” means the misrepresentation or omission of facts in order to influence a decision to be taken in a Procurement proceeding or Contract execution;
 - (c) “collusive practice” means a scheme or arrangement between two (2) or more Persons, with or without the knowledge of the Procuring Entity, that is designed to arbitrarily reduce the number of Tenders submitted or fix Tender prices at artificial, non-competitive levels, thereby denying the Procuring Entity the benefits of competitive price arising from genuine and open competition;
 - (d) “coercive practice” means harming or threatening to harm, directly or indirectly, Persons or their property to influence a decision to be taken in the Procurement proceeding or the execution of a Contract, and this will include creating obstructions in the normal submission process used for Tenders.
 - (e) “Obstructive practice” (applicable in case of Development Partner) means deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede an investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and /or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation.
- 4.3 Should any corrupt, fraudulent, collusive, coercive (or obstructive in case of Development Partner) practice of any kind is determined by the Procuring Entity or the Development Partner, if applicable, this will be dealt in accordance with the provisions of the Public Procurement Act and Rules and Guidelines of the Development Partners as stated in the ITT sub-clause 3.3. In case of obstructive practice, this will be dealt in accordance with Development Partners Guidelines.

- 4.4 If corrupt, fraudulent, collusive, coercive (or obstructive in case of Development Partner) practices of any kind is determined by the Procuring Entity against any Tenderer or Contracts (including sub-contractors, agents, personnel, consultants, and service providers) in competing for, or in executing, a contract under public fund:
- (a) Procuring Entity and/or the Development Partner shall exclude the concerned Tenderer from further participation in the concerned procurement proceedings;
 - (b) Procuring Entity and/or the Development Partner shall reject any recommendation for award that had been proposed for that concerned Tenderer;
 - (c) Procuring Entity and/or the Development Partner shall declare, at its discretion, the concerned Tenderer to be ineligible to participate in further Procurement proceedings, either indefinitely or for a specific period of time;
 - (d) Development Partner shall sanction the concerned Tenderer or individual, at any time, in accordance with prevailing Development Partner' sanctions procedures, including by publicly declaring such Tenderer or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Development Partner-financed contract; and (ii) to be a nominated sub-contractor, consultant, manufacturer or Contractor, or service provider of an otherwise eligible firm being awarded a Development Partner-financed contract; and
 - (e) Development Partner shall cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Procuring Entity or of a beneficiary of the loan engaged in corrupt, fraudulent, collusive, coercive or obstructive practices during the procurement or the execution of that Development Partner financed contract, without the Procuring Entity having taken timely and appropriate action satisfactory to the Development Partner to remedy the situation.
- 4.5 Tenderer shall be aware of the provisions on corruption, fraudulence, collusion, coercion (and obstruction, in case of Development Partner) of the Public Procurement Act, 2006, the Public Procurement Rules, 2008 and others as stated in GCC Clause 38.
- 4.6 In further pursuance of this policy, Tenderers, Contractors and their sub-contractors, agents, personnel, consultants, service providers shall permit the Government and the Development Partner to inspect any accounts and records and other documents relating to the Tender submission and contract performance, and to have them audited by auditors appointed by the Government and/or the Development Partner during the procurement or the execution of that Development Partner financed contract.

5. Eligible Tenderers

- 5.1 This Invitation for Tenders is open to all potential Tenderers from all countries, except for any specified in the **TDS**.
- 5.2 Tenderers shall have the legal capacity to enter into the Contract under the Applicable law.
- 5.3 Tenderers shall be enrolled in the relevant professional or trade organisations registered in Bangladesh.
- 5.4 Tenderers may be a physical or juridical individual or body of individuals, or company, association or any combination of them in the form of a Joint Venture (JV) invited to take part in public procurement or seeking to be so invited or submitting a Tender in response to an Invitation for Tenders.
- 5.5 Tenderers shall have fulfilled its obligations to pay taxes and social security contributions under the provisions of laws and regulations of the country of its origin.
- 5.6 Tenderers should not be associated, or have been associated in the past, directly or indirectly, with a consultant or any of its affiliates which have been engaged by the Procuring Entity to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the works to be performed under this Invitation for Tenders.
- 5.7 Tenderers in its own name or its other names or also in the case of its Persons in different names shall not be under a declaration of ineligibility for corrupt, fraudulent, collusive or coercive practices as stated under ITT Sub Clause 4.4 (or obstructive practice, in case of Development Partner) in relation to the Development Partner's Guidelines in projects financed by Development Partner.
- 5.8 Tenderers are not restrained or barred from participating in Public Procurement on grounds of poor performance in the past under any Contract.
- 5.9 Tenderers shall not be insolvent, be in receivership, be bankrupt, be in the process of bankruptcy, be not temporarily barred from undertaking business and it shall not be the subject of legal proceedings for any of the foregoing.
- 5.10 Government-owned enterprise in Bangladesh may also participate in the Tender if it is legally and financially autonomous, it operates under commercial law, and it is not a dependent agency of the Procuring Entity.
- 5.11 Tenderers shall provide such evidence of their continued eligibility satisfactory to the Procuring Entity, as the Procuring Entity will reasonably request.
- 5.12 These above requirements for eligibility will extend, as applicable, to each JV partner and Subcontractor proposed by the Tenderers.
- 5.13 Tenderers shall have the up-to-date valid license(s), issued by the corresponding competent authority, as

6. Eligible Materials, Equipment and Associated Services

- specified in the **TDS**.
- 6.1 All materials, equipment and associated services to be supplied under the Contract are from eligible sources, unless their origin is from a country specified in the **TDS**.
- 6.2 For the purposes of this Clause, “origin” means the place where the Materials and Equipments are mined, grown, cultivated, produced or manufactured or processed, or through manufacturing, processing, or assembling, another commercially recognized new product results that differs substantially in its basic characteristics from its components or the place from which the associated services are supplied.
- 6.3 The origin of materials and equipment and associated services is distinct from the nationality of the Tenderer.

7. Site Visit

- 7.1 Tenderers are advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the Tender and entering into a contract for construction of the Works. The costs of visiting the Site shall be at Tenderer’s own expense.

B. Tender Document

8. Tender Document: General

- 8.1 The Sections comprising the Tender Document are listed below, and should be read in conjunction with any Addendum issued under ITT Clause 11.
- Section 1 Instructions to Tenderers (ITT)
 - Section 2 Tender Data Sheet (**TDS**)
 - Section 3 General Conditions of Contract (GCC)
 - Section 4 Particular Conditions of Contract (**PCC**)
 - Section 5 Tender and Contract Forms
 - Section 6 Bill of Quantities (**BOQ**)
 - Section 7 General Specifications
 - Section 8 Particular Specifications
 - Section 9 Drawings
- 8.2 The Procuring Entity is not responsible for the completeness of the Tender Document and their addenda, if these were not purchased directly from the Procuring Entity, or through its agent as specified in the **TDS**.
- 8.3 Tenderers are expected to examine all instructions, forms, terms, and specifications in the Tender Document as well as in addendum to Tender, if any.

9. Clarification of Tender Document

- 9.1 A prospective Tenderer requiring any clarification of the Tender Document shall contact the Procuring Entity in writing at the Procuring Entity’s address and within time as specified in the **TDS**.
- 9.2 The Procuring Entity is not obliged to answer any clarification request received after that date as stated

under ITT Sub Clause 9.1.

9.3 The Procuring Entity shall respond in writing within five (5) working days of receipt of any such request for clarification received under ITT Sub Clause 9.1.

9.4 The Procuring Entity shall forward copies of its response to all those who have purchased the Tender Document, including a description of the enquiry but without identifying its source.

9.5 Should the Procuring Entity deem it necessary to revise the Tender Document as a result of a clarification, it will do so following the procedure under ITT Clause 11.

10. Pre-Tender Meeting

10.1 To clarify issues and to answer questions on any matter arising in the Tender Document, the Procuring Entity may, if stated in the **TDS**, hold a pre-Tender Meeting at the place, date and time as specified in the **TDS**. All potential Tenderers are encouraged and invited to attend the meeting, if it is held.

10.2 Tenderers are requested to submit any questions in writing so as to reach the Procuring Entity not later than one day prior to the date of the meeting.

10.3 Minutes of the pre-Tender meeting, including the text of the questions raised and the responses given, together with any responses prepared after the meeting, will be transmitted within five (5) working days after holding the meeting to all those who purchased the Tender document and to even those who did not attend the meeting. Any revision to the Tender Document listed in ITT Sub Clause 8.1 that may become necessary as a result of the pre-Tender meeting will be made by the Procuring Entity exclusively through the issue of an Addendum pursuant to ITT Sub Clause 11 and not through the minutes of the pre-Tender meeting.

10.4 Non-attendance at the Pre-Tender meeting will not be a cause for disqualification of a Tenderer.

11. Addendum to Tender Document

11.1 At any time prior to the deadline for submission of Tenders, the Procuring Entity, on its own initiative or in response to an inquiry in writing from a Tenderer, having purchased the Tender Document, or as a result of a pre-Tender meeting may revise the Tender Document by issuing an Addendum.

11.2 The Addendum issued under ITT Sub Clause 11.1 shall become an integral part of the Tender Document and shall have a date and an issue number and must be circulated by fax, mail or e-mail, to Tenderers who have purchased the Tender Documents, within five (5) working days of issuance of such Addendum, to enable Tenderers to take appropriate action

11.3 The Procuring Entity shall also ensure posting of the relevant addenda with the reference number and date on their websites including notice boards, where the Procuring Entity had originally posted the IFTs.

- 11.4 To give a prospective Tenderer reasonable time in which to take an addendum into account in preparing its Tender, the Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders, pursuant to ITT Sub Clause 42.2.
- 11.5 If an addendum is issued when time remaining is less than **one-third** of the time allowed for the preparation of Tenders, the Procuring Entity at its discretion shall extend the deadline by an appropriate number of days for the submission of Tenders, depending upon the nature of the Procurement requirement and the addendum. In any case, the minimum time for such extension shall not be less than three (3) working days.

C. Qualification Criteria

12. General Criteria

- 12.1 Tender Tenderers shall possess the necessary professional and technical qualifications and competence, financial resources, equipment and other physical facilities, managerial capability, specific experience, reputation, and the personnel, to perform the contract, which entails setting pass/fail criteria, which if not met by the Tenderers, will result in consideration of its Tender as non-responsive.
- 12.2 In addition to meeting the eligibility criteria, as stated in ITT Clause 5, Tenderers must satisfy the other criteria stated in ITT Clauses 13 to 18 inclusive
- 12.3 To qualify for multiple number of contracts/lots in a package made up of this and other individual contracts/lots for which Tenders are invited in the Invitation for Tenders, the Tenderers shall demonstrate having resources sufficient to meet the aggregate of the qualifying criteria for the individual contracts. The requirement of general experience as stated under ITT Sub Clause 14.1(a) and specific experience, unless otherwise of different nature, as stated under ITT Sub Clause 15.1(b) shall not be separately applicable for each individual lot.

13. Litigation History

- 13.1 Litigation history shall comply with the requirement as stated under ITT Sub Clause 15.1(c).

14. Experience Criteria

- 14.1 Tenderers shall have the following minimum level of construction experience to qualify for the performance of the Works under the Contract:
 - (a) a minimum number of years of general experience in the construction of works as Prime Contractor or Subcontractor or Management Contractor as specified in the **TDS**; and
 - (b) specific experience as a Prime Contractor or Subcontractor or Management Contractor in construction works of a nature, complexity and methods/construction technology similar to the

proposed Works, in at least a number of contract(s) and, each with a minimum value over the period, as specified in the **TDS**.

- 15. Financial Criteria**
- 15.1 Tenderers shall have the following minimum level of financial capacity to qualify for the performance of the Works under the Contract.
- (a) the average annual **construction** turnover as specified in the **TDS** during the period specified in the **TDS**;
 - (b) availability of minimum liquid assets i.e working capital or credit facilities from any scheduled Bank of Bangladesh, net of other contractual commitments, of the amount as specified in the **TDS**;
 - (c) satisfactory resolution of all claims under litigation cases and shall not have serious negative impact on the financial capacity of the Tenderers. All pending litigation shall be treated as resolved against the Tenderers; and
 - (d) The Minimum Tender Capacity as specified in the **TDS**.
- 16. Personnel Capacity**
- 16.1 Tenderers shall have the following minimum level of personnel capacity to qualify for the performance of the Works under the Contract consisting of a Construction Project Manager, Engineers, and other key staff with qualifications and experience as specified in the **TDS**.
- 17. Equipment Capacity**
- 17.1 Tenderers shall own suitable equipment and other physical facilities or have proven access through contractual arrangement to hire or lease such equipment or facilities for the desired period, where necessary or have assured access through lease, hire, or other such method, of the essential equipment, in full working order, as specified in the **TDS**.
- 18. Joint Venture (JV)**
- 18.1 Tenderers may participate in the procurement proceedings forming a Joint Venture (JV) by an agreement, executed case by case on a non judicial stamp of value as specified in the **TDS** or alternately with the intent to enter into such an agreement supported by a Letter of Intent along with the proposed agreement duly signed by all legally authorised partners of the intended JV and authenticated by a Notary Public, with the declaration that the partners will execute the JV agreement in the event the Tenderer is successful.
- 18.2 The figures for each of the partners of a JV shall be added together to determine the Tenderer's compliance with the minimum qualifying criteria; however, for a JV under ITT Sub Clause 18.1, with number of partners as specified in the **TDS** to qualify, Leading partner and other partners must meet the criteria as specified in the **TDS**. Failure to comply with these requirements will result in non-responsiveness of the JV Tender.
- 18.3 Each partner of the JV shall be jointly and severally liable for the execution of the Contract, all liabilities and ethical and

legal obligations in accordance with the Contract terms.

18.4 JV shall nominate the **Leading Partner** as **RPRESENTATIVE** being entrusted with the Contract administration and management at Site who shall have the authority to conduct all business for and on behalf of any and all the partners of the JV during the Tendering process and, in the event the JV is awarded the Contract, during contract execution including the receipt of payments for and on behalf of the JV.

19. Subcontractor(s)

19.1 Tenderers may intend to subcontract an activity or part of the Works, in which case such elements and the proposed Subcontractor shall be clearly identified.

19.2 The Procuring Entity may require Tenderers to provide more information about their subcontracting arrangements. If any Subcontractor is found ineligible or unsuitable to carry out the subcontracted tasks, the Procuring Entity may request the Tenderers to propose an acceptable substitute.

19.3 A Subcontractor may participate in more than one Tender, but only in that capacity.

19.4 The Procuring Entity may also select in advance Nominated Subcontractor(s) to execute certain specific components of the Works and if so, those will be specified in the **TDS**.

19.5 The successful Tenderer shall under no circumstances assign the Works or any part of it to a Subcontractor.

D. Tender Preparation

20. Only one Tender

20.1 Tenderers shall submit only one (1) Tender for each lot, either individually or as a JV. Tenderer who submits or participates in more than one (1) Tender in one (1) lot of a package or in one (1) package with one (1) lot will cause all the Tenders of that particular Tenderer to be rejected.

21. Cost of Tendering

21.1 Tenderers shall bear all costs associated with the preparation and submission of its Tender, and the Procuring Entity shall not be responsible or liable for those costs, regardless of the conduct or outcome of the Tendering process.

22. Issuance and Sale of Tender Document

22.1 The Procuring Entity shall make Tender Documents available immediately to the potential Tenderers, requesting and willing to purchase at the corresponding price by the date the advertisement has been published in the newspaper.

22.2 There shall not be any pre-conditions whatsoever, for sale of Tender Documents and the sale of such Document shall be permitted up to the day prior to the day of deadline for the submission of Tender.

23. Language of

23.1 Tenders shall be written in the English language.

Tender

Correspondences and documents relating to the Tender may be written in English or *Bangla*. Supporting documents and printed literature furnished by the Tenderers that are part of the Tender may be in another language, provided they are accompanied by an accurate translation of the relevant passages in the English or *Bangla* language, in which case, for purposes of interpretation of the Tender, such translation shall govern.

23.2 Tenderers shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.

24. Contents of Tender

24.1 The Tender prepared by the Tenderers will comprise the following:

- (a) the Tender Submission Letter (**Form PW3-1**), as stated under ITT Sub Clause 25.1;
- (b) the Tenderer Information as stated under ITT Clauses 5,29 and 32 (**Form PW3-2**);
- (c) the priced BOQ for each lot in accordance with ITT Clauses 25,27 and 28;
- (d) the Tender Security as stated under ITT Clauses 35, 36 and 37.
- (e) the alternatives, if permissible, as stated under ITT Clause 26;
- (f) the written confirmation authorizing the signatory of the Tender to commit the Tenderer, as stated under ITT Sub Clause 40.3;
- (g) the Valid Trade license ;
- (h) documentary evidence of Tax Identification Number (TIN) and Value Added Tax (VAT) as a proof of taxation obligations as stated under ITT Sub Clause 5.5;
- (i) the Technical Proposal describing work plan & method, personnel, equipment and schedules as stated under ITT Clause 31;
- (j) documentary evidence as stated under ITT Clause 29 and 32 establishing the Tenderer's eligibility and the minimum qualifications of the Tenderers required to be met for due performance of the Works and physical services under the Contract;
- (k) document establishing legal and financial autonomy and compliance with commercial law, as stated under ITT Sub Clause 5.10 in case of government owned entity;
- (l) documentary evidence for past performance evaluation and rating matrix as stated under ITT Sub Clause 50.2; and
- (m) any other document as specified in the **TDS**.

25. Tender Submission Letter and Bill of

25.1 Tenderers shall submit the Tender Submission Letter (**Form PW3-1**), which shall be completed without any alterations to its format, filling in all blank spaces with the information requested, failing which the Tender may be

Quantities

rejected as being incomplete.

25.2 Tenderers shall submit the priced BOQ using the form(s) furnished in **Section 6: Bill of Quantities**.

25.3 If in preparing its Tender, the Tenderer has made errors in the unit rate or the total price, and wishes to correct such errors prior to submission of its Tender, it may do so, but shall ensure that each correction is initialled by the authorised person of the Tenderer.

26. Alternatives

26.1 Unless otherwise specified in the **TDS**, alternative technical solutions shall not be considered.

26.2 When specified in ITT clause 26.1, Tenderers are permitted to submit alternative technical solutions for specified parts of the Works, and such parts will be identified in the **TDS**.

26.3 Only the technical alternatives, if any, of the lowest evaluated Tenderer conforming to the basic technical requirements will be considered by the Procuring Entity.

27. Tender Prices, Discounts and Price Adjustment

27.1 The prices and discounts quoted by the Tenderers in the Tender Submission Letter (**Form PW3-1**) and in the BOQ shall conform to the requirements specified below.

27.2 Tenderers shall fill in unit rates for all items of the Works both in figures and in words as described in the BOQ, excluding any discount offered.

27.3 The items quantified in the BOQ for which no unit rates have been quoted by the Tenderer will not be paid for, by the Procuring Entity when executed and shall be deemed covered by the amounts of other rates in the BOQ and, it shall not be a reason to change the Tender price.

27.4 The price to be quoted in the Tender Submission Letter, as stated under ITT Sub Clause 25.1, shall be the total price of the Tender, excluding any discounts offered.

27.5 Tenderers shall quote any unconditional discounts in the Tender Submission Letter as stated under ITT Sub Clause 25.1.

27.6 Tenderers wishing to offer any unconditional discount to any package or lot as applicable shall mention discount in percentage (%) in the Tender Submission Letter. Discount shall be equally applicable on all the items of BOQ and shall be applied after arithmetic correction of the tender.

27.7 All applicable taxes, custom duties, VAT and other levies payable by the Contractor under the Contract, or for any other causes, as of the date twenty-eight (28) days prior to the deadline for submission of Tenders, shall be included in the unit rates and the total Tender price submitted by the Tenderers.

27.8 Unless otherwise specified in the **TDS** and provided in the the Contract, the price of a Contract shall be fixed in which case the unit rates may not be modified in response to changes in economic or commercial conditions.

27.9 If so stated under ITT Sub Clause 27.9, Tenders are being invited with a provision for price adjustments. The unit rates quoted by the Tenderers are subject to adjustment during the performance of the Contract in accordance with the provisions of General Condition of Contract (GCC) Clause 69 and, in such case the Procuring Entity shall provide the indexes and weightings or coefficients in **Appendix to the Tender (Table 1.1 and Table 1.2)** for the price adjustment formulae as specified in the Particular Conditions of Contract (**PCC**).

28. Tender Currency

28.1 Tenderers shall quote all prices in the Tender Submission Letter and in the BOQ in Bangladesh Taka (BDT) currency.

29. Documents Establishing Eligibility of the Tenderer

29.1 Tenderers, if applying as a sole Tenderer, shall submit documentary evidence to establish its eligibility as stated under ITT Clause 5 and, in particular, it shall:

- (a) complete the eligibility declarations in the Tender Submission Letter (**Form PW3-1**);
- (b) complete the Tenderer Information (**Form PW3-2**);
- (c) complete Subcontractor Information (**Form PW3-4**), if it intends to engage any Subcontractor(s).

29.2 Tenderers, if applying as a partner of an existing or intended JV shall submit documentary evidence to establish its eligibility as stated under ITT Clause 5 and, in particular, in addition to as stated under ITT Sub Clause 29.1, it shall:

- (a) provide for each JV partner, completed JV Partner Information (**Form PW3-3**);
- (b) provide the JV agreement or Letter of Intent along with the proposed agreement of the intended JV as stated under ITT Sub Clause 18.1

30. Documents Establishing the Eligibility and Conformity of Materials, Equipment and Services

30.1 Tenderers shall submit documentary evidence to establish the origin of all Materials, Equipment and services to be supplied under the Contract as stated under ITT Clause 6.

30.2 To establish the conformity of the Materials, Equipment and services to be supplied under the Contract, the Tenderers shall furnish, as part of its Tender, the documentary evidence (which may be in the form of literature, specifications and brochures, drawings or data) that these conform to the technical specifications and standards specified in **Section 7, General Specifications** and **Section 8, Particular Specifications**.

31. Documents Establishing Technical Proposal

31.1 Tenderers shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in **TDS**, in sufficient detail to demonstrate the adequacy of the Tenderer's proposal to meet the work requirements and the completion time.

32. Documents Establishing the Tenderer's Qualification

32.1 Tenderers shall complete and submit the Tenderer Information (**Form PW3-2/PW3-3**) and shall include documentary evidence, as applicable to satisfy the following:

- (a) general experience, of the entity(s) participating in the Tender, in construction works as stated under ITT Sub Clause 14.1(a), substantiated by the year of registration/constitution/licensing in its country of origin;
- (b) specific experience, of the entity(s) participating in the Tender, in construction works under public sector of similar nature and size as stated under ITT Sub Clause 14.1(b), substantiated by Completion Certificate (s) issued by the relevant Procuring Entity(s);
- (c) average annual **construction** turnover i.e total certified payments received for contracts in progress or completed under public sector for a period as stated under ITT Sub Clause 15.1(a), substantiated by Statement(s) of Receipts, from any scheduled Bank of Bangladesh, issued not earlier than twenty-eight (28) days prior to the day of the original deadline for submission of Tenders;
- (d) adequacy of minimum liquid assets i.e working capital substantiated by Audit Reports mentioned in (i) below or credit line(s) substantiated by any scheduled Bank of Bangladesh in the format as specified (**Form PW3-7**), without alteration, issued not earlier than twenty-eight (28) days prior to the day of the original deadline for submission of Tenders for this Contract as stated under ITT Sub Clause 15.1(b);
- (e) information regarding claims under litigation, current or during the last years as specified in the **TDS**, in which the Tenderer is involved, the parties concerned, and value of claim as stated under ITT Sub Clause 15.1(c), substantiated by statement(s) of the entity(s) participating in the Tender in its letter-head pad;
- (f) technical and administrative personnel along with their qualification and experience proposed for the Contract as stated under ITT Clause 16;
- (g) major items of construction equipment proposed to carry out the Contract as stated under ITT Clause 17, substantiated by statement(s) of the entity(s) participating in the Tender in its letter-head pad declaring source of its availability;
- (h) authority(s), to seek references from the Tenderer's

Bankers or any other sources, of the entity(s) participating in the Tender in its letter-head pad;

- (i) reports on the financial standing of the Tenderer, such as profit and loss statements and audited balance sheet for the past years as specified in the **TDS**, of the entity(s) participating in the Tender, substantiated by Audit Reports.

33. Validity Period of Tender

33.1 Tenders shall remain valid for the period as specified in the **TDS** after the date of Tender submission deadline. A Tender valid for a period shorter than that specified will be considered, non-responsive.

34. Extension of Tender Validity and Tender Security

34.1 In exceptional circumstances, prior to the expiration of the Tender Validity period, the Procuring Entity may solicit all the Tenderers' consent to an extension of the period of validity of their Tenders; provided that those Tenderers have passed the preliminary examination as stated under ITT Sub Clause 51.3.

34.2 The request for extension of Tender Validity period shall state the new date of the validity of the Tender.

34.2 The request and the responses shall be made in writing. Validity of the Tender Security provided under ITT Clause 35 shall also be suitably extended for twenty-eight (28) days beyond the new date for the expiry of the Tender Validity. If a Tenderer does not respond or refuses the request it shall not forfeit its Tender Security, but its Tender shall no longer be considered in the evaluation proceedings. A Tenderer agreeing to the request will not be required or permitted to modify its Tender.

35. Tender Security

35.1 Tenderers shall furnish as part of its Tender, in favour of the Procuring Entity or as otherwise directed on account of the Tenderer, a Tender Security in original form (not copy) and in the amount, as specified in the **TDS**.

35.2 If the Tender is a Joint Venture, the Tenderer shall furnish as part of its Tender, in favour of the Procuring Entity or as otherwise directed on account of the title of the existing or intended JV or any of the partners of that JV or in the names of all future partners as named in the Letter of Intent of the JV, a Tender Security in original form and in the amount as stated under ITT Sub Clause 35.1.

35.3 In case of substitution of the Tender as stated under ITT Clause 46 a new Tender Security shall be required in the substituted Tender.

36. Form of Tender Security

- 36.1 The Tender Security shall:
- (a) at the Tenderer's option, be either:
 - i. in the form of a Bank Draft or Pay Order, or
 - ii. in the form of an irrevocable unconditional Bank Guarantee issued by any scheduled Bank of Bangladesh, in the format **(Form PW3-6)**, without any alteration, furnished in **Section 5: Tender and Contract Forms**;
 - (b) be payable promptly upon written demand by the Procuring Entity in the case of the conditions as stated under ITT Sub Clause 39.1 being invoked; and
 - (c) remain valid for at least twenty-eight (28) days beyond the expiry date of the Tender Validity in order to make a claim in due course against a Tenderer in the circumstances as stated under ITT Sub Clause 39.1.

37. Authenticity of Tender Security

- 37.1 The authenticity of the Tender Security submitted by a Tenderer may be examined and verified by the Procuring Entity at its discretion in writing from the Bank issuing the security.
- 37.2 If a Tender Security is found to be not authentic, the Procuring Entity may proceed to take measures against that Tenderer as stated under ITT Sub Clause 4.4.
- 37.3 A Tender not accompanied by a valid Tender Security will be considered non-responsive.

38. Return of Tender Security

- 38.1 No Tender Security shall be returned to the Tenderers before contract signing.
- 38.2 Unsuccessful Tenderer's Tender Security will be discharged or returned as soon as possible but within twenty-eight (28) days after the expiry of the Tender Validity period as stated under ITT Sub Clauses 33.1.
- 38.3 The Tender Security of the successful Tenderer will be discharged upon the Tenderer's furnishing of the performance security and signing of the Contract Agreement.

39. Forfeiture of Tender Security

- 39.1 The Tender Security may be forfeited, if a Tenderer:
- (a) withdraws its Tender after opening of Tenders but within the validity of the Tender as stated under ITT Clause 33 and 34; or
 - (b) refuses to accept a Notification of Award as stated under ITT Sub Clause 64.3; or
 - (c) fails to furnish Performance Security as stated under ITT Sub Clause 65.1 and 65.2; or
 - (d) refuses to sign the Contract as stated under ITT Sub Clause 70.2 ; or
 - (e) does not accept the correction of the Tender price following the correction of the arithmetic errors as stated under ITT Clause 55.

40. Format and Signing of Tender

- 40.1 Tenderers shall prepare one (1) original of the documents comprising the Tender as described in ITT Clause 24 and clearly mark it "ORIGINAL" In addition, the Tenderers shall prepare the number of copies of the Tender, as specified in the **TDS** and clearly mark each of them "COPY." In the event of any discrepancy between the original and the copies, the ORIGINAL shall prevail.
- 40.2 Alternatives, if permitted as stated under ITT Clause 26, shall be clearly marked "Alternative".
- 40.3 The original and each copy of the Tender shall be typed or written in indelible ink and shall be signed by the Person duly authorized to sign on behalf of the Tenderer. This Tender specific authorization shall be attached to the Tender Submission Letter (**Form PW3-1**). The name and position held by each Person(s) signing the authorization must be typed or printed below the signature. All pages of the original and of each copy of the Tender, except for un-amended printed literature, shall be numbered sequentially and signed by the person signing the Tender.
- 40.4 Any interlineations, erasures, or overwriting will be valid only if they are signed or initialled by the Person(s) signing the Tender.

41. Sealing, Marking and Submission of Tender

E. Tender Submission

- 41.1 Tenderers shall enclose the original in one (1) envelope and all the copies of the Tender, including the alternatives, if permitted under ITT Clause 26, in another envelope, duly marking the envelopes as "ORIGINAL (O)" "ALTERNATIVE (A)" (if permitted) and "COPY." These sealed envelopes will then be enclosed and sealed in one (1) single outer envelope.
- 41.2 The inner and outer envelopes shall:
 - (a) be addressed to the Procuring Entity at the address as stated under ITT Sub Clause 42.1;
 - (b) bear the name of the Tender and the Tender Number as stated under ITT Sub Clause 1.1;
 - (c) bear the name and address of the Tenderer;
 - (d) bear a statement "DO NOT OPEN BEFORE -----" the time and date for Tender opening as stated under ITT Sub Clause 48.1;
 - (e) bear any additional identification marks as specified in the **TDS**.
- 41.3 Tenderers are solely and entirely responsible for pre-disclosure of Tender information if the envelope(s) are not properly sealed and marked.
- 41.4 Tenders shall be delivered by hand or by mail, including courier services at the address(s) as stated under ITT Sub Clause 42.1.
- 41.5 The Procuring Entity will, on request, provide the Tenderer

with acknowledgement of receipt showing the date and time when it's Tender was received.

42. Deadline for Submission of Tender

- 42.1 Tenders shall be delivered to the Procuring Entity at the address specified in the **TDS** and not later than the date and time specified in the **TDS**.
- 42.2 The Procuring Entity may, at its discretion, extend the deadline for submission of Tender as stated under ITT Sub Clause 42.1, in which case all rights and obligations of the Procuring Entity and Tenderers previously subject to the deadline will thereafter be subject to the new deadline as extended.
- 42.3 If submission of Tenders is allowed in more than one location, the date and time, for submission of Tenders for both the primary and the secondary place(s), shall be the "**same and not different**" as specified in the **TDS**.
- 42.4 The Procuring Entity shall ensure that the Tenders received at the secondary place(s) are hand-delivered at the primary place as stated under ITT Sub Clause 42.1, within **THREE (3) HOURS** after the deadline for submission of Tenders at the secondary place (s), in case of **MULTIPLE DROPPING** as stated under ITT Sub Clause 42.3, as specified in the **TDS**.

43. Late Tender

- 43.1 Any Tender received by the Procuring Entity after the deadline for submission of Tenders as stated under ITT Sub Clause 42.1 shall be declared **LATE** and returned unopened to the Tenderer.

44. Modification, Substitution or Withdrawal of Tender

- 44.1 Tenderers may modify, substitute or withdraw its Tender after it has been submitted by sending a written notice duly signed by the authorized signatory and properly sealed, and shall include a copy of the authorization ; provided that such written notice including the affidavit is received by the Procuring Entity prior to the deadline for submission of Tenders as stated under ITT Clause 42.

45. Tender Modification

- 45.1 Tenderers shall not be allowed to retrieve its original Tender, but shall be allowed to submit corresponding modification to its original Tender marked as "**MODIFICATION (M)**".

46. Tender Substitution

- 46.1 Tenderers shall not be allowed to retrieve its original Tender, but shall be allowed to submit another Tender marked as "**SUBSTITUTION (S)**".

47. Tender Withdrawal

- 47.1 Tenderers shall be allowed to withdraw its Tender by a Letter of Withdrawal marked as "**WITHDRAWAL(W)**".

F. Tender Opening and Evaluation

48. Tender Opening

- 48.1 Tenders shall be opened immediately after the deadline for submission of Tenders at the primary place as specified in the **TDS** but not later than **ONE HOUR** after expiry of the submission deadline at the same primary place unless otherwise stated under ITT Sub Clause 48.2.
- 48.2 If submission of Tenders is allowed in more than one location as stated under ITT Sub Clause 42.3 and 42.4, Tenders shall be opened, immediately after receipt of Tenders from all the secondary place(s), at the primary place at the date and time as stated under ITT Sub Clause 48.1.
- 48.3 Persons not associated with the Tender may not be allowed to attend the public opening of Tenders.
- 48.4 Tenderers' representatives shall be duly authorised by the Tenderer. Tenderers or their authorised representatives will be allowed to attend and witness the opening of Tenders, and will sign a register evidencing their attendance.
- 48.5 The authenticity of withdrawal or substitution of, or modifications to original Tender, if any made by a Tenderer in specified manner, shall be examined and verified by the Tender Opening Committee (TOC) based on documents submitted as stated under ITT Sub Clause 44.1.
- 48.6 Ensuring that only the correct (M), (S), (A), (O) envelopes are opened, details of each Tender will be dealt with as follows:
- (a) the Chairperson of the TOC will read aloud each Tender and record in the Tender Opening Sheet (TOS):
 - (i) the name and address of the Tenderer;
 - (ii) state if it is a withdrawn, modified, substituted or original Tender;
 - (iii) the Tender price;
 - (iv) the official cost estimate;
 - (v) any discounts;
 - (vi) any alternatives;
 - (vii) the presence or absence of any requisite Tender Security; and
 - (viii) such other details as the Procuring Entity, at its discretion, may consider appropriate
 - (b) only discounts and alternatives read aloud at the Tender opening will be considered in evaluation.
 - (c) all pages of the original version of the Tender, except for un-amended printed literature, will be

initialled by members of the TOC.

48.7 Upon completion of Tender opening, all members of the TOC and the Tenderers or Tenderer's duly authorised representatives attending the Tender opening shall sign by name, address, designation, the TOS, copies of which shall be issued to the Head of the Procuring Entity or an officer authorised by him or her and also to the members of the TOC and any authorised Consultants and, to the Tenderers immediately.

48.8 The omission of a Tenderer's signature on the record shall not invalidate the contents and effect of the record under ITT Sub Clause 48.6.

48.9 No Tender will be rejected at the Tender opening stage except the LATE Tenders as stated in the ITT Clause 43.

49. Evaluation of Tenders

49.1 Tenders shall be examined and evaluated only on the basis of the criteria specified in the Tender Document.

49.2 **Tender Evaluation Committee (TEC)** shall examine, evaluate and compare Tenders that are responsive to the requirements of Tender Documents in order to identify the successful Tenderer.

49.3 Tenderers having quoted the tender price more than **10 (Ten) percent above or below** the official cost estimate, the tender will be rejected.

50. Evaluation Process

50.1 TEC may consider a Tender as responsive in the Evaluation, only if it is submitted in compliance with the mandatory requirements set out in the Tender Document. The evaluation process should begin immediately after Tender opening following four steps:

- (a) Preliminary examination
- (b) Technical examination and responsiveness
- (c) Financial evaluation and price comparison
- (d) Post-qualification of the Tender.

50.2 In case of tie for the evaluated price, the tenderer shall be selected based on the "Past Performance Evaluation and rating matrix for different aspects" to be used in assessing the Tenderer's quality as stated below:

Past Performance Evaluation and rating matrix for different aspects

Sl. No	Aspects of Evaluation	Measure of Rating	Past Performance Rating					Points Awarded
			4	5	6	7	8	
1	Number of court cases filed and won against PEs during last 5 years (a) Cases filed	No. of Court Cases	≥ 5 nos	< 5 but ≥ 3 nos	< 3 but ≥ 1 no	≤ 1 no	none	
	Points Allocated		0	25	50	75	100	
	Points Awarded							
	(b) Cases won	No. of Court Cases	None	≤ 1 nos	< 3 but ≥ 1 nos	< 5 but ≥ 3 nos	≥ 5 nos	

	Points Allocated		0	25	50	75	100		
	Points Awarded								
	For no Case filed and no Case won, the Points Awarded shall be taken as 200							-	
2	Debarred by PEs during last 5 years	No. of Years	≥ 5 yrs	< 5 but ≥ 3 yrs	< 3 but ≥ 1 yrs	≤ 1 yrs	none		
	Points Allocated		0	25	50	75	100		
	Points Awarded								
3	Termination of incomplete contract for poor performance by PEs during last 5 years	No. of Contracts	≥ 5 contract	< 5 but ≥ 3 contract	< 3 but ≥ 1 contract	≤ 1 contract	none		
	Points Allocated		0	50	75	100	150		
	Points Awarded								
4	Extension of Time beyond original contract period by PEs during last 5 years	Percent Time of Contract	≥ 50 % of contract period	< 50% but ≥ 30% of contract period	< 30% but ≥ 10% of contract period	≤ 10% of contract period	none		
	Points Allocated		0	5	5	100	150		
	Points Awarded								
5	Imposition of Liquidity Damages (LD) by PEs during last 5 years	Percent Time of Contract	≥ 50 % of contract period	< 50% but ≥ 30% of contract period	< 30% but ≥ 10% of contract period	≤ 10% of contract period	one		
	Points Allocated		0	50	75	100	150		
	Points Awarded								
6	Extension of contracted Defects Liability Period (DLP) by PEs during last 5 years	Percent Time of Contract	≥ 50 % of DLP	< 50% but ≥ 30% of DLP	< 30% but ≥ 10% of DLP	≤ 10% of DLP	one		
	Points Allocated		0	5	75	100	150		
	Points Awarded								
7	Declared bankrupt during last 5 years	Year Counting Backward	Year 2	Year 3	Year 4	Year 5	none		
	Points Allocated		0	25	50	75	100		
	Points Awarded								
	Total Points Allocated						1000	-	
	Total Points Awarded (Col.9)						-		

In case of multiple EQUALS in their Past Performance, total Turnover of last five (5) years shall determine the ranking.

51. Preliminary Examination

- 51.2 TEC shall examine the Tenders to confirm that all documentation as stated under ITT Clause 24 has been provided, to determine the completeness of each document submitted.
- 51.3 TEC shall confirm that the following documents and information have been provided in the Tender. If any of these documents or information is missing, the Tender shall be considered rejected.
- (a) Tender Submission Letter;
 - (b) Priced Bill of Quantities;
 - (c) Written confirmation authorizing the signatory of the Tender to commit the Tenderer; and
 - (d) Valid Tender Security.

52. Technical Responsiveness and Technical Evaluation

- 52.1 TEC's determination of a Tender's responsiveness is to be based on the contents of the Tender itself without recourse to extrinsic evidence.
- 52.2 A responsive Tender is one that conforms in all respects to the requirements of the Tender Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:
- (a) affects in any substantial way the scope, quality, or performance of the Works and physical services specified in the Contract; or
 - (b) limits in any substantial way, or is inconsistent with the Tender Documents, the Procuring Entity's rights or the Tenderer's obligations under the Contract; or
 - (c) if rectified would unfairly affect the competitive position of other Tenderers presenting responsive Tenders.

During the evaluation of Tenders, the following definitions shall apply:

"Deviation" is a departure from the requirements specified in the Tender Document;

"Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Tender Document; and

"Omission" is the failure to submit part or all of the information or documentation required in the Tender Document.

- 52.3 If a Tender is not responsive to the mandatory requirements set out in the Tender Document, shall not subsequently be made responsive by the Tenderer by correction of the material deviation, reservation, or omission.
- 52.4 There shall be no requirement as to the minimum number of responsive Tenders.
- 52.5 There shall be no automatic exclusion of Tenders which are above or below the official estimate except ITT sub-Clause 49.3.
- 52.6 TEC shall evaluate the aspects of the Tender submitted as stated under ITT Clauses 29, 30,31 and 32 and, to confirm that all requirements specified in Section 7:

General Specifications and Section 8: Particular Specifications of the Tender Document have been met without any material deviation, reservation or omission.

- 52.7 Provided that a Tender is responsive, TEC may request that the Tenderer submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Tender related to documentation requirements. Such omission shall not be related to any aspect of the rates of the Tender reflected in the Priced BOQ or any mandatory criteria. Failure of the Tenderer to comply with the request may result in the consideration of its Tender as non-responsive.
- 52.8 TEC may regard a Tender as responsive even if it contains;
- (a) minor or insignificant deviations which do not meaningfully alter or depart from the technical specifications, characteristics and commercial terms and, conditions or other mandatory requirements set out in the Tender Document; or
 - (b) errors or oversights, that if corrected, would not alter the key aspects of the Tender.

53. Clarification on Tender

- 53.1 TEC may ask Tenderers for clarification of their Tenders, including breakdowns of unit rates, in order to facilitate the examination and evaluation of Tenders. The request for clarification by the TEC and the response from the Tenderer shall be in writing, and Tender clarifications which may lead to a change in the substance of the Tender or in any of the key elements of the Tender as stated under ITT Sub Clause 52.2, will neither be sought nor be permitted.
- 53.2 Changes in the Tender price shall also not be sought or permitted, except to confirm the correction of arithmetical errors discovered by the TEC in the evaluation of the Tenders, as stated under ITT Sub Clause 55.1.
- 53.3 Any request for clarifications by the TEC shall not be directed towards making an apparently non-responsive Tender responsive and reciprocally the response from the concerned Tenderer shall not be articulated towards any addition, alteration or modification to its Tender.
- 53.4 If a Tenderer does not provide clarifications of its Tender by the date and time, its Tender shall not be considered in the evaluation

54. Restrictions on Disclosure of Information

- 54.1 Following the opening of Tenders until issuance of Notification of Award no Tenderer shall, unless requested to provide clarification to its Tender or unless necessary for submission of a complaint, communicate with the concerned Procuring Entity
- 54.2 Tenderers shall not seek to influence in anyway, the examination and evaluation of the Tenders
- 54.3 Any effort by a Tenderer to influence the Procuring

Entity in its decision concerning the evaluation of Tenders, Contract awards may result in the non-responsiveness of its Tender as well as further action in accordance with Section 64 (5) of the Public Procurement Act, 2006.

54.4 All clarification requests shall remind Tenderers of the need for confidentiality and that any breach of confidentiality on the part of the Tenderer may result in their Tender being non-responsive.

55. Correction of Arithmetical Errors

55.1 Provided that the Tender is responsive, the TEC shall correct arithmetical errors on the following basis:

- (a) if there is a discrepancy between the unit price and the line item total price that is obtained by multiplying the unit price and quantity, the unit price will prevail and the line item total price shall be corrected, unless in the opinion of the TEC there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted will govern and the unit price will be corrected; and
- (b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- (c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

55.2 TEC shall correct the arithmetic errors and shall promptly notify the concerned Tenderer(s). If the Tenderer does not accept the correction of arithmetic errors, its Tender shall be rejected.

56. Financial Evaluation

56.1 TEC will evaluate each Tender that has been determined, up to this stage of the evaluation, to be responsive to the requirements set out in the Tender Document.

56.2 To evaluate a Tender, the TEC will consider the following:

- (a) the Tender price, excluding Provisional Sums and the provision, if any, for contingencies in the priced BOQ, but including Daywork items ;
- (b) adjustments for correction of arithmetical errors, as stated under ITT Sub Clause 55.1;
- (c) adjustments in order to take into consideration the unconditional discounts as stated under ITT Sub Clause 27.5 and 27.6, if any..

56.3 Variations, deviations, alternatives and other factors which are in excess of the requirements of the Tender Document or otherwise result in unsolicited benefits for the Procuring Entity will not be taken into account in Tender evaluation.

56.4 The estimated effect of any price adjustment provisions under GCC Clause 71, applied over the period of

execution of the Contract, will not be taken into account in Tender evaluation.

- 56.5 If so indicated in the ITT Sub Clause 1.1 the Procuring Entity may award one or multiple lots to one Tenderer following the methodology specified in ITT Sub Clause 56.6.
- 56.6 To determine the lowest-evaluated lot/package the TEC will take into account:
- (a) the lowest-evaluated Tender for each lot;
 - (b) the resources sufficient to meet the qualifying criteria for the individual lot or aggregate of the qualifying criteria for the multiple lots;
 - (c) the price reduction on account of discount per lot/package as offered by the Tenderer in its Tender; and
 - (d) the Contract-award sequence that provides the optimum economic combination on the basis of least overall cost of the total Contract package taking into account any limitations due to constraints in Works or execution capacity determined in accordance with the tender capacity as stated in ITT Sub Clause 15.1 (d) and post-qualification criteria as stated under ITT Clause 59.
- 56.7 TEC may recommend to increase the amount of the Performance Security above the amounts as stated under ITT Sub Clause 65.1 but not exceeding twenty-five (25) percent of the Contract Price, if in the opinion of TEC, it is found that the Tender is significantly below the updated official estimated cost or unbalanced as a result of front loading.

57. Price Comparison

- 57.1 TEC shall compare all responsive Tenders to determine the lowest-evaluated Tender, as stated under ITT Clause 56.
- 57.2 In the extremely unlikely event that there is a tie for the lowest evaluated price, the Tenderer with the superior past performance as stated in ITT sub-clause 50.2 shall be selected.
- 57.3 In the event that there is a tie for the lowest price and none of the Tenderers has the record of past performance with the Procuring Entity as stated under ITT Sub Clause 57.2, then the Tenderer shall be selected, subject to firm confirmation through the Post-qualification process, after consideration as to whether the Tenderer has demonstrated in its Tender superior past performance with the other Procuring Entities or a more efficient work programme and work methodology.
- 57.4 The successful Tenderer as stated under ITT Sub Clause 57.1, 57.2 and 57.3 shall not be selected through lottery under any circumstances.

58. Negotiations

- 58.1 No negotiations shall be held during the Tender evaluation or award, with the lowest or any other Tenderer.

- 58.2 The Procuring Entity through the TEC may, however, negotiate with the lowest evaluated Tenderer with the objective to reduce the Contract Price by reducing the scope of works or a reallocation of risks and responsibilities, only when it is found that the lowest evaluated Tender is significantly higher than the official estimated cost; the reasons for such higher price being duly investigated.
- 58.3 If the Procuring Entity decides to negotiate for reducing the scope of the requirements under ITT Sub Clause 58.2, it will be required to guarantee that the lowest Tenderer remains the lowest Tenderer even after the scope of work has been revised and shall further be ensured that the objective of the Procurement will not be seriously affected through this reduction.
- 58.4 In the event that the Procuring Entity decides because of a high Tender price to reduce the scope of the requirements to meet the available budget, the Tenderer is not obliged to accept the award and shall not be penalised in any way for un-accepting the proposed award.

59. Post-qualification

- 59.1 The determination on Post-qualification shall be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to ITT Clause 32, clarifications as stated under ITT Clause 53 and the qualification criteria indicated in ITT Clauses 12 to 17. Factors not included therein shall not be used in the evaluation of the Tenderer's qualification.
- 59.2 An affirmative determination shall be a prerequisite for award of the Contract to the Tenderer. A negative determination shall result in non-responsiveness of the Tenderer's Tender, in which event the Procuring Entity shall proceed to the next lowest evaluated Tender to make a similar determination of that Tenderer's capabilities to perform the Contract satisfactorily, if awarded.
- 59.3 TEC may verify information contained in the Tender by visiting the premises of the Tenderer as a part of the post qualification process, if practical and appropriate.

60. Procuring Entity's Right to Accept any or to Reject Any or All Tenders

- 60.1 The Procuring Entity reserves the right to accept any Tender or to reject any or all the Tenders any time prior to contract award and , to annul the Procurement proceedings with prior approval of the Head of the Procuring Entity, any time prior to the deadline for submission of Tenders following specified procedures, without thereby incurring any liability to Tenderers, or any obligations to inform the Tenderers of the grounds for the Procuring Entity's action.

61. Rejection of All Tenders

61.1 The Procuring Entity may, in the circumstances as stated under ITT Sub Clause 61.2 reject all Tenders following recommendations from the TEC only after the approval of such recommendations by the Head of the Procuring Entity.

61.2 All Tenders can be rejected, if -

- (a) the price of the lowest evaluated Tender exceeds the official estimated cost, provided the estimate is realistic, subject to ITT Sub Clause 58.2 ; or
- (b) there is evidence of lack of effective competition; such as non-participation by a number of potential Tenderers; or
- (c) the Tenderers are unable to propose completion of the contract within the stipulated time in its Tender, though the stipulated time is reasonable and realistic; or
- (d) all Tenders are non-responsive; or
- (e) evidence of professional misconduct, affecting seriously the Procurement process, is established pursuant to Rule 127 of the Public Procurement Rules, 2008

61.3 61.3 Notwithstanding anything contained in ITT Sub-Clause 61.2 Tenders may not be rejected if the lowest evaluated price is in conformity with the market price.

62. Informing Reasons for Rejection

62.1 Notice of the rejection will be given promptly within seven (7) working days of decision taken by the Procuring Entity to all Tenderers and, the Procuring Entity will, upon receipt of a written request, communicate to any Tenderer the reason(s) for its rejection but is not required to justify those reason(s).

G. Contract Award

63. Award Criteria

63.1 The Procuring Entity shall award the Contract to the Tenderer whose Tender is responsive to all the requirements of the Tender Document and that has been determined to be the lowest evaluated Tender, provided further that the Tenderer is determined to be Post-qualified in accordance with ITT Clause 59.

63.2 Tenderer will not be required, as a condition for award, to undertake responsibilities not stipulated in the Tender Documents, to change its price, or otherwise to modify its Tender.

64. Notification of Award

64.1 Prior to the expiry of the Tender Validity period and within one (1) week of receipt of the approval of the award by the Approving Authority, the Procuring Entity shall issue the Notification of Award (NOA) to the successful Tenderer.

64.2 The NOA, attaching the contract as per the sample

(Form PW3-8) to be signed, shall state :

- (a) the acceptance of the Tender by the Procuring Entity;
- (b) the price at which the contract is awarded;
- (c) the amount of the Performance Security and its format;
- (d) the date and time within which the Performance Security shall be furnished; and
- (e) the date and time within which the Contract shall be signed.

64.3 The NOA shall be accepted by the successful Tenderer within seven (7) working days from the date of its issuance.

64.4 Until a formal contract is signed, the NOA will constitute a Contract, which shall become binding upon the furnishing of a Performance Security and the signing of the Contract by both parties.

65. Performance Security

66.1 Performance Security shall be provided by the successful Tenderer in BDT currency, of the amount as specified in the **TDS**.

66.2 The Procuring Entity shall increase the amount of the Performance Security on the recommendation of TEC above the amounts as stated under ITT Sub Clause 56.7.

66.3 The proceeds of the Performance Security shall be payable to the Procuring Entity unconditionally upon first written demand as compensation for Contractor's failure to complete its obligations under the Contract.

66.4 In the event a Government owned enterprise as stated under ITT Sub Clause 5.10 is the successful Tenderer, Performance Security, as stated under ITT Sub Clause 65.1, shall not be required and, in lieu, there shall be Retention Money as specified in the **TDS**.

66. Form and Time Limit for Furnishing of Performance Security

66.1 Performance Security, as stated under ITT Clause 65, may be in the form of a Bank Draft, Pay Order or an irrevocable unconditional Bank Guarantee in the format **(Form PW3-10)**, without any alteration, issued by any scheduled Bank of Bangladesh acceptable to the Procuring Entity.

66.2 Within fourteen (14) days from the date of acceptance of the NOA but not later than the date specified therein, the successful Tenderer shall furnish the Performance Security for the due performance of the Contract in the amount as stated under ITT Sub Clauses 65.1 or 65.2.

- 67. Validity of Performance Security** 67.1 Performance Security shall be required to be valid until a date twenty-eight (28) days beyond the Intended Completion Date as specified in Tender Document.
- 68. Authenticity of Performance Security** 68.1 The Procuring Entity shall verify the authenticity of the Performance Security submitted by the successful Tenderer by sending a written request to the branch of the Bank issuing the Pay Order, Bank Draft or irrevocable unconditional Bank Guarantee in specified format.
- 69. Contract Signing** 69.1 At the same time as the Procuring Entity issues the NOA, the Procuring Entity will send the draft Contract Agreement and all documents forming the Contract to the successful Tenderer.
- 69.2 Within twenty-eight (28) days of the issuance of the NOA, the successful Tenderer and the Procuring Entity shall sign the contract. In the event the successful Tenderer is a JV, all partners of that JV must sign.
- 69.3 Failure of the successful Tenderer to submit the Performance Security, as stated under ITT Sub Clause 65.1, or to sign the Contract, as stated under ITT Sub Clause 69.2, shall constitute sufficient grounds for the annulment of the award and forfeiture of the Tender Security. In that event the Procuring Entity may award the Contract to the next lowest evaluated responsive Tenderer, who is determined by the TEC to be qualified to perform the Contract satisfactorily.
- 70. Publication of Notification of Award of Contract** 70.1 The NOA for Contract shall be notified by the Procuring Entity to the Central Procurement Technical Unit within seven (7) days of its issuance for publication in their website, and that notice shall be kept posted for not less than a month.
- 71. Debriefing of Tenderers** 71.1 Debriefing of Tenderers by the Procuring Entity shall outline the relative status and weakness only of his or her Tender requesting to be informed of the grounds for not accepting the Tender submitted by him or her, without disclosing information about any other Tenderer.
- 71.2 In the case of debriefing, confidentiality of the evaluation process shall be maintained.
- 72. Adjudicator** 72.1 The Procuring Entity proposes the person named in the **TDS** to be appointed as Adjudicator under the Contract, at an hourly fee and for those reimbursable expenses as specified in the **TDS**.
- 73. Right to Complain** 73.1 Tenderer has the right to complain in accordance with the Public Procurement Act 2006 and the Public Procurement Rules, 2008.

Section 2. Tender Data Sheet

Instructions for completing Tender Data Sheet are provided in italics in parenthesis for the relevant ITT clauses

ITT Clause	Amendments of, and Supplements to, Clauses in the Instructions to Tenderers
A. General	
ITT 1.1	<p>The Procuring Entity is The Procuring Entity is: Project Director, Rural Electrification Expansion Dhaka Division Program-II (Revised) Bangladesh Rural Electrification Board</p> <p>The Name of the Tender is: Supply Installation Testing & Commissioning of 33/11KV Sub-Station on Turn-Key Basis.</p> <p>Tender Ref: 27.12.2637.131.87.011.17.910 Date: 27.04.2017</p> <p>Lot No(s): DDP-II-SSN-02-Lot-2/1</p>
ITT 3.1	The source of public funds is : GOB
ITT 3.3	The name of the Development Partner is : Not Applicable
ITT 5.1	Tenderers from the following countries are not eligible : All Countries other than Bangladesh
ITT 5.13	Tenderers shall have the following up to date valid License: None
ITT 6.1	Materials, Equipment and associated services from the following countries are not eligible: Israel.
B. Tender Document	
ITT 8.2	<p>The following are authorised agents/offices of the Procuring Entity for the purpose of issuing the Tender Document:</p> <p><u>Agent's/office Name:</u> Office of the Project Director, Rural Electrification Expansion Dhaka Division Program-II (Revised)</p> <p><u>Address:</u> Bangladesh Rural Electrification Board Training Academy Building (5th floor), Nikunja-2, Khilkhet Dhaka-1229, Bangladesh.</p> <p>Telephone No.: 8900035.</p> <p>Fax No.:</p> <p>e-mail address: pddd2breb@gmail.com</p>

<p>ITT 9.1</p>	<p>For clarification of Tender Document purposes only, the Procuring Entity's address is: Attention: Project Director, Rural Electrification Expansion Dhaka Division Program-II (Revised) Address: Bangladesh Rural Electrification Board Training Academy Building (5th floor), Nikunja-2, Khilkhet Dhaka-1229, Bangladesh.</p> <p>Telephone: 8900035. Fax No.: e-mail address: <u>pddd2breb@gmail.com</u> and contact the Procuring Entity within 22.05.2017</p>								
<p>ITT 10.1</p>	<p>A Pre- Tender meeting shall be held at Address: Office of the Project Director, Rural Electrification Expansion Dhaka Division Program-II (Revised) Bangladesh Rural Electrification Board Training Academy Building (5th floor), Nikunja-2, Khilkhet Dhaka-1229, Bangladesh</p> <p>Time & Date: 11.00 AM (BST) & 22.05.2017</p> <p>A site visit conducted by the Employer will not be organized.</p> <p>Tenderers are advised to conduct site visit at their own responsibility. The Employer may arrange necessary permissions if requested by the Tenderers.</p> <p>The costs and expenses associated with attending the pre-Tender meeting and/or site visit shall be borne by the Potential Tenderers.</p>								
<p>C. Qualification Criteria</p>									
<p>ITT 14.1(a)</p>	<p>The minimum number of years of general experience of the Tenderer in the construction works as Prime Contractor or Subcontractor or Management Contractor shall be 5(Five) years.</p> <p><i>[a minimum of three (3) years would be deemed reasonable; years counting backward from the date of publication of IFT in the newspaper]</i></p>								
<p>ITT 14.1(b)</p>	<p>i) Specific experience:- In the case of single entity the minimum specific experience as a Prime Contractor or Subcontractor or Management Contractor in construction works at least 1(one) contract(s) of Indoor Type 33KV Switching Station or 132/33KV Sub Station or 33/11 KV Indoor Sub-station successfully completed within the last 05 (five) years, each with a value of at least as following:</p> <table border="1" data-bbox="347 1529 1353 1599"> <thead> <tr> <th>Lot No.</th> <th>Amount in Taka</th> </tr> </thead> <tbody> <tr> <td>DDP-II-SSN-02-Lot-2/1</td> <td>9,00,00,000.00</td> </tr> </tbody> </table> <p>ii) Joint venture, Consortium or Association (JVCA) may be made by 1(one) supply contractor and 01(one) construction contractor. In that case, the leading partner must have successfully completed at least 01 (one) contract of Indoor Type 33KV Switching Station or 132/33KV Sub Station or 33/11 KV Indoor Sub-station within the last 5(five) years each with a value of at least as following:</p> <table border="1" data-bbox="347 1771 1353 1841"> <thead> <tr> <th>Lot No.</th> <th>Amount in Taka</th> </tr> </thead> <tbody> <tr> <td>DDP-II-SSN-02-Lot-2/1</td> <td>9,00,00,000.00</td> </tr> </tbody> </table>	Lot No.	Amount in Taka	DDP-II-SSN-02-Lot-2/1	9,00,00,000.00	Lot No.	Amount in Taka	DDP-II-SSN-02-Lot-2/1	9,00,00,000.00
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Lot No.	Amount in Taka								
DDP-II-SSN-02-Lot-2/1	9,00,00,000.00								

ITT 15.1(a)	<p>The required average annual supply/ construction turnover shall be greater than Tk. mentioned below over the last 3 (three) years .</p> <table border="1" data-bbox="347 309 1353 376"> <thead> <tr> <th>Lot No.</th> <th>Amount in Taka</th> </tr> </thead> <tbody> <tr> <td>DDP-II-SSN-02-Lot-2/1</td> <td>30,00,00,000.00</td> </tr> </tbody> </table>	Lot No.	Amount in Taka	DDP-II-SSN-02-Lot-2/1	30,00,00,000.00																
Lot No.	Amount in Taka																				
DDP-II-SSN-02-Lot-2/1	30,00,00,000.00																				
ITT 15.1(b)	<p>The minimum amount of liquid assets i.e working capital or credit line(s) of the Tenderers shall be as following:</p> <table border="1" data-bbox="347 539 1353 607"> <thead> <tr> <th>Lot No.</th> <th>Amount in Taka</th> </tr> </thead> <tbody> <tr> <td>DDP-II-SSN-02-Lot-2/1</td> <td>11,00,00,000.00</td> </tr> </tbody> </table>	Lot No.	Amount in Taka	DDP-II-SSN-02-Lot-2/1	11,00,00,000.00																
Lot No.	Amount in Taka																				
DDP-II-SSN-02-Lot-2/1	11,00,00,000.00																				
ITT 15.1(d).	<p>The minimum capacity shall be as following:</p> <table border="1" data-bbox="347 663 1353 730"> <thead> <tr> <th>Lot No.</th> <th>Amount in Taka</th> </tr> </thead> <tbody> <tr> <td>DDP-II-SSN-02-Lot-2/1</td> <td>21,00,00,000.00</td> </tr> </tbody> </table> <p>The following formulae shall be used to calculate the Tender Capacity Assessed Tender Capacity = (A*N*1.5-B) Where A=Maximum value of Works performed in any one year during last five years N= Completion time of the proposed work in years B= Value of Existing commitments and works to be completed during the next N Years For Tenders where the package contains more than one (1) Lot, this qualification requirement shall be mentioned separately for each lot in the package Note 1: In case the value of N is less than 12 (twelve) months the value of N shall be considered as 01 (one) Note 2: In case of JV tender capacity requirement for leading partner shall be minimum 40% and for other partners shall be minimum 25%.</p>	Lot No.	Amount in Taka	DDP-II-SSN-02-Lot-2/1	21,00,00,000.00																
Lot No.	Amount in Taka																				
DDP-II-SSN-02-Lot-2/1	21,00,00,000.00																				
ITT 16.1	<p>A Construction Project Manager, Engineer, and other key staff shall have the following qualifications and experience:</p> <table border="1" data-bbox="323 1350 1457 1787"> <thead> <tr> <th>No</th> <th>Position</th> <th>Total Working Experience (overall years)</th> <th>In Similar Working Experience (years)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Project Manager (B.Sc. Engineer) (Electrical / Mechanical)- (1/1 no)</td> <td>10 Years</td> <td>05 Years.</td> </tr> <tr> <td>2.</td> <td>Site Engineer (B.Sc./ Diploma Engr.) (Electrical / Mechanical)- (2/2 nos)</td> <td>5/10 Years.</td> <td>03 Years.</td> </tr> <tr> <td>3.</td> <td>Site Engineer (B.Sc./Diploma Engr.) (Civil)- 2 (Two)nos.</td> <td>5/10 Years.</td> <td>03 Years.</td> </tr> <tr> <td>4.</td> <td>Site Supervisor, Foreman, Lineman for line construction/augmentation works (4 nos)</td> <td>05 Years</td> <td>03 Years.</td> </tr> </tbody> </table> <p>The Number of key staffs mentioned above may be required to increase according to the site condition.</p>	No	Position	Total Working Experience (overall years)	In Similar Working Experience (years)	1.	Project Manager (B.Sc. Engineer) (Electrical / Mechanical)- (1/1 no)	10 Years	05 Years.	2.	Site Engineer (B.Sc./ Diploma Engr.) (Electrical / Mechanical)- (2/2 nos)	5/10 Years.	03 Years.	3.	Site Engineer (B.Sc./Diploma Engr.) (Civil)- 2 (Two)nos.	5/10 Years.	03 Years.	4.	Site Supervisor, Foreman, Lineman for line construction/augmentation works (4 nos)	05 Years	03 Years.
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4.	Site Supervisor, Foreman, Lineman for line construction/augmentation works (4 nos)	05 Years	03 Years.																		
ITT 17.1	<p>Tenderers shall own or have proven access to hire or lease of the major construction equipment, in full working order as follows: The tendered shall submit list of tools & equipment owned by them or have to submit evidence that they own or letter of authorization that they are assured to hire the required equipment, so that they could engage the equipment from the day of starting of the work to ensure the completion of the Project within the specified completion time with the technical proposal.</p>																				

ITT 18.1	The value of non-judicial stamp for execution of the Joint Venture Agreement shall be Tk 300 only			
ITT 18.2	Maximum number of partners in the JV shall be <i>3(three)</i>			
	The minimum qualification requirements of Leading Partner, other Partner(s) and requirements by summation of a JV shall be as follows :			
	TDS Clauses References	Requirements by summation	Requirements for Leading Partner	Requirements for other Partner(s)
	ITT-14.1(a)	Summation not applicable	Same as stated in TDS	Same as for Leading Partner
	ITT-14.1(b)	100% (summation of different contracts)	At least one Contract	Minimum requirement not applicable
	ITT-15.1(a)	100%	40%	25%
	ITT-15.1(b)	100%	40%	25%
	ITT-16.1(a)	100%	Minimum requirement not applicable	Minimum requirement not applicable
ITT-17.1	100%	Minimum requirement not applicable	Minimum requirement not applicable	
ITT 19.4	The Nominated Subcontractor(s) named [insert name(s)] shall execute the following specific components of the proposed Works: Not Applicable			

D. Tender Preparation

ITT 24.1 (m)	<p>The Tenderer shall submit the following additional documents furnished below with its Technical Proposal:</p> <ol style="list-style-type: none"> 1. Tenderers shall furnish copies of ISO 9001/9002 or equivalent certificates of proposed manufacturers for individual equipment, supply record of at least ten (10) years of equipment of the proposed manufacturers as on the date of tender opening and evidence from users satisfactory service mentioned above. The said equipment shall be in satisfactory service in humid tropical climate for a minimum of three (3) years 2. The tenderer shall submit satisfactory type test certificates of all the equipment to be supplied under this contract. 3. The Tenderer/manufacturer shall submit with its Tender the following additional documents: All necessary papers, test report, samples, catalogue etc as described in the technical specification of the Tender document. 4. The tender shall submit along with offer all type & routine test reports of offered equipment as mentioned in the specification enclosed in the tender document from internationally recognized independent testing laboratory such as KEMA HOLLAND, CESI-ITALY, Underwriters Laboratory (UL), U.S.A. CPRI-INDIA or equivalent laboratory for the equipment to be offered. For the test reports from the laboratories other than KEMA, CESI, UL-USA or CPRI, INDIA the tenderer must furnish evidence in support of the status of the laboratories, which should be acceptable to BREB. The Manufacturer's own test report will not be accepted.
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| | <p>5.</p> <ul style="list-style-type: none"> i. Technical specification and brochures of equipment/plant to be incorporated in the works ii. Letter of authorization to the effect that the Tenderer is authorized to submit Tender on behalf of the respective manufacturers and the Tenderer has the authority to supply equipment to the Employer from the proposed manufacturers for 33 kV Circuit Breakers (VCB), 11kV Indoor Breaker, Disconnecting Switches (DS), 33 kV Current Transformers (CT), 33 kV Voltage Transformers (VT), Surge Arrestors, Power Cables, Protective Relays, Insulators and hardware fittings for conductors, earthwires and insulators. iii. Supply records of the manufacturer of 33 kV Circuit Breakers, 33 kV CT, PT, Surge Arrestors, Protective Relays, Insulators for the last ten (10) years. <p>6. Performance certificates of the above equipment</p> <p>7. Tender Capacity / Bank solvency certificate from their banker showing capability of handling the projects.</p> <p>8. Table of contents with page no.</p> <p>9. Tender purchased receipt/Document.</p> <p>10. Power of attorney in favour of the tender signatory.</p> <p>11. A written confirmation of Authorization to sign on behave of the tenderer.</p> <p>12. Statement of works in hand to be completed next 01(one) year including its value of uncompleted portion.</p> |
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ITT 26.1	Alternatives will not be permitted.				
ITT 26.2	Alternative technical solutions for any parts of works will not be permitted.				
ITT 27.9	The prices quoted by the Tenderers shall be fixed for the duration of the Contract.				
ITT 31.1	<p>The required Technical Proposal shall include the following additional information:</p> <ol style="list-style-type: none"> I. Work plan II. Statement of working method III. Technical specification and brochures of machineries plant to be incorporated in the works. IV. Methodology of foundation, erection and stringing. V. Time Schedule in bar chart. VI. Organogram of the required man power for implementing of this project. VII. Letter of authorization to the effect that the Tendered is authorized to submit the Tender on behalf of the respective manufacturer and that the Tendered has the authority to supply such equipment to the employer from the proposed manufacturers for construction of switching station. VIII. Supply record of the manufacturer of the Equipment's for switching station described in BOQ. IX. A certificate from end user that the said Switching Station are in service satisfactorily for minimum three (3) years. The certificate shall be in a letter head pad mentioning fax, e-mail, telephone number of contact person. The same will preferable for related items also like Equipment's described in BOQ. X. Electrical and Mechanical type test certificates shall be from an independent reputed Testing Laboratory for the Equipment's described in BOQ. XI. ISO 9001/9002 -2008 or equivalent certificates of proposed manufactures for individual Equipment's described in BOQ XII. Design documents as per Schedule -I of the Tender Document. XIII. Personnel required for the work. XIV. Equipment's required for the work. 				
ITT 32.1(e)	The required information regarding claims under litigation shall be current or during the last 5 years .				
ITT 32.1 (i)	The required reports on the financial standing, such as profit and loss statements and audited balance sheet shall be for the past 5 years .				
ITT 33.1	The Tender Validity period shall be 120 days.				
ITT 35.1	<p>The Amount of the Tender Security Shall be:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Sub-Package No.</th> <th style="text-align: center;">Taka</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">DDP-II-SSN-02-Lot-2/1</td> <td style="text-align: center;">75,00,000.00</td> </tr> </tbody> </table> <p>In favour of Project Director, REE-DDP-II, BREB.</p>	Sub-Package No.	Taka	DDP-II-SSN-02-Lot-2/1	75,00,000.00
Sub-Package No.	Taka				
DDP-II-SSN-02-Lot-2/1	75,00,000.00				
ITT 40.1	In addition to the original of the Tender, 2 copies shall be submitted.				
E. Tender Submission					
ITT 41.2(e)	<p>The inner and outer envelopes shall bear the following additional identification marks :</p> <p>Project Director, Rural Electrification Expansion Dhaka Division Program-II (Revised)</p> <p>Address: Bangladesh Rural Electrification Board</p> <p style="text-align: center;">Training Academy Building (5th floor), Nikunja-2, Khilkhet Dhaka-1229, Bangladesh.</p> <p>Do not open before 12:30 Noon (BST) on 05.06.17</p>				

ITT 42.1	<p>For <u>Tender submission purposes</u> only, the Procuring Entity's address is: Attention: Md. Abdur Rahim Mallik, Project Director, Rural Electrification Expansion Dhaka Division Program-II (Revised) Address: Bangladesh Rural Electrification Board Training Academy Building (5th floor) Nikunja-2, Khilkhet, Dhaka-1229, Bangladesh. Telephone: 8900035. e-mail address: pddd2breb@gmail.com The deadline for submission of Tenders is : Time & Date: 05.06.17 up to 12.00 Noon (BST)</p>
ITT 42.3	<p>For <u>Tender submission purposes</u> only, the Procuring Entity's address is: <i>[in case of multiple dropping state below the addresses of the PRIMARY PLACE and SECONDARY PLACES with Time and Date]</i> Attention: Md. Abdur Rahim Mallik, Project Director, Rural Electrification Expansion Dhaka Division Program-II (Revised). Address (PRIMARY PLACE): BREB Auditorium (1st Floor), Head Office Building, BREB, Nikunja-2, Khilkhet, Dhaka-1229, Bangladesh. The deadline for the submission of Tenders is: Time & Date: 05.06.17 up to 12.00 Noon (BST)</p>
ITT 42.4	<p>The deadline for hand-delivering of the Tenders at the PRIMARY PLACE is: Time & Date: 05.06.17 up to 12.00 Noon (BST)</p>
F. Tender Opening and Evaluation	
ITT 48.1	<p>The Tender opening shall take place at BREB Auditorium (1st Floor), Head Office Building, BREB, Nikunja-2, Khilkhet, Dhaka-1229, Bangladesh. Do not open before 12:30 Noon (BST) on 05.06.17</p>
G. Contract Award	
ITT 65.1	<p>The amount of Performance Security shall be 10 (ten) percent of the Contract Price.</p>
ITT 65.4	<p>The Retention Money shall be deducted @ ten (10) percent from the successful Tenderer's payable invoices during Contract implementation, if awarded the Contract.</p>
ITT 72.1	<p>The Adjudicator proposed by the Procuring Entity is: To be appointed as required in future.</p>

Section 3. General Conditions of Contract

A. General

1. Definitions

1.1 In the Conditions of Contract, which include Particular Conditions and these General Conditions, the following words and expressions shall have the meaning hereby assigned to them. Boldface type is used to identify the defined terms:

- (a) **Act means** The Public Procurement Act, 2006 (Act 24 of 2006).
- (b) **Adjudicator** is the expert appointed jointly by the Procuring Entity and the Contractor to resolve disputes in the first instance, as provided for in GCC Sub Clause 92.2.
- (c) **Approving Authority** means the authority which, in accordance with the Delegation of Financial Powers, approves the award of contract.
- (d) **Bill of Quantities (BOQ)** means the priced and completed Bill of Quantities forming part of the Contract defined in GCC Clause 59.
- (e) **Compensation Events** are those defined in GCC Clause 67.
- (f) **Competent Authority** means the authority that gives decision on specific issues as per delegation of administrative and/or financial powers.
- (g) **Completion Certificate** means the Certificate issued by the Project Manager as evidence that the Contractor has executed the Works and physical services in all respects as per design, drawing, specifications and Conditions of Contract.
- (h) **Completion Date** is the actual date of completion of the Works and physical services certified by the Project Manager, in accordance with GCC Clause 78.
- (i) **Contract Agreement** means the Agreement entered into between the Procuring Entity and the Contractor, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein to execute, complete, and maintain the Works.
- (j) **Contract Documents** means the documents listed in GCC Clause 6, including any amendments thereto.
- (k) **Contractor** means the Person under contract with the Procuring Entity for the execution of Works under the Rules and the Act as stated in the **PCC**.
- (l) **Contract Price** means the price payable to the Contractor as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions therefrom, for the execution, completion and maintenance of the Works in accordance with the provisions of the Contract.
- (m) **Contractor's Tender** is the completed Tender Document including the priced BOQ and the Schedules submitted by the

- Contractor to the Procuring Entity.
- (n) **Cost** means all expenditures reasonably incurred or to be incurred by the Contractor, whether on or off the Site, including overhead, taxes, duties, fees and such other similar levies including corresponding incidental charges and premiums for banking and insurances, as applicable.
 - (o) **Day** means calendar day unless otherwise specified as working days.
 - (p) **Dayworks** means work carried out following the instructions of the Procuring Entity or the authorised Project Manager and is paid for on the basis of time spent by the Contractor's workers and equipment at the rates specified in the Schedules, in addition to payments for associated Materials and Plant.
 - (q) **Defect** is any part of the Works not completed in accordance with the Contract.
 - (r) **Defects Correction Certificate** is the certificate issued by the Project Manager upon correction of defects by the Contractor.
 - (s) **Drawings** include calculations and other information provided in Section 9 or as approved by the Project Manager for the execution and completion of the Contract.
 - (t) **Equipment** is the Contractor's apparatus, machinery, vehicles and other things required for the execution and completion of the Works and remedying any defects excluding Temporary Works and the Procuring Entity's Equipment (if any), Plant, Materials and any other things to form or forming part of the Permanent Works.
 - (u) **Force Majeure** means an event or situation beyond the control of the Contractor that is not foreseeable, is unavoidable, and its origins not due to negligence or lack of care on the part of the Contractor; such events may include, but not be limited to, acts of the Government in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes or more as included in GCC Clause 83;
 - (v) **GCC** means the General Conditions of Contract.
 - (w) **Government** means the Government of the People's Republic of Bangladesh.
 - (x) **Goods** mean the Contractor's Equipment, Materials, Plant and Temporary Works, or any of them as appropriate.
 - (y) **"Head of the Procuring Entity"** means the Secretary of a Ministry or a Division, the Head of a Government Department or Directorate; or the Chief Executive, or as applicable, Divisional Commissioner, Deputy Commissioner, Zilla Judge; or by whatever designation called, of a local Government agency, an autonomous or semi-autonomous body or a corporation, or a corporate body established under the Companies Act;
 - (z) **Intended Completion Date** is the date calculated from the Commencement Date as specified in the **PCC**, on which it is intended that the Contractor shall complete the Works and physical services as specified in the Contract and may be revised only by the Project Manager by issuing an extension of time or an acceleration order.

- (aa) **Materials** means things of all kinds other than Plant intended to form or forming part of the Permanent Works, including the supply-only materials, if any, to be supplied by the Contractor under the Contract.
- (bb) **Month** means calendar month.
- (cc) **Original Contract Price** is the Contract Price stated in the Procuring Entity's Notification of Award (**Form PW3-7**) and further clearly determined in the **PCC**.
- (dd) **Permanent works** means the permanent works to be executed by the Contractor under the Contract.
- (ee) **PCC** means the Particular Conditions of Contract.
- (ff) **Plant** means the apparatus, machinery and other equipment intended to form or forming part of the Permanent Works, including vehicles purchased for the Procuring Entity and relating to the construction of the Works and physical services.
- (gg) **Procuring Entity** means a Procuring Entity having administrative and financial powers to undertake procurement of Works and physical services using public funds and is as named in the **PCC** who employs the Contractor to carry out the Works.
- (hh) **Project Manager** is the person named in the **PCC** or any other competent person appointed by the Procuring Entity and notified to the Contractor who is responsible for supervising the execution and completion of the Works and physical services and administering the Contract.
- (ii) **Provisional Sums means** amounts of money specified by the Procuring Entity in the BOQ which shall be used, at its discretion for meeting other essential expenditures under the Contract pursuant to GCC Sub Clause 75.
- (jj) **Retention Money** means the accumulated retention moneys which the Procuring Entity retains under GCC Clause 70.
- (kk) **Schedules** means the document(s) entitled schedules, completed by the Contractor and submitted with the Tender Submission Letter, as included in the Contract. Such document may include the data, lists and schedules of rates and/or prices.
- (ll) **Site** means the places where the Permanent Works are to be executed including storage and working areas and to which Plant and Materials are to be delivered, and any other places as may be specified in the **PCC** as forming part of the Site.
- (mm) **Site Investigation Reports** are those that were included in the Tender Document and are factual and interpretative reports about the surface and subsurface conditions at the Site.
- (nn) **Specification** means the Specification of the Works included in the Contract and any modifications or additions to the specifications made or approved by the Project Manager in accordance with the Contract.
- (oo) **Start Date** is the date defined in the **PCC** and it is the last date when the Contractor shall commence execution of the Works under the Contract.
- (pp) **Subcontractor** means a person or corporate body, who has a

contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.

- (qq) **Temporary Works** means all temporary works of every kind other than Contractor's Equipment required on the Site for the execution and completion of the Permanent Works and remedying of any defects.
- (rr) **Variation** means any change to the Works directly procured from the original Contractor to cover increases or decreases in quantities, including the introduction of new work items (non-Tendered items) that are either due to change of plans, design or alignment to suit actual field conditions, within the general scope and physical boundaries of the contract.
- (ss) **Works** means all works associated with the construction, reconstruction, site preparation, demolition, repair, maintenance or renovation of railways, roads, highways, or a building, an infrastructure or structure or an installation or any construction work relating to excavation, installation of equipment and materials, decoration, as well as physical services ancillary to works as detailed in the **PCC**, if the value of those services does not exceed that of the Works themselves.

Writing means communication written by hand or machine duly signed and includes properly authenticated messages by facsimile or electronic mail.

2. Interpretation

- 2.1 In interpreting the GCC, singular also means plural, male also means female or neuter, and the other way around. Headings in the GCC shall not be deemed part thereof or be taken into consideration in the interpretation or construance of the Contract. Words have their normal meaning under the language of the Contract unless specifically defined.
- 2.2 Entire Agreement
The Contract constitutes the entire agreement between the Procuring Entity and the Contractor and supersedes all communications, negotiations and agreements (whether written or verbal) of parties with respect thereto made prior to the date of Contract Agreement; except those stated under GCC Sub Clause 6.1(j).
- 2.3 Non waiver
 - (a) Subject to GCC Sub Clause 2.3(b), no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.
 - (b) Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.
- 2.4 Severability
If any provision or condition of the Contract is prohibited or

rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

2.5 Sectional completion

If sectional completion is specified in the **PCC**, references in the GCC to the Works, the Completion Date, and the Intended Completion Date apply to any section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

3. **Communications & Notices**

3.1 Communications between Parties (notice, request or consent required or permitted to be given or made by one party to the other) pursuant to the Contract shall be in writing to the addresses specified in the **PCC**.

3.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

3.3 A Party may change its address for notice hereunder by giving the other Party notice of such change to the address.

4. **Governing Law**

4.1 The Contract shall be governed by and interpreted in accordance with the laws of the People's Republic of Bangladesh.

5. **Governing Language**

5.1 The Contract shall be written in English. All correspondences and documents relating to the Contract may be written in English or *Bangla*. Supporting documents and printed literature that are part of the Contract may be in another language, provided they are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Contract, such translation shall govern.

5.2 The Contractor shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.

6. **Documents Forming the Contract and Priority of Documents**

6.1 The following documents forming the Contract shall be interpreted in the following order of priority:

- (a) the signed Contract Agreement (**Form PW3-9**);
- (b) the Notification of Award (**PW3-8**);
- (c) the completed Tender and the Appendix to the Tender;
- (d) the Particular Conditions of Contract;
- (e) the General Conditions of Contract;
- (f) the Technical Specifications;
- (g) the General Specifications;
- (h) the Drawings;
- (i) the priced BOQ and the Schedules; and
- (j) any other document listed in the **PCC** forming part of the Contract.

7. **Scope of Works**

7.1 The Works to be executed, completed and maintained shall be as specified in the BOQ, the General and Particular Specifications and Drawings.

7.2 Unless otherwise stipulated in the Contract, the Works shall include all such items not specifically mentioned in the Contract but that can be

reasonably inferred from the Contract as being required for completion of the Works as if such items were expressly mentioned in the Contract.

- 8. Assignment** 8.1 Neither the Contractor nor the Procuring Entity shall assign, in whole or in part, its obligations under the Contract.
- 9. Eligibility** 9.1 The Contractor and its Subcontractor(s) shall have the nationality of a country other than that specified in the **PCC**.
- 9.2 All materials, equipment, plant, and supplies used by the Contractor in both permanent and temporary works and services supplied under the Contract shall have their origin in the countries except any specified in the **PCC**.
- 10. Gratuities / Agency fees** 10.1 No fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the Tender or in the Contract, have been given or received in connection with the procurement process or in the Contract execution.
- 11. Confidential Details** 11.1 The Contractor's and the Procuring Entity's personnel shall disclose all such confidential and other information as may be reasonably required in order to verify the Contractor's compliance with the Contract and allow its proper implementation.
- 11.2 Each of them shall treat the details of the Contract as private and confidential, except to the extent necessary to carry out their respective obligations under the Contract or to comply with applicable Laws. Each of them shall not publish or disclose any particulars of the Works prepared by the other Party without the previous agreement of the other Party. However, the Contractor shall be permitted to disclose any publicly available information, or information otherwise required to establish his qualifications to compete for other projects.
- 12. Joint Venture (JV)** 12.1 If the Contractor is a JV ,
- (a) each partner of the JV shall be jointly and severally liable for all liabilities and ethical or legal obligations to the Procuring Entity for performance of the Contract;
 - (b) the JV partners shall nominate the **Leading Partner as REPRESENTATIVE** being entrusted with the Contract administration and management at Site who shall have the authority to conduct all business including the receipt of payments for and on behalf of all partners of the JV;
 - (c) If there is a dispute that results in legal action being taken in court then action will be taken against all partners of the JV, if they are available and, if only one partner is available, then that partner alone shall answer on behalf of all partners and, if the complaint lodged is proven, the penalty shall be applicable on that partner alone as whatever penalty all the partners would have received; provided that if the other partners of the JV subsequently become available before the legal action has been completed, the Procuring Entity shall have the right to take action against those other partners of that JV as well.
 - (d) the composition or constitution and legal status of the JV shall not be altered without the prior approval of the Procuring

Entity;

- (e) alteration of partners, **except the Leading partner**, shall only be allowed if any of them is found to be incompetent or has any serious difficulties which may impact the overall implementation of the Works, whereby the incoming partner shall require to possess qualifications higher than that of the outgoing partner;
- (f) "if any of the partners of JV has been debarred from participating in any procurement activity due to corrupt, fraudulent, collusive or coercive practices and while in case, the Leading partner is found incompetent or has been debarred due to the same reasons stated herein the Contract shall be terminated pursuant to GCC Sub Clause 87.1(b)."

- 13. Possession of the Site**
 - 13.1 The Procuring Entity shall give possession of the Site or part(s) of the Site, to the Contractor on the date(s) stated in the **PCC**. If possession of a part of the Site is not given by the date stated in the **PCC**, the Procuring Entity will be deemed to have delayed the start of the relevant activities, and this will be a Compensation Event as stated under GCC Sub Clause 67.1(a).
- 14. Access to the Site**
 - 14.1 The Contractor shall allow the Project Manager and any person authorised by the Project Manager access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.
- 15. Procuring Entity's Responsibilities**
 - 15.1 The Procuring Entity shall pay the Contractor, in consideration of the satisfactory progress of execution and completion of the Works and physical services, and the remedying of defects therein, 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 Agreement.
 - 15.2 The Procuring Entity shall make its best effort to guide and assist the Contractor in obtaining, if required, any permit, licence, and approvals from local public authorities for the purpose of execution of the Works and physical services under the Contract.
- 16. Approval of the Contractor's Temporary Works**
 - 16.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, who is to approve them, if they comply with the Specifications and Drawings.
 - 16.2 The Contractor shall be responsible for design of Temporary Works.
 - 16.3 The Project Manager's approval shall not alter the Contractor's responsibility for design of the Temporary Works.
 - 16.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required.
- 17. Contractor's Responsibilities**
 - 17.1 The Contractor shall execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract Agreement.
- 18. Taxes and Duties**
 - 18.1 The Contractor shall be entirely responsible for all applicable taxes, custom duties, VAT, and other levies imposed or incurred inside and outside Bangladesh.
- 19. Contractor's**
 - 19.1 The Contractor shall employ the key personnel named in the Schedule of Key Personnel, as referred to in the **PCC**, to carry out

Personnel	<p>the functions stated in the Schedule or other personnel approved by the Project Manager.</p> <p>19.2 The Project Manager will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are equal to or higher than those of the personnel named in the Schedule.</p> <p>19.3 If the Project Manager asks the Contractor to remove a particular person who is a member of the Contractor's staff or work force from the Site, he or she shall state the reasons, and the Contractor shall ensure that the person leaves the Site within three (3) days and has no further connection with the work in the Contract.</p>
20. Subcontracting	<p>20.1 Subcontracting the whole of the Works by the Contractor shall not be permissible. The Contractor shall be responsible for the acts or defaults of any Subcontractor, his or her agents or employees, as if they were the acts or defaults of the Contractor.</p> <p>20.2 The prior consent, in writing, of the Project Manager shall however be obtained for other proposed Subcontractor(s).</p> <p>20.3 Nominated Subcontractor named in the Contract shall be entitled to execute the specific components of the Works stated in the PCC.</p> <p>20.4 Subcontractors shall comply with the provisions of GCC Clause 38.</p>
21. Other Contractors	<p>21.1 The Contractor shall cooperate and share the Site with other Contractors, public authorities, utilities, the Project Manager and the Procuring Entity between the dates given in the Schedule of other Contractors. The Contractor shall also provide facilities and services for them as described in the Schedule. The Procuring Entity may modify the Schedule of other Contractors, and shall notify the Contractor of any such modification.</p>
22. Project Manager's Decisions	<p>22.1 Except where otherwise specifically stated in the PCC, the Project Manager will decide Contractual matters between the Procuring Entity and the Contractor in its role as representative of the Procuring Entity.</p>
23. Delegation	<p>23.1 The Project Manager may delegate any of his duties and responsibilities to his representative except to the Adjudicator, after notifying the Contractor, and may cancel any delegation, without retroactivity, after notifying the Contractor.</p> <p>23.2 Any communications to the Contractor in accordance with such delegation shall have the same effect as if it was given by the Project Manager.</p>
24. Instructions	<p>24.1 The Contractor shall carry out all instructions of the Project Manager that comply with the applicable law.</p>
25. Queries About the Contract Conditions	<p>25.1 The Project Manager, on behalf of the Procuring Entity, will clarify queries on the Conditions of Contract.</p>
26. Safety, Security and Protection of the Environment	<p>26.1 The Contractor shall throughout the execution and completion of the Works and the remedying of any defects therein:</p> <p>(a) take all reasonable steps to safeguard the health and safety of all workers working on the Site and other persons entitled</p>

to be on it, and to keep the Site in an orderly state;

- (b) provide and maintain at the Contractor's own cost all lights, guards, fencing, warning signs and watching for the protection of the Works or for the safety on-site; and
- (c) take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of the Contractor's methods of operation.

- 27. Working Hours** 27.1 The Contractor shall not perform any work on the Site on the weekly holidays, or during the night or outside the normal working hours, or on any religious or public holiday, without the prior written approval of the Project Manager.
- 28. Welfare of Labourers** 28.1 The Contractor shall comply with all the relevant labour Laws applicable to the Contractor's personnel relating to their employment, health, safety, welfare, immigration and shall allow them all their legal rights.
- 28.2 The Contractor, in particular, shall provide proper accommodation to his or her labourers and arrange proper water supply, conservancy and sanitation arrangements at the site for all necessary hygienic requirements and for the prevention of epidemics in accordance with relevant regulations, rules and orders of the government.
- 28.3 The Contractor, further in particular, shall pay reasonable wages to his or her labourers, and pay them in time. In the event of delay in payment the Procuring Entity may effect payments to the labourers and recover the cost from the Contractor.
- 29. Child Labour** 29.1 The Contractor shall not employ any child to perform any work that is economically exploitative, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development in compliance with the applicable labor laws and other relevant treaties ratified by the government.
- 30. Discoveries** 30.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Procuring Entity. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager's instructions for dealing with them.
- 31. Procuring Entity's and Contractor's Risks** 31.1 The Procuring Entity carries the risks that the Contract states are Procuring Entity's risks and the Contractor carries the risks that the Contract states are Contractor's risks.
- 32. Procuring Entity's Risks** 32.1 From the Start Date until the Defects Correction Certificate has been issued, the following are Procuring Entity's risks:
- (a) the risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to
 - i. use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or

- ii. negligence, breach of statutory duty, or interference with any legal right by the Procuring Entity or by any person employed by or Contracted to him except the Contractor.
 - (b) the risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Procuring Entity or in the Procuring Entity's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.
 - 32.2 From the Completion Date until the Defects Correction Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is Procuring Entity's risk, except loss or damage due to:
 - (a) a Defect which existed on the Completion Date;
 - (b) an event occurring before the Completion Date, which was not itself Procuring Entity's risk; or
 - (c) the activities of the Contractor on the Site after the Completion Date.
- 33. Contractor's Risks**
- 33.1 From the Start Date until the Defects Correction Certificate has been issued the risks of personal injury, death, and loss of or damage to property including without limitation, the Works, Plant, Materials, and Equipment, which are not Procuring Entity's risks are Contractor's risks.
- 34. Copyright**
- 34.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Procuring Entity by the Contractor herein shall remain vested in the Contractor, or, if they are furnished to the Procuring Entity directly or through the Contractor by any third party, including Suppliers of materials, the copyright in such materials shall remain vested in such third party.
- 34.2 The Contractor shall not, except for the purposes of performing the obligations under the Contract, without the written permission of the Procuring Entity disclose or make use of any specification, plan, design and drawing, pattern, sample or information furnished by or on behalf of the Procuring Entity.
- 35. Limitation of Liability**
- 35.1 Except in cases of criminal negligence or wilful misconduct:
- (a) the Contractor shall not be liable to the Procuring Entity, whether in Contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Contractor to pay liquidated damages to the Procuring Entity; and
 - (b) the aggregate liability of the Contractor to the Procuring Entity, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective Works, or to any obligation of the Contractor to indemnify the Procuring Entity with respect to patent infringement.

36. Insurance

- 36.1 The Contractor shall provide, in the joint names of the Procuring Entity and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts specified in the **PCC** for the following events which are due to the Contractor's risks:
- (a) loss of or damage to the Works, Plant, and Materials;
 - (b) loss of or damage to Equipment;
 - (c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and
 - (d) personal injury or death.
- 36.2 The Contractor shall deliver policies and certificates of insurance to the Project Manager, for the Project Manager's approval, before the Start Date. All such insurances shall provide for compensation to be payable in the types and proportions required to rectify the loss or damage incurred.
- 36.3 If the Contractor does not provide any of the policies and certificates required, the Procuring Entity may effect the insurance which the Contractor should have provided and recover the premiums the Procuring Entity has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.
- 36.4 Alterations to the terms of insurance shall not be made without the approval of the Project Manager.
- 36.5 Both parties shall comply with conditions of the insurance policies.

37. Management and Progress Meetings

- 37.1 Either the Project Manager or the Contractor may require the other to attend a management and progress meeting. The business of such meeting shall be to review the progress and plans for remaining work and to deal with matters raised in accordance with the early warning procedure.
- 37.2 The Project Manager shall record the business of the meetings and provide copies of the record to those attending the meeting and to the Procuring Entity. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management and progress meeting or after the meeting, and stated in writing to all concerned.

38. Corrupt, Fraudulent, Collusive, Coercive(and Obstructive in case of

- 38.1 The Government and the Development Partner requires that the Procuring Entity as well as the Contractor (including sub-contractors, agents, personnel, consultants and service providers), shall observe the highest standard of ethics during the implementation of procurement proceedings and the execution of contracts under public funds.

Development
Partner)
Practices

- 38.2 The Contractor (including sub-contractors, agents, personnel, consultants and service providers) shall permit the Government and/or the Development Partner to inspect the Contractor's accounts and records and other documents relating to the submission of Tender and contract performance, and to have them audited by auditors appointed by the Government and/or the Development Partner, if so required.
- 38.3 For the purposes of GCC Sub Clause 38.4, the terms set forth below as follows:
- (a) "corrupt practice" means offering, giving or promising to give, receiving, or soliciting either directly or indirectly, to any officer or employee of a Procuring Entity or other public or private authority or individual, a gratuity in any form; employment or any other thing or service of value as an inducement with respect to an act or decision or method followed by a Procuring Entity in connection with a Procurement proceeding or Contract execution;
 - (b) "fraudulent practice" means the misrepresentation or omission of facts in order to influence a decision to be taken in a Procurement proceeding or Contract execution;
 - (c) "collusive practice" means a scheme or arrangement between two (2) or more Persons, with or without the knowledge of the Procuring Entity, that is designed to arbitrarily reduce the number of Tenders submitted or fix Tender prices at artificial, non-competitive levels, thereby denying a Procuring Entity the benefits of competitive price arising from genuine and open competition;
 - (d) "coercive practice" means harming or threatening to harm, directly or indirectly, Persons or their property to influence a decision to be taken in the Procurement proceeding or the execution of the Contract, and this will include creating obstructions in the normal submission process used for Tenders; or
 - (e) "Obstructive practice" (applicable in case of Development Partner) means deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede an investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and /or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation.
- 38.4 Should any corrupt, fraudulent, collusive, coercive practice (or obstructive practice in case of Development Partner) of any kind, in competing for or in executing the Contract, is determined by the Procuring Entity, then the Procuring Entity may, upon giving 28 days' notice to the Contractor, terminate the Contractor's employment under the Contract and the provisions of Clause 87 shall apply as if such expulsion had been made under sub-clause 87.1 (Termination for Default).

- 38.5 If corrupt, fraudulent, collusive or coercive (or obstructive in case of Development Partners) practices of any kind determined by the Procuring Entity or the Development Partner against the Contractor alleged to have carried out such practices, the Procuring Entity and/or the Development Partner shall:
- (a) exclude the Contractor from further participation in the particular Procurement proceeding; or
 - (b) declare, at its discretion, the Contractor to be ineligible to participate in further Procurement proceedings, either indefinitely or for a specific period of time; or
 - (c) PE can debar the Contractor for a period of 1 (one) to 2 (two) years for the procurement of all procuring entities due to fundamental breach of contract.
- 38.6 The Contractor shall be aware of the provisions on corruption, fraudulence, collusion and coercion in Section 64 of the Public Procurement Act, 2006 and Rule 127 of the Public Procurement Rules, 2008 and in case of Development Partner financed contract, the Procurement Guidelines of the Development Partner.

B. Time Control

- 39. Commencement of Works**
- 39.1 Except otherwise specified in the **PCC**, the Commencement Date shall be the date at which the following precedent conditions have all been fulfilled and the Project Manager's instruction recording the agreement of both Parties on such fulfilment and instructing to commence the Works is received by the Contractor:
- (a) signing of the Contract Agreement by both parties upon approval of the by relevant authorities;
 - (b) possession of the Site given to the Contractor as required for the commencement of the Works; and
 - (c) receipt by the Contractor of the Advance Payment under GCC Clause 73 provided that the corresponding Bank Guarantee has been delivered by the Contractor, if any.
- 39.2 The Contractor shall commence the execution of the Works as soon as is reasonably practicable by the **Start Date** as specified in the GCC Sub Clause **1.1(oo)** after the Commencement Date, and shall then proceed with the Works with due expedition and without delay.
- 40. Completion of Works**
- 40.1 The Contractor shall carry out the Works in accordance with the Programme of Works submitted by the Contractor and as updated with the approval of the Project Manager as stated under GCC Clause 41 to complete them in all respects by the Intended Completion Date, as specified in the **PCC**.
- 41. Programme of Works**
- 41.1 Within the time stated in the **PCC**, the Contractor shall submit to the Project Manager for approval a Programme of Works showing the general methods, arrangements, order, and timing for all the activities in the Works. The programme may be in the form of an Implementation Schedule prepared in any software or

other form acceptable to the Project Manager.

41.2 The Contractor shall submit to the Project Manager for approval of an updated Programme at intervals no longer than the period stated in the **PCC**. An update of the Programme shall be a Programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.

41.3 If the Contractor does not submit an updated Programme of Works at the intervals as stated under GCC Sub Clause 41.2, the Project Manager may withhold an amount as stated in the **PCC** from the next payment certificate and continue to withhold this amount until the next due payment after the date on which the overdue Programme of Works has been submitted.

41.4 The Project Manager's approval of the Programme of Works shall not alter the Contractor's obligations. The Contractor may revise the Programme and submit it to the Project Manager again at any time for approval. A revised Programme shall show the effect of Variations and Compensation Events.

42. Pro Rata Progress

42.1 The Contractor shall maintain Pro Rata progress of the Works. Progress to be achieved shall be pursuant to GCC Clause 41 and shall be determined in terms of the value of the works done.

43. Early Warning

43.1 If at any time during performance of the Contract, the Contractor or its Subcontractors should encounter events, circumstances, conditions that may adversely affect the quality of the work, increase the original Contract Price or delay the execution of the Works, the Contractor shall promptly notify the Project Manager in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Contractor's notice, the Project Manager shall evaluate the situation, and the Contractor shall cooperate with the Project Manager in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced.

43.2 The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the original Contract Price and Completion Date. The Contractor shall provide the estimate and the Project Manager shall further proceed as soon as reasonably possible.

44. Extension of Intended Completion Date

44.1 The Contractor shall be entitled to an extension of the Intended Completion Date, if and to the extent that completion of the Works or any part thereof is or will be delayed by Compensation Events or a Variation or Extra Work Order.

44.2 If the Contractor considers itself to be entitled to an extension of the execution period as stated under GCC Sub Clause 44.1, the Contractor shall give notice, not later than twenty-eight (28) days after the Contractor became aware or should have become aware of the event or circumstance, to the Project Manager.

44.3 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within twenty-one (21) days of the Contractor asking the Project Manager for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early

warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the extension of Intended Completion Date.

44.4 The Project Manager may extend the Intended Completion Date by twenty (20) percent of the original Contract time as stated under GCC Sub Clause 44.1, if a Compensation Event occurs or **Variation Order or extra work Order issued**, which does not make it possible to complete the execution of works without incurring additional cost.

44.5 In the case an extension of the Intended Completion Date required under GCC Sub Clause 44.3 is or will be more than twenty (20) percent of the original Contract time, approval of the Head of the Procuring Entity or an officer authorized by him or her for the same shall be required to be obtained.

44.6 Except in case of Force Majeure, as provided under GCC Clause 83, a delay by the Contractor in the execution Works shall render the Contractor liable to the imposition of Liquidated Damages pursuant to GCC Clause 71, unless an extension of the Intended Completion Date is agreed upon, pursuant to GCC Clause 44.3.

45. Delays Caused by Authorities

45.1 If the following conditions apply, namely:
(a) the Contractor has diligently followed the procedures laid down by the relevant legally constituted public authorities,
(b) these public authorities delay or disrupt the Contractor's work, and
(c) the delay or disruption was unforeseeable;
then this delay or disruption will be considered as a cause of delay under GCC Sub Clause 44.1.

45.2 The Project Manager shall notify the Contractor accordingly keeping the Procuring Entity posted.

46. Acceleration

46.1 When the Procuring Entity wants the Contractor to finish the Works before the Intended Completion Date, the Project Manager will obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Procuring Entity accepts these proposals, the Intended Completion Date will be advanced accordingly and confirmed by both the Procuring Entity and the Contractor.

46.2 If the Procuring Entity accepts the Contractor's priced proposals for acceleration, they will be incorporated in the Contract Price and treated as a **Variation** under GCC Clause 61.

47. Delays Ordered by the Project Manager

47.1 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.

48. Suspension of Work

48.1 The Project Manager may at any time instruct the Contractor to suspend progress of part or all of the Works. During such suspension, the Contractor shall protect, store and secure such part or the Works against any deterioration, loss or damage.

- 49. Consequences of Suspension**
- 49.1 If the Contractor suffers delay and/or incurs Cost from complying with the Project Manager's instructions under GCC Clause 48 and/or from resuming the work, the Contractor shall give notice to the Project Manager and shall be entitled subject to GCC Clause 91 to:
- (a) an extension of time for any such delay, if Completion is or will be delayed and
 - (b) payment of any such cost, which shall be included in the Contract Price.
- 49.2 After receiving this notice, the Project Manager shall proceed to agree or determine these matters.
- 49.3 The Contractor shall not be entitled to any extension of time for, or to any payment of the cost incurred in, making good the consequences of the Contractor's faulty design, workmanship or materials, or of the Contractor's failure to protect, store or secure in accordance with GCC Clause 48.

C. Quality Control

- 50. Execution of Works**
- 50.1 The Contractor shall construct, install and carry out the Works and physical services in accordance with the Specifications and Drawings as scheduled in GCC Clause 6.
- 51. Examination of Works before covering up**
- 51.1 All works under the Contract shall at all times be open to examination, inspection, measurements, testing and supervision of the Project Manager, and the Contractor shall ensure presence of its representatives at such actions provided proper advance notice is given by the Project Manager.
- 51.2 No part of the Works shall be covered up or put out of sight without the approval of the Project Manager. The Contractor shall give notice in writing to the Project Manager whenever any such part of the Works is ready for examination and, the Project Manager shall attend to such examination without unreasonable delay.
- 52. Identifying Defects**
- 52.1 The Project Manager shall check the works executed by the Contractor and notify the Contractor of any Defects found. Such checking shall not relieve the Contractor from his or her obligations. The Project Manager may also instruct the Contractor to search for a Defect and to uncover and test any work that the Project Manager considers may have a Defect.
- 53. Testing**
- 53.1 If the Project Manager instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect, the test shall be a Compensation Event pursuant to GCC Sub Clause 67.
- 54. Rejection of Works**
- 54.1 If, as a result of an examination, inspection, measurement or testing, of Works it is found to be defective or otherwise not in accordance with the Contract, the Project Manager may reject the Works by giving notice to the Contractor, with reasons. The Contractor shall then promptly make good the defect and ensure

that the rejected Works subsequently complies with the Contract.

- 55. Remedial Work**
- 55.1 Notwithstanding any test or certification, the Project Manager may instruct the Contractor to:
- (a) remove from the Site and replace any Plant or Materials which is not in accordance with the Contract,
 - (b) remove and re-execute any other work which is not in accordance with the Contract, and
 - (c) execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseeable event or otherwise.
- 55.2 The Contractor shall comply with the instruction issued under GCC Sub Clause 55.1 within a reasonable time, which shall be specified in the instruction, or immediately if urgency is specified under GCC Sub Clause 55.1(c).
- 55.3 If the Contractor fails to comply with the instruction issued under GCC Sub Clause 55.2, the Procuring Entity shall be entitled to employ and pay other persons to carry out the work. Except to the extent that the Contractor would have been entitled to payment for the work, the Contractor shall be liable to pay all such costs arising from this failure.
- 56. Correction of Defects**
- 56.1 The Project Manager shall give notice to the Contractor, with a copy to the Procuring Entity and others concerned, of any Defects before the end of the Defects Liability Period, which begins at Completion Date, and is defined in the **PCC**. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.
- 56.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Project Manager's notice.
- 57. Uncorrected Defects**
- 57.1 If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager shall assess the cost of having the Defect corrected by it, and the Contractor shall remain liable to pay the expenditures incurred on account of correction of such Defect.

D. Cost Control

- 58. Contract Price**
- 58.1 The Contract Price shall be as specified in the Contract Agreement subject to any additions and adjustments thereto, or deductions therefrom, as may be made pursuant to Contract.
- 59. Bill of Quantities**
- 59.1 The Bill of Quantities (BOQ) shall contain priced items for the construction, installation, testing, and commissioning work to be done by the Contractor.
- 59.2 The BOQ is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the BOQ for each item.

59.3 Items of works quantified in the BOQ for which no rates have been quoted shall be deemed covered by the amounts at rates of other items in the Contract and, shall under no circumstances be paid for, by the Procuring Entity.

60. Changes in the Quantities and Unit Rate

60.1 If the final quantity of the work done for any particular item in the BOQ increases by more than twenty-five (25) percent and, such increase in quantity of that particular item alone concurrently causes the original Contract Price to exceed by more than one (1) percent, the Project Manager shall adjust the unit rate of the item to allow for the change.

60.2 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the BOQ.

61. Issue Variation or Extra Work Order

61.1 The Project Manager may issue a **Variation Order** to the Contractor to cover increase or decrease in quantities, including the introduction of new work items (non-Tendered items) that are either due to change of plans, design or alignment to suit actual field conditions, within the general scope and physical boundaries of the contract.

61.2 The Project Manager may issue an **Extra Work Order** to cover the introduction of such new works necessary for the completion, improvement or protection of the original works which were not included in the original contract, on the grounds where there are subsurface or latent physical conditions at the site differing materially from those indicated in the contract, or where there are duly unknown physical conditions at the site of an unusual nature differing materially from those usually encountered and generally recognized as inherent in the work or character provided for in the Contract.

61.3 The Project Manager deems it necessary that a Variation or Extra Work Order should be issued, he or she shall prepare the proposed order, the necessary plans, his or her computations as to the quantities of the additional Works involved per item indicating the specific locations where such Works are needed, the date of his or her inspections and investigations thereon, and the log book thereof, and a detailed estimate of the unit cost of such items of work as stated under GCC Clause 62, together with his or her justifications for the need of such Variation or Extra Work Order, and shall submit the same to the Approving Authority. Any Amend to the contract that happens within the approved BOQ items and doesn't change the contract price shall be approved by the HOPE or delegated officer.

61.4 The Head of the Procuring Entity may, in exceptions to the GCC Sub Clause 61.3 and subject to the availability of funds, in the event of extreme emergency and when time is of the essence, authorize the immediate start of work under any Variation or Extra Work Order; provided that the cumulative increase in the value of Works not yet duly approved exceeded ten (10) percent of the adjusted original Contract Price.

61.5 Increase or decrease in the quantities of any item of work included in the BOQ for the reasons other than those stated under GCC Sub Clause 61.1 and 61.2, in particular for field level actual measurements under this contract (admeasurements), not

necessarily however, shall constitute a **Variation**.

- 61.6 All Variations and Extra work orders under the Contract shall be included in the updated Programme of Works produced by the Contractor.
- 62. Costing of Variations or Extra Orders**
- 62.1 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Project Manager shall assess the quotation, which shall be given within seven (7) working days of the request or within any longer period stated by the Project Manager and before the Variation is ordered.
- 62.2 If the item of work in the Variation corresponds to an item of work in the BOQ and if, in the opinion of the Project Manager, the increased quantity and cost of the works of that particular item does not concurrently cause to exceed the limit stated in GCC Sub Clause 60.1, the same unit rate in the BOQ shall be used to calculate the cost of the Variation. If the item of work in the Variation does not correspond to an item in the BOQ, the unit rates for the new items of works shall be determined based on (i) the direct unit costs used in the original Contract for other items (e.g. unit cost of cement, steel bar, labour rate, equipment rental, etc) as indicated in the Contractor's price breakdown of the cost estimate, if available or (ii) fixed prices acceptable to both, the Procuring Entity and the Contractor, based on market prices. The direct cost of the new work items based on (i) or (ii) stated herein shall then be combined with the mark-up factor (i.e. profit, overhead and VAT) used by the Contractor in its Tender to determine the unit rate of the new items of work.
- 62.3 If the Contractor's quotation is found to be unreasonable, the Project Manager may order the Variation and make a change to the Contract Price, which shall be based on the Project Manager's own forecast of the effects of the Variation on the Contractor's costs.
- 62.4 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning under GCC Sub Clause 43.1.
- 62.5 The time for processing of a Variation and an Extra Work Order from its preparation to approval shall not exceed thirty (30) working days.
- 63. Cash Flow Forecasts**
- 63.1 When the Programme of Works is updated under GCC Sub Clause 41.2, the Contractor shall provide the Project Manager with an updated cash flow forecast.
- 64. Payment Certificates**
- 64.1 The basis for payment certificates shall be BOQ used to determine the Contract Price.
- 64.2 The Contractor shall submit to the Project Manager monthly statements of the estimated value of the works executed less the cumulative amount certified previously.
- 64.3 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.
- 64.4 The value of work executed shall be determined by the Project Manager.

- 64.5 The value of work executed may also include the valuation of Variations or Extra Work Orders, Certified Dayworks and Compensation Events.
- 64.6 The Project Manager may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.
- 65. Payments to the Contractor**
- 65.1 Payments shall be adjusted for deductions for advance payments and retention. The Procuring Entity shall pay the Contractor the amounts certified by the Project Manager within twenty-eight (28) days of the date of each certificate after due adjustments for deductions for advance payments, retention and any other additions or deductions which may have become due under the Contract or otherwise, including those under GCC Clause 91.
- 65.2 Payments for Works under Variation Orders or Extra Work Orders satisfactorily accomplished pursuant to GCC Sub Clause 61 may be made only after approval of the same by the Approving Authority or next higher, as appropriate.
- 65.3 Payments due to the Contractor in each certificate shall be made into the Bank Account, in any scheduled Bank of Bangladesh, of the legal title of the Contract specified in the **PCC**, nominated by the Contractor in the currency specified in the Contract.
- 66. Delayed Payment**
- 66.1 If the Procuring Entity makes a late payment, the Contractor shall be paid interest on the late payment in the next payment at the rate as specified in the **PCC**. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made.
- 66.2 If an amount certified is increased in a subsequent certificate as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.
- 67. Compensation Events**
- 67.1 The following shall be Compensation Events:
- (a) The Procuring Entity does not give access to or possession of the Site or part of the Site by the Site Possession Date stated in the GCC Sub Clause 13.1;
 - (b) The Procuring Entity modifies the Schedule of other Contractors in a way that affects the works of the Contractor under the Contract;
 - (c) The Project Manager orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time;
 - (d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects;
 - (e) The Project Manager unreasonably does not approve a subcontract to be let, if applicable;
 - (f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of

the Notification of Award from the information issued to Tenderers (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site; Other Contractors, public authorities, utilities, or the Procuring Entity do not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor;

- (g) The advance payment is delayed;
- (h) The effects on the Contractor of any of the Procuring Entity's Risks;
- (i) The Project Manager unreasonably delays issuing a Completion Certificate;
- (j) A situation of Force Majeure has occurred, as defined in GCC Clause 83; and
- (k) Other Compensation Events described in the Contract or determined by the Project Manager in the **PCC** shall apply.

67.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended, only on justifiably acceptable grounds duly recorded.

67.3 As soon as the Contractor has provided information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost, the Project Manager shall assess it, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager's own forecast. The Project Manager will assume that the Contractor will react competently and promptly to the event.

67.4 The Contractor shall not be entitled to compensation to the extent that the Procuring Entity's interests are adversely affected by the Contractor not having given early warning or not having cooperated with the Project Manager.

68. Adjustments for Changes in Legislation

68.1 Unless otherwise specified in the Contract, if between the date twenty-eight (28) days before the submission of Tenders for the Contract and the date of the last Completion Certificate, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in Bangladesh (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Completion Date and/or the Contract Price, then such Completion Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Contractor has thereby been affected in the performance of any of its obligations under the Contract.

68.2 The Project Manager shall adjust the Contract Price on the basis of the change in the amount of taxes, duties, and other levies payable by the Contractor, provided such changes have not already been accounted for in the price adjustment as defined in

GCC Clause 69 and/or reflected in the Contract Price.

69. Price Adjustment

69.1 Prices shall be adjusted for fluctuations in the cost of inputs only if provided for in the **PCC**. If so provided, the amounts as certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amount. The formulae indicated below applies:

$$P = A + B (I_m/I_o)$$

where:

P is the adjustment factor

A and **B** are Coefficients specified in the **PCC**, representing the nonadjustable and adjustable portions, respectively, of the Contract; and

I_m is the Index during the month the work has been executed and

I_o is the Index prevailing twenty-eight (28) days prior to the deadline for submission of Tender.

The Indexes to be used is as published by the Bangladesh Bureau of Statistics (BBS) on a monthly basis. In case not available, then other countries or authorities of the sources mentioned in **Appendix to the Tender** may be used.

70. Retention Money

70.1 The Procuring Entity may retain from each progressive payment due to the Contractor at the percentage specified in the **PCC** until completion of the whole of the Works under the Contract.

70.2 On completion of the whole of the Works, the first half of the total amount retained under GCC Sub Clause 70.1 shall be returned to the Contractor and the remaining second half after the Defects Liability Period has passed and the Project Manager has certified in the form of **Defects Corrections Certificate**.

70.3 On completion of the whole of the Works, the Contractor may substitute an irrevocable unconditional Bank Guarantee from any scheduled Bank of Bangladesh, in the format as specified (**Form PW3-12**), without any alteration, acceptable to the Procuring Entity for the second half of the retention money as stated under GCC Sub Clause 70.2.

71. Liquidated Damages

71.1 Except as provided under GCC Sub Clause 83, if the Contractor fails to complete the Works and physical services within the Intended Completion Date or extended Intended Completion Date, the Procuring Entity shall, as Liquidated Damages, deduct from the Contract Price, a sum at the percent-rate per day of delay as specified in the **PCC**, of the contract value of the uncompleted works or part thereof completed after the Intended Completion Date or extended Intended Completion Date, as applicable. The total amount of Liquidated Damages or Delay Damages shall not exceed the amount specified in the **PCC**. The Procuring Entity may deduct Liquidated Damages from payments due to the Contractor. Payment of Liquidated damages shall not affect the Contractor's liabilities.

71.2 If the Intended Completion Date is extended after Liquidated Damages have been paid, the Project Manager shall correct any

overpayment of liquidated damages by the Contractor by adjusting the next payment certificate.

72. Bonus

72.1 The Contractor shall be paid a Bonus calculated at the percent-rate per day **if stated in the PCC** for each day (less any days for which the Contractor is paid for acceleration) that the Completion of the whole of the Works is earlier than the Intended Completion Date. The Project Manager shall require certifying that the Works are complete, although they may not have fallen due to being complete as per approved updated Programme of Works.

73. Advance Payment

73.1 The Procuring Entity shall make advance payment, if so specified in the **PCC**, to the Contractor in the amounts and by the dates specified in the **PCC** against an irrevocable unconditional Bank Guarantee issued by any scheduled Bank of Bangladesh in the format as specified (**Form PW3-11**), without alteration, and acceptable to the Procuring Entity of an amount equal to the advance payment. The Guarantee shall remain effective until the advance payment has been amortized, but the amount of the Guarantee shall be progressively reduced by the amounts amortized by the Contractor. Interest will not be charged on the advance payment.

73.2 The Contractor shall use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used for such specific purposes by supplying copies of invoices or other documents to the Project Manager.

73.3 The advance payment shall be amortized by deducting at proportionate rate from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works as specified in the **PCC** . No account shall be taken of the advance payment or its amortization in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages.

73.4 If the amortization of advance payment has not been completed by twenty-eight (28) days prior to the expiry date of the Guarantee stated under GCC Sub Clause 73.1, the Contractor shall correspondingly extend the validity of the Guarantee for a period so long the advance payment is fully amortized. The Bank Guarantee for advance payment shall be released when the same has been fully amortized.

74. Performance Security

74.1 The Procuring Entity shall notify the Contractor of any claim made against the Bank issuing the Performance Security.

74.2 The Procuring Entity may claim against the security if any of the following events occurs for fourteen (14) days or more.

(a) The Contractor is in breach of the Contract and the Procuring Entity has duly notified him or her ; and

(b) The Contractor has not paid an amount due to the Procuring Entity and the Procuring Entity has duly notified him or her.

74.3 In the event as stated under GCC Sub Clause 74.2, the Contractor is liable to pay compensation under the Contract amounting to the full value of the security or more, the Procuring

Entity may call the full amount of the security.

74.4 The Performance Security furnished at the time of signing of the Contract Agreement shall be substituted, after the issuance of certificate of Completion of works by the Project Manager, by a new Security covering fifty (50) percent amount of the Performance Security to cover the Defects Liability Period.

74.5 If there is no reason to call the security, the security shall be discharged by the Procuring Entity and returned to the Contractor after the Defects Liability period has passed and the Project Manager has certified in the form of Defects Corrections Certificates and the Procuring Entity shall not make any claim under the security, except for amounts to which the Procuring Entity is entitled under this Contract. In the event this Contract is significantly below the updated official estimated cost or unbalanced as a result of front loading, the Procuring Entity shall call the full amount of the security in the circumstances stated under GCC Sub Clause 74.3.

75. Provisional Sums

75.1 Provisional Sums shall only be used, in whole or in part, in accordance with the Project Manager's instructions.

75.2 Plants, Materials or Services to be purchased by the Contractor under the provisions of GCC Sub Clause 75.1 from Nominated Subcontractor(s) or for meeting the other expenditures under the Contract, and for which there shall be included in the Contract price, the actual amounts paid or due to be paid by the Contractor, and a sum for profit, overhead and VAT, as applicable, calculated as a percentage of these actual amounts by applying the relevant percentage rate as specified in the **PCC**.

76. Dayworks

76.1 If applicable, the Dayworks rates in the Contractor's Tender shall be used for small additional amounts of work only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

76.2 All works to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the Project Manager. Each completed form shall be certified and signed by the Project Manager within seven (7) days of the works being done.

76.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

77. Cost of Repairs to Loss or Damages

77.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Liability Period shall be remedied by the Contractor at the Contractor's own cost, if the loss or damage arises from the Contractor's acts or omissions.

E. Completion of the Contract

78. Completion

78.1 The Contractor shall apply by notice to the Project Manager for issuing a Completion Certificate of the Works, and the Project Manager shall do so upon deciding that the work is completed.

- 79. Taking Over** 79.1 The Procuring Entity shall take over the Site and the Works within seven (7) days of the Project Manager's issuing a certificate of Completion.
- 80. Amendment to Contract** 80.1 The amendment to Contract shall generally include extension of time to the Intended Completion Date, increase or decrease in original Contract Price and any other changes acceptable under the conditions of the Contract.
- 80.2 The Procuring Entity shall amend the Contract, incorporating the changes approved, in accordance with the Delegation of Financial Power or Sub-delegation thereof and, introduced to the original terms and conditions of the Contract
- 81. Final Account** 81.1 The Contractor shall submit with a detailed account of the total amount that the Contractor considers payable under the Contract to the Project Manager before the end of the **Defects Liability Period**.
- 81.2 The Project Manager shall certify the **Final Payment** within fifty six (56) days of receiving the Contractor's account if the payable amount claimed by the Contractor is correct and the corresponding works are completed.
- 81.3 If it is not, the Project Manager shall issue within fifty six (56) days a **Defects Liability Schedule** that states the scope of the corrections or additions that are necessary.
- 81.4 If the **Final Account of Works** submitted under GCC Sub Clause 81.1 is unsatisfactory even after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.
- 82. As-built Drawings and Manuals** 82.1 If "As Built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the **PCC**.
- 82.2 If the Contractor does not supply the Drawings and/or Manuals by the dates specified in GCC Sub Clause 82.1, or they do not receive the Project Manager's approval, the Project Manager shall withhold a nominal amount specified in the **PCC** from payments due to the Contractor.
- 83. Force Majeure** 83.1 Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind stated below;
- (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies;
 - (b) rebellion, terrorism, sabotage by persons other than the Contractor's personnel, revolution, insurrection, military or usurped power, or civil war ;
 - (c) riot, commotion, disorder, strike or lockout by persons other than the Contractor's personnel ;
 - (d) munitions of war, explosive materials, ionising radiation or contamination by radio-activity, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity ; and
 - (e) natural catastrophes such as fires, floods, epidemics,

quarantine restrictions, freight embargoes, cyclone, hurricane, typhoon, tsunami, storm surge, earthquake, hill slides, landslides, and volcanic activities.

83.2 The Head of Procuring Entity decides the existence of a Force Majeure that will be the basis of the issuance of order for suspension of Works as stated under GCC Sub Clause 48.1.

84. Notice of Force Majeure

84.1 If a Party is or will be prevented from performing its substantial obligations under the Contract by Force Majeure, then it shall give notice, within fourteen (14) days after the party became aware, to the other Party of the event or circumstances constituting the Force Majeure and shall specify the obligations, the performance of which is or will be prevented.

84.2 Notwithstanding any other provision of this Clause, Force Majeure shall not apply to obligations of either Party to make payments to the other Party under the Contract.

85. Consequences of Force Majeure

85.1 The Contractor shall not be liable for forfeiture of its security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

85.2 If the Contractor is prevented from performing its substantial obligations under the Contract by Force Majeure of which notice has been given under GCC Sub Clause 84, and suffers delay and/or incurs cost by reason of such Force Majeure, the Contractor shall be entitled subject to GCC Sub Clause 91 to:

(a) an extension of time for any such delay, if completion is or will be delayed, under GCC Clause 44, and

(b) if the event or circumstance is of the kind described subparagraphs (a) to (e) of GCC Sub Clause 83.1 occurs in the country, payment of any such cost, including the costs of rectifying or replacing the Works and physical services damaged or destructed by Force Majeure, to the extent they are not indemnified through the insurance policy referred to in GCC Clause 36.

85.3 After receiving notice under GCC Sub Clause 84.1, the Project Manager shall proceed to determine these matters under the provisions of the Contract.

86. Release from Performance

- 86.1 Notwithstanding any other provision of this Clause, if any event or circumstance outside the control of the parties (including, but not limited to, Force Majeure) arises which makes it impossible or unlawful for either or both Parties to fulfil its or their contractual obligations or which, under the law governing the Contract, entitles the Parties to be released from further performance of the Contract, then upon notice by either Party to the other party of such event or circumstance:
- (a) the Parties shall be discharged from further performance, without prejudice to the rights of either Party in respect of any previous breach of the Contract, and
 - (b) the sum payable by the Procuring Entity to the Contractor shall be the same as would have been payable under GCC Sub Clause 88.3 if the Contract had been terminated under GCC Sub Clause 87.3.

F. Termination and Settlement of Disputes

87. Termination

87.1 **Termination for Default**

- (a) The Procuring Entity or the Contractor, without prejudice to any other remedy for breach of Contract, by giving twenty-eight (28) days written notice of default to the other party, may terminate the Contract in whole or in part if the other party causes a fundamental breach of Contract. Fundamental breaches of the Contract shall include, but shall not be limited to, the following:
 - (i) the Contractor stops work for twenty-eight (28) days when no stoppage of work is shown on the current Programme and the stoppage has not been authorized by the Project Manager;
 - (ii) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within eighty four (84) days;
 - (iii) the Project Manager gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;
 - (iv) the Contractor does not maintain a Security, which is required;
 - (v) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of Liquidated Damages can be paid, as specified in GCC Sub Clause 71;
 - (vi) the Contractor has subcontracted the whole of the Works or has assigned the Contract without the required agreement and without the approval of the Project Manager;
 - (vii) the Contractor, in the judgment of the Procuring Entity has engaged in corrupt or fraudulent

practices, as defined in GCC Sub Clause 38, in competing for or in executing the Contract.

- (viii) A payment certified by the Project Manager is not paid by the Procuring Entity to the Contractor within eighty-four (84) days of the date of the Project Manager's certificate.

87.2 Termination for Insolvency

The Procuring Entity and the Contractor may at any time terminate the Contract by giving twenty-eight (28) days written notice to the other party if either of the party becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to any party, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the other party.

87.3 Termination for Convenience

- (a) The Procuring Entity, by giving twenty-eight (28) days written notice sent to the Contractor, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Procuring Entity's convenience, the extent to which performance of the Contractor under the Contract is terminated, and the date upon which such termination becomes effective.
- (b) The Procuring Entity shall not terminate the contract under GCC Sub Clause 87.3 (a) in order to execute the Works itself or to arrange for the Works to be executed by another contractor or to avoid a termination of the Contract by the Contractor as stated under GCC Sub Clause 87.1(a).

87.4 In the event the Procuring Entity terminates the Contract in whole or in part, the Procuring Entity shall accept the portion of the Works that are complete and ready for handing over after the Contractor's receipt of notice of termination of the Contract. For the remaining portion of the Works, the Procuring Entity may elect:

- (a) to have any portion completed by the Contractor at the Contract terms and prices; and /or
- (b) to cancel the remainder and pay to the Contractor an agreed amount for partially completed Works and for materials and parts previously procured by the Contractor, or
- (c) except in the case of termination for convenience as stated under GCC Sub Clause 87.3, engage another Contractor to complete the Works, and in that case the Contractor shall be liable to the Procuring Entity for any cost that may be incurred in excess of the sum that would have been paid to the Contractor, if the work would have been executed and completed by him or her.

87.5 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site

as soon as is reasonably possible.

87.6 The expiration of the Intended Completion Date under GCC Clause 44 and, the initiation of settlement of disputes like amicable or adjudication and arbitration under GCC Clause 92 shall not be deemed a termination of the Contract under GCC Clause 87.

88. Payment upon Termination

88.1 If the Contract is terminated because of a fundamental breach of Contract under GCC Sub Clause 87.1 by the Contractor, the Project Manager shall issue a certificate for the value of the Works done and Plant and Materials ordered less advance payments received up to the date of the issue of the certificate and, further less the amount from percentage to apply to the contract value of the works not completed, as indicated in the **PCC**. If the total amount due to the Procuring Entity exceeds any payment due to the Contractor, the difference shall be a debt payable to the Procuring Entity.

88.2 If the Contract is terminated for the Procuring Entity's convenience or because of a fundamental breach of Contract by the Procuring Entity, the Project Manager shall issue a payment certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's foreign personnel employed solely on the Works and recruited specifically for the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

88.3 If the Contract is terminated for reasons of Force Majeure, the Project Manager shall determine the value of the work done and issue a Payment Certificate which shall include:

- (a) the amounts payable for any work carried out for which unit rates or prices are stated in the Contract;
- (b) the cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery: this Plant and Materials shall become the property of (and be at the risk of) the Procuring Entity when paid for by the Procuring Entity, and the Contractor shall place the same at the Procuring Entity's disposal;
- (c) other costs or liabilities which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works;
- (d) the cost of removal of Temporary Works and Contractor's Equipment from the Site; and
- (e) the cost of repatriation of the Contractor's staff and labour employed wholly in connection with the Works at the date of termination.

89. Property

89.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Procuring Entity if the Contract is terminated because of the Contractor's default stated under GCC Sub Clause 87.1.

- 90. Frustration**
- 90.1 If the Contract is frustrated by the occurrence of a situation of Force Majeure as defined in GCC Sub Clause 83, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all works carried out before receiving it and for any work carried out afterwards to which a commitment was made.

G. Claims, Disputes and Arbitration

- 91. Contractor's Claims**
- 91.1 If the Contractor considers himself to be entitled to any extension of the Completion Time and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give notice to the Procuring Entity, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than twenty-eight (28) days after the Contractor became aware, or should have become aware, of the event or circumstance.
- 91.2 If the Contractor fails to give notice of a claim within such period of twenty-eight (28) days, the Intended Completion Date shall not be extended, the Contractor shall not be entitled to additional payment, and the Procuring Entity shall be discharged from all liability in connection with the claim.
- 91.3 Within forty two (42) days after the Contractor became aware or should have become aware of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Project Manager, the Contractor shall send to the Project Manager a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed, for settlement.
- 92. Settlement of Disputes**
- 92.1 **Amicable settlement**
- The procuring Entity and the Contractor shall use their best efforts to settle amicably all possible disputes arising out of or in connection with this Contract or its interpretation.
- 92.2 **Adjudication**
- (a) If the Contractor believes that a decision taken by the Project Manager was either outside the authority given to the Project Manager by the Contract or that the decision was wrongly taken, the decision shall be referred to the Adjudicator within fourteen (14) days of notification of the Project Manager's decision in writing.
- (b) The Adjudicator named in the **PCC** is jointly appointed by the parties. In case of disagreement between the parties, the Appointing Authority designated in the **PCC** shall appoint the Adjudicator within fourteen (14) days of

receipt of a request from either party.

- (c) The Adjudicator shall give its decision in writing to both parties within twenty-eight (28) days of a dispute being referred to it.
- (d) The Contractor shall make all payments (fees and reimbursable expenses) to the Adjudicator, and the Procuring Entity shall reimburse half of these fees through the regular progress payments.
- (e) Should the Adjudicator resign or die, or should the Procuring Entity and the Contractor agree that the Adjudicator is not functioning in accordance with the provisions of the Contract; a new Adjudicator will be jointly appointed by the Procuring Entity and the Contractor. In case of disagreement between the Procuring Entity and the Contractor the Adjudicator shall be designated by the Appointing Authority within fourteen (14) days of receipt of a request from either party as stated under GCC Sub Clause 92.2 (b)

92.3 **Arbitration**

- (a) If the parties are unable to reach a settlement as per GCC Clauses 92.1 and 92.2 within twenty-eight (28) days of the first written correspondence on the matter of disagreement, then either party may give notice to the other party of its intention to commence arbitration in accordance with GCC Sub Clause 94.3(b).
- (b) The arbitration shall be conducted in accordance with the Arbitration Act (**Act No 1 of 2001**) of Bangladesh as at present in force and in the place shown in the **PCC**.

Section 4. Particular Conditions of Contract

Instructions for completing the Particular Conditions of Contract are provided in italics in parenthesis for the relevant GCC Clauses.

GCC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
GCC 1.1(j)	The Contractor is Name : Address : Name of authorized representative :
GCC 1.1(ff)	The Procuring Entity is: Md. Abdur Rahim Mallik, Project Director, Rural Electrification Expansion Dhaka Division Program-II (Revised) Address: Bangladesh Rural Electrification Board Training Academy Building (5th floor), Nikunja-2, Khilkhet Dhaka-1229, Bangladesh. Telephone: 8900035. e-mail address: pddd2breb@gmail.com
GCC 1.1(gg)	The Project Manager is : Not Applicable.
GCC 1.1 (bb)	The original Contract Price is the amount stated in the NOA (PW3-8)
GCC 1.1(y)	The Intended Completion Date for the whole of the Works shall be 31st May 2018
GCC 1.1(kk)	The Site is located at Dhaka Division and is defined in drawings No: 1, 2, 3, 4.
GCC 1.1(nn)	The Start Date shall be from the date of signing of the contract.
GCC 1.1(rr)	The Works consist of items stated in the Bill of quantities (BOQ) in Section-6 against Supply, Installation, Testing & Commissioning of 33/11KV Sub-Station on Turn-Key Basis.
GCC 2.5	The Sectional Completion Dates are: Not Applicable.
GCC 3.1	The Procuring Entity's address for the purpose of communications under this contract is : Contact person: : Project Director, Rural Electrification Expansion Dhaka Division Program-II (Revised) Address: : Bangladesh Rural Electrification Board Training Academy Building (5th floor), Nikunja-2, Khilkhet Dhaka-1229, Bangladesh. Telephone: 8900035 e-mail address: pddd2breb@gmail.com
	The Contractor's address for the purpose of communications under this contract is : Contact person: Address: Tel: Fax:

	e-mail address:																				
GCC 6.1 (j)	Other documents forming part of the Contract are; - Any other Clarification and Confirmation given by tenderer/supplier if required. Additional Conditions of Particular Application in this Schedule, Schedule of Key personnel, Site investigation Reports, Relevant correspondences prior to signing of the contract in the tender shall form a part of the contract.																				
GCC 9.1	The Contractor or the Subcontractor that is a national of, or registered in, the following countries are not eligible: Israel.																				
GCC 9.2	Materials, Equipments Plants and supplies shall not have their origin in the following countries: Israel.																				
GCC 13.1	Possession of the Site or part(s) of the Site, to the Contractor shall be given on the following date(s); Shall be from the date of signing of the contract.																				
GCC 19.1	Following Key Personnel to carry out the functions stated in the Schedule shall be employed by the Contractor; A Construction Project Manager, Engineer, and other key staff shall have the following qualifications and experience: <table border="1" data-bbox="411 891 1414 1361"> <thead> <tr> <th>No</th> <th>Position</th> <th>Total Working Experience (overall years)</th> <th>In Similar Working Experience (Years)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Project Manager (B.Sc. Engineer Electrical/Mechanical 1/1 no.)</td> <td>10 Years.</td> <td>05 Years.</td> </tr> <tr> <td>2.</td> <td>SiteEngineer(Elec) B.Sc./Diploma Engr.</td> <td>5/10 Years.</td> <td>03 Years.</td> </tr> <tr> <td>3.</td> <td>SiteEngineer(B.Sc./Diploma Engr. Civil)</td> <td>5/10 Years.</td> <td>03 Years.</td> </tr> <tr> <td>4.</td> <td>Supervisor,foreman, Lineman for Line construction/ augmentation work (4 nos.)</td> <td>05 Years.</td> <td>03 Years.</td> </tr> </tbody> </table>	No	Position	Total Working Experience (overall years)	In Similar Working Experience (Years)	1.	Project Manager (B.Sc. Engineer Electrical/Mechanical 1/1 no.)	10 Years.	05 Years.	2.	SiteEngineer(Elec) B.Sc./Diploma Engr.	5/10 Years.	03 Years.	3.	SiteEngineer(B.Sc./Diploma Engr. Civil)	5/10 Years.	03 Years.	4.	Supervisor,foreman, Lineman for Line construction/ augmentation work (4 nos.)	05 Years.	03 Years.
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GCC 20.3	Nominated Subcontractor(s) named below; Not Applicable																				
GCC 22.1	The Contractual matters between the Procuring Entity and the Contractor shall be decided by The Project Director, Rural Electrification Expansion Dhaka Division Program-II (Revised) Address: : Bangladesh Rural Electrification Board Training Academy Building (5th floor), Nikunja-2, Khilkhhet Dhaka-1229, Bangladesh. Telephone: 8900035.																				
GCC 36.1	The insurance cover shall be: <table border="1" data-bbox="411 1783 1426 2076"> <tbody> <tr> <td>(a)</td> <td>The minimum cover for the Works of Plant and Materials is 110% of the contract price.</td> </tr> <tr> <td>(b)</td> <td>The maximum deductible for insurance of the Works and of Plant and Materials is 10% of the sum insured.</td> </tr> <tr> <td>(c)</td> <td>The minimum cover for loss or damage to Equipment is 110% of the replacement value of the equipment.</td> </tr> </tbody> </table>	(a)	The minimum cover for the Works of Plant and Materials is 110% of the contract price.	(b)	The maximum deductible for insurance of the Works and of Plant and Materials is 10% of the sum insured.	(c)	The minimum cover for loss or damage to Equipment is 110% of the replacement value of the equipment.														
(a)	The minimum cover for the Works of Plant and Materials is 110% of the contract price.																				
(b)	The maximum deductible for insurance of the Works and of Plant and Materials is 10% of the sum insured.																				
(c)	The minimum cover for loss or damage to Equipment is 110% of the replacement value of the equipment.																				

	(d)	The maximum deductible for insurance of Equipment is 10% of the sum insured.
	(e)	The minimum cover for other property is 10% of the Contract Price.
	(f)	The maximum deductible for insurance of other property is 10% of sum insured Value.
	(g)	The minimum cover for personal injury or death: (i) for the Contractor's employees is as per the law and common practice in Bangladesh. (ii) for third parties is as per the law and common practice in Bangladesh.
GCC 39.1		Commencement Date shall be from the date of signing of the contract.
GCC 40.1		The Intended Completion Date of the Works shall be 31st May 2018 .
GCC 41.1		The Contractor shall submit a Programme for the Works within 15 (fifteen) days of signing the Contract.
GCC 41.2		The period between Programme updates is 30 (Thirty) days.
GCC 41.3		The amount to be withheld for late submission of an updated Programme is : Nil .
GCC 53		<p>i) The pre-shipment inspection and testing of the materials shall be carried out by BREB at the supplier's factory/show room/warehouse at supplier's own cost . Shipment clearance will be given after satisfactory completion of pre-shipment inspection of the materials.</p> <p>ii) The Supplier shall notify the purchaser at least Four (4) weeks in advance of the date or dates when the products and /or components will be ready for inspection. Such date must be fixed at least 15 (fifteen) days prior to the due delivery date.</p> <p>iii) In case the purchaser or its representative does not get the product ready for inspection on the specified date as per inspection notice of the tenderer, the fee for any further visit / visits will be borne by the bidder, in addition to liquidated damage applicable as per terms & conditions of the schedule.</p> <p>iv) Any factory/warehouse inspection prior to delivery or final inspection at the destination of delivery shall not relieve the supplier from full responsibility for furnishing material and / or equipment conforming to the technical specifications contained herein, nor prejudice any claim, right or privilege which the purchaser may have under the warranty furnished by the manufacturer/bidder in accordance with the Tender Document.</p>
GCC 56.1		The Defects Liability Period is 12 (Twelve) months.
GCC 65.3		<p>The particulars of the Bank Account nominated are as follows :</p> <p>Title of the Account : <i>[insert title to whom the Contract awarded]</i></p> <p>Name of the Bank : <i>[insert name with code, if any]</i></p> <p>Name of the Branch : <i>[insert branch name with code ,if any]</i></p> <p>Account Number : <i>[insert number]</i></p> <p>Address : <i>[insert location with district]</i></p>

	<p>Tel : Fax : e-mail address :</p> <p><i>[information furnished by the Contractor shall be substantiated by the concerned Bank and authenticated by the Procuring Entity]</i></p>
GCC 66.1	The rate of interest shall be the prevailing rate of interest for commercial borrowing established in the country : Not Applicable
GCC 67.1(m)	The following additional events shall also be the Compensation Events: Not Applicable
GCC 69.1	The Contract is not subject to price adjustment.
GCC 70.1	The proportion of payments to be retained is 10% of the contract price.
GCC 71.1	<p>The amount of Liquidated Damages or in other words Delay due to Damages for the uncompleted Works or any part thereof is 0.075 of one (1%) percent of its Contract price per day of delay.</p> <p><u>Guide to application of GCC Sub Clause 71.1 above</u></p> <p><i>[Liquidated damages is equivalent to an amount to be determined in accordance with the following formulae</i></p> <p>$T = V \times P \times n$</p> <p>Where;</p> <p>T = Total amount of Liquidated Damages</p> <p>V = Contract Value of Uncompleted Works, completed after the expiry of the Intended Completion Date or extended Intended Completion Date, as applicable</p> <p>P = Percent-rate at which the Liquidated Damages shall be imposed per day of delay</p> <p>n = No of days delayed for completion of uncompleted works or part thereof after the expiry of the Intended Completion Date or extended Intended Completion Date, as applicable.</p>
GCC 71.1	The maximum amount of Liquidated Damages for the uncompleted Works or any part thereof is 10%(ten) percent of the final Contract Price of the whole of the Works.
GCC 72.1	The Bonus for the whole of the Works is : Not Applicable.
GCC 73.1	The Advance Payment shall be : Not Applicable.
GCC 73.4	Advance Payment shall be Not Applicable.
GCC 75.2	The percentage for adjustment of Provisional Sums is : Not Applicable.
GCC 82.1	<p>The date by which “as-built” drawings are required is within 28 days after taking over certificate (TOC).</p> <p>The date by which operating and maintenance manuals are required is within 28 days after taking over certificate (TOC).</p>
GCC 82.2	The amount to be withheld for failing to produce “as-built” drawings and/or operating and maintenance manuals by the date required is the Re-tention money kept for defects liability period.
GCC 88.1	The percentage to apply to the contract value of the works not completed, representing the Procuring Entity’s additional cost for completing the uncompleted Works, is 20% (Twenty) percent.

GCC 92.2 (b)	The Adjudicator jointly appointed by the parties is: Name: Address: Tel No: Fax No: e-mail address:
GCC 92.2(b)	In case of disagreement between the parties, the Appointing Authority for the Adjudicator is the President of the Institution of Engineers, Bangladesh (IEB).
GCC 92.3 (b)	The arbitration shall be conducted in the place mentioned below; Dhaka, Bangladesh as decided by Adjudicator.

SECTION 4: PART -III- (LABOUR LAWS)

1. LABOUR LAW

Bangladesh Labour Law shall be applicable for this tender.

Section 5. Tender and Contract Forms

Form	Title
Tender Forms	
PW3 – 1	Tender Submission Letter
PW3 – 2	Tenderer Information
PW3 – 3	JV Partner Information (<i>if applicable</i>)
PW3 – 4	Subcontractor Information (<i>if applicable</i>)
PW3 – 5	Personnel Information
PW3 – 6	Bank Guarantee for Tender Security (<i>when this option is chosen</i>)
PW3 - 7	Bank's Letter of Commitment for Line of Credit (<i>when this option is chosen</i>)
Contract Forms	
PW3 – 8	Notification of Award
PW3 – 9	Contract Agreement
PW3 – 10	Bank Guarantee for Performance Security (<i>when this option is chosen</i>)
PW3 –11	Bank Guarantee for Advance Payment (<i>if applicable</i>)
PW3 –12	Bank Guarantee for Retention Money Security (<i>when this option is chosen</i>)

Forms **PW3 -1** to **PW3 -7** comprises part of the Tender Format and should be completed as stated in ITT Clauses 24.

Forms **PW3 -8** to **PW3 -12** comprises part of the Contract as stated in GCC Clause 6.

Tender Submission Letter (Form PW3-1)

*[This letter should be completed and signed by the Authorised Signatory
on the Letter-Head Pad of the Tenderer]*

To: <i>[Contact Person]</i> <i>[Name of the Procuring Entity]</i> <i>[Address of the Procuring Entity]</i>	Date:
Invitation for Tender No:	IFT No. _____
Tender Package No:	Package No. _____
Lot No: <i>(when applicable)</i>	Lot No. _____

We, the undersigned, tender to execute in conformity with the Tender Document, the following Works and physical services, viz:

In accordance with ITT Clause 27 and 28, the following price applies to our Tender:

The Tender price is: (ITT Sub Clause 27.4 and 28.1)	Tk. _____ <i>[in figures]</i> Taka _____ <i>[in words]</i>
The advance payment (when applicable) is: <i>[insert the amount based on percentage of the Tender Price]</i> (GCC Sub Clause 73.1)	Taka _____ <i>[in words]</i> Taka _____ <i>[in words]</i>

and we shall accordingly submit an Advance Payment Guarantee in the format shown in Form **PW3-10**.

In accordance with ITT Sub Clauses 27.6, the following discounts shall apply to our Tender:

The unconditional discount proposed in this package/Lot is: _____ In Percentage (%).-----

The discount shall be equally applicable on all the items of BOQ after arithmetical correction.

In signing this letter, and in submitting our Tender, we also confirm that:

- (a) our Tender shall be valid for the period stated in the Tender Data Sheet (ITT Sub Clause 33.1) and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (b) a Tender Security is attached in the form of a *[state Pay Order, Bank Draft, Bank Guarantee]* in the amount stated in the Tender Data Sheet (ITT Sub Clause 36.1) and valid for a period of twenty-eight (28) days beyond the Tender Validity date;
- (c) if our Tender is accepted, we commit to furnishing a Performance Security within the time stated under ITT Sub Clause 66.2 in the amount stated in the Tender Data Sheet (ITT Sub Clauses 65.1) and in the form specified in the Tender Data Sheet (ITT Sub Clause 66.1) valid for a period of twenty-eight (28) days beyond the date of issue of the Completion Certificate of the Works;
- (d) we have examined and have no reservations to the Tender Document, issued by you on *[insert date]*; including Addendum to Tender Document No(s) *[state numbers]* , issued in accordance with the Instructions to Tenderers (ITT Clause 11). *[insert the number and issuing date of each addendum; or delete this sentence if no Addendum has been issued]*;
- (e) we, including as applicable, any JV partner or Subcontractor for any part of the contract resulting from this Tender process, have nationalities from eligible countries, in accordance with ITT Sub Clause 5.1;
- (f) we are submitting this Tender as a sole Tenderer in accordance with ITT Sub Clause 40.3
or
 we are submitting this Tender as the partners of a JV, comprising the following other partners in accordance with ITT Sub Clause 40.3;

	Name of Partner	Location & District of Partner
1		
2		
3		
4		

- (g) *we are not a Government owned entity as defined in ITT Sub Clause 5.3*
or
we are a Government owned entity, and we meet the requirements of ITT Sub Clause 5.10;
- (h) we, including as applicable any JV partner, declare that we are not associated, nor have been associated in the past, directly or indirectly, with a consultant or any other entity that has prepared the design, specifications and other documents in accordance with ITT Sub Clause 5.6;
- (i) we, including as applicable any JV partner or Subcontractor for any part of the contract resulting from this Tender process, have not been declared ineligible by the Government of Bangladesh on charges of engaging in corrupt, fraudulent, collusive or coercive practices in accordance with ITT Sub Clause 5.7;
- (j) furthermore, we are aware of ITT Clause 4 concerning such practices and pledge not to indulge in such practices in competing for or in executing the Contract;

- (k) we intend to subcontract an activity or part of the Works, in accordance with ITT Sub Clause 19.1, to the following Subcontractor(s);

Activity or part of the Works	Name of Subcontractor with Location and District

- (l) we, including as applicable any JV partner, confirm that we do not have a record of poor performance, such as abandoning the works, not properly completing contracts, inordinate delays, or financial failure as stated in ITT Clause 5.8, and that we do not have, or have had, any litigation against us, other than that stated in the Tenderer Information (**Form PW3-2**);
- (m) we are not participating as Tenderer in more than one Tender in this Tendering process. We understand that your written Notification of Award shall constitute the acceptance of our Tender and shall become a binding Contract between us, until a formal Contract is prepared and executed;
- (n) we, including as applicable any JV partner, confirm that we do not have a record of insolvency, receivership, bankrupt or being wound up, our business activities were not been suspended, and it was not been the subject of legal proceedings in accordance with ITT Sub Clause 5.9;
- (o) we, including as applicable any JV partner, confirm that we have fulfilled our obligations to pay taxes and social security contributions applicable under the relevant national laws and regulations of Bangladesh in accordance with ITT Sub Clause 5.5;
- (p) we understand that you reserve the right to reject all the Tenders or annul the Tender proceedings, without incurring any liability to Tenderer, in accordance with ITT Clause 60.

Signature:	<i>[insert signature of authorised representative of the Tenderer]</i>
Name:	<i>[insert full name of signatory with National ID Number]</i>
In the capacity of:	<i>[insert capacity of signatory]</i>
Duly authorised to sign the Tender for and on behalf of the Tenderer	

[If there is more than one (1) signatory, or in the case of a JV, add other boxes and sign accordingly].

Attachment 1:

[ITT Sub Clause 40.3]

Written confirmation authorising the above signatory(ies) to commit the Tenderer

[and, if applicable]

Attachment 2:

[ITT Sub Clause 29.2(b)]

Copy of the JV Agreement / Letter of Intent to form JV with draft proposed Agreement

Tenderer Information (Form PW3-2)

[This Form should be completed only by the Tenderer, preferably on its Letter-Head Pad]

Invitation for Tender No:

IFT No]

Tender Package No:

[Package No]

Lot No (*when applicable*)

[Lot No)]

1. Eligibility Information of the Tenderer [ITT –Clauses 5 & 29]			
1.1	Nationality of individual or country of registration		
1.2	Tenderer's legal title		
1.3	Tenderer's registered address		
1.4	Tenderer's legal status <i>[complete the relevant box]</i>		
	Proprietorship		
	Partnership		
	Limited Liability Concern		
	Government-owned Enterprise		
	Others <i>[please describe, if applicable]</i>		
1.5	Tenderer's year of registration		
1.6	Tenderer's authorised representative details		
	Name		
	National ID number		
	Address		
	Telephone / Fax numbers		
	e-mail address		
1.7	Litigation [ITT Cause 13]		
	A. No pending litigation <input type="checkbox"/> <i>[if no pending litigation put Tick Mark in Box]</i>		
	B. Pending litigation		
	Year	Matter in dispute	Value of Pending Claim
			Value of Pending

			in Taka	Claim as Percentage of Net Worth
1.8	Tenderer to attach photocopies of the original documents mentioned aside	[All documents required under ITT Clauses 5 and 29]		
The following two information are applicable for National Tenderers				
1.9	Tenderer's Value Added Tax Registration (VAT) Number			
1.10	Tenderer's Tax Identification Number(TIN)			
[The foreign Tenderers, in accordance with ITT Sub Clause 5.1, shall provide evidence by a written declaration to that effect to demonstrate that it meets the criterion]				
2. Qualification Information of the Tenderer [ITT Clause 32]				
2.1	General Experience in Construction Works of Tenderer [State years of experience]			
2.2	Specific Experience in Construction Works of Tenderer Completed Contracts of similar nature, complexity and methods/construction technology			
	Contract No	[insert reference no] of [insert year]		
	Name of Contract	[insert name]		
	Role in Contract <i>[tick relevant box].</i>	Prime Contractor	Subcontractor	Management Contractor
	Award date	[insert date]		
	Completion date	[insert date]		
Total Contract Value	[insert amount]			
Procuring Entity's Name Address Tel / Fax <u>e-mail</u>				
Brief description with justifications of the similarity compared to the Procuring Entity's requirements	[state justification in support of its similarity compared to the proposed works]			
2.3	Average annual construction turnover [ITT Sub Clause 15.1(a)] <i>[total certified payments received for contracts in progress or completed under public sector for a period as stated under ITT Sub Clause 15.1(a), using rate of exchange at the end of the period reported]</i>			
	Year	Currency	Amount Taka or Equivalent Taka	

2.4	Liquid assets available to meet the construction cash flow [ITT Sub Clause 15.1(b)]		
	No	Source of Financing	Amount Available
In order to confirm the above statements the Tenderer shall submit , as applicable, the documents mentioned in ITT Sub Clause 32.1(d)			
2.5	Contact Details [ITT Sub Clause 32.1 (h)]		
	Name, address, and other contact details of Tenderer Bankers and other Procuring Entity(s) that may provide references, if contacted by this Procuring Entity		
2.6	Qualifications and experience of key technical and administrative personnel proposed for Contract administration and management [ITT Sub Clause 32.1(f)]		
	Name	Position	Years of General Experience
<i>[Tenderer to complete details of as many personnel as are applicable. Each personnel listed above should complete the Personnel Information (Form PW3-5)]</i>			
2.7	Major Construction Equipment proposed to carry out the Contract [ITT Sub Clause 32.1(g)]		
	Item of Equipment	Condition (new, good, average, poor)	Owned, leased or to be purchased (state owner, lessor or seller)
<i>[Tenderer to list details of each item of major construction equipment, as applicable]</i>			

JV Partner Information (Form PW3-3)

[This Form should be completed by each JV partner].

Invitation for Tender No:

[IFT No]

Tender Package No:

Package No]

Lot No. (*when applicable*)

[Lot No)]

1.	Eligibility Information of the JV Partner [ITT –Clauses 5 & 29]			
1.1	Nationality of individual or country of registration			
1.2	JV Partner's legal title			
1.3	JV Partner's registered address			
1.4	JV Partner's legal status <i>[complete the relevant box]</i>			
	Proprietorship			
	Partnership			
	Limited Liability Concern			
	Government-owned Enterprise			
	Others <i>[please describe, if applicable]</i>			
1.5	JV Partner's year of registration			
1.6	JV Partner's authorised representative details			
	Name			
	National ID number			
	Address			
	Telephone / Fax numbers			
	e-mail address			
1.7	Litigation [ITT Cause 13]			
	A. No pending litigation		<input type="checkbox"/> <i>[if no pending litigation put Tick Mark in Box]</i>	
	B. Pending litigation			
	Year	Matter in dispute	Value of Pending Claim in Taka	Value of Pending Claim as Percentage of Net Worth

1.8	JV Partner to attach photocopies of the original documents mentioned aside	[All documents required under ITT Clauses 5 and 29]		
The following two information are applicable for national JV Partners only				
1.9	JV Partner's Value Added Tax Registration (VAT) Number			
1.10	JV Partner's Tax Identification Number(TIN)			
[The foreign JV Partners, in accordance with ITT Sub Clause 5.1, shall provide evidence by a written declaration to that effect to demonstrate that it meets the criterion]				
2.	Key Activity(ies) for which it is intended to be joint ventured, if it can be specified [ITT Sub Clause 18.2]			
	Elements of Activity	Brief description of Activity		
3.	Qualification Information of the JV Partners [ITT Clause 32]			
3.1	General Experience in Construction Works of JV Partners [State years of experience]			
3.2	Specific Experience in Construction Works of JV Partners Completed Contracts of similar nature, complexity and methods/construction technology			
	Contract No	[insert reference no] of [insert year]		
	Name of Contract	[insert name]		
	Role in Contract <i>[tick relevant box].</i>	Prime Contractor	Subcontractor	Management Contractor
	Award date	[insert date]		
	Completion date	[insert date]		
	Total Contract Value	[insert amount]		
	Procuring Entity's Name Address Tel / Fax <u>e-mail</u> Brief description with justifications of the similarity compared to the Procuring Entity's requirements	[state justification in support of its similarity compared to the proposed works]		
3.3	Average annual construction turnover [ITT Sub Clause 15.1(a)] <i>[[total certified payments received for contracts in progress or completed under public sector for a period as stated under ITT Sub Clause 15.1(a), using rate of exchange at the end of the period reported]]</i>			
	Year	Currency	Amount Taka or Equivalent Taka	
3.4	Liquid assets available to meet the construction cash flow [ITT Sub Clause 15.1(b)]			
	No	Source of Financing	Amount Available	

In order to confirm the above statements the JV Partners shall submit , as applicable, the documents mentioned in ITT Sub Clause 32.1(d)

3.5	Contact Details [ITT Sub Clause 32.1 (h)]		
	Name, address, and other contact details of JV Partner's Bankers and other Procuring Entity(s) that may provide references, if contacted by this Procuring Entity		

3.6	Qualifications and experience of key technical and administrative personnel proposed for Contract administration and management [ITT Sub Clause 32.1(f)]			
	Name	Position	Years of General Experience	Years of Specific Experience

[JV Partners to complete details of as many personnel as are applicable. Each personnel listed above should complete the Personnel Information (Form PW3-5)]

3.7	Major Construction Equipment proposed to carry out the Contract [ITT Sub Clause 32.1(g)]		
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	Item of Equipment	Condition (new, good, average, poor)	Owned, leased or to be purchased (state owner, lessor or seller)

[Tenderer to list details of each item of major construction equipment, as applicable]

Subcontractor Information (Form PW3-4)

[This Form should be completed by each Subcontractor, preferably on its Letter-Head Pad]

Invitation for Tender No: [IFT No]
 Tender Package No [Package No]
 Lot No. (when applicable) [Lot No]

1. Eligibility Information of the Subcontractor [ITT –Clauses 5 & 29]		
1.1	Nationality of Individual or country of Registration	
1.2	Subcontractor's legal title	
1.3	Subcontractor's registered address	
1.4	Subcontractor's legal status <i>[complete the relevant box]</i>	
	Proprietorship	
	Partnership	
	Limited Liability Concern	
	Government-owned Enterprise	
	Other (please describe)	
1.5	Subcontractor's year of registration	
1.6	Subcontractor's authorised representative details	
	Name	
	Address	
	Telephone / Fax numbers	
	e-mail address	
1.7	Subcontractor to attach copies of the following original documents	All documents to the extent relevant to ITT Clause 5 and 29 in support of its qualifications
The following two information are applicable for national Subcontractors		
1.8	Subcontractor's Value Added Tax Registration (VAT) Number	
1.9	Subcontractor's Tax Identification Number(TIN)	
[The foreign Subcontractors , in accordance with ITT sub Clause 5.1, shall provide evidence by a written declaration to that effect to demonstrate that it meets the criterion]		
2. Key Activity(ies) for which it is intended to be Subcontracted [ITT Sub Clause 19.1]		
2.1	Elements of Activity	Brief description of Activity

2.2	List of Similar Contracts in which the proposed Subcontractor had been engaged	
	Name of Contract and Year of Execution	
	Value of Contract	
	Name of Procuring Entity	
	Contact Person and contact details	
	Type of Work performed	

Personnel Information (Form PW3-5)

[This Form should be completed for each person proposed by the Tenderer in Form PW3-2 & PW3-3, where applicable]

Invitation for Tender No:	[IFT No]
Tender Package No	[Package No]
Lot No. (when applicable)	[Lot No]

A. Proposed Position (tick the relevant box)			
<input type="checkbox"/> Construction Project Manager	<input type="checkbox"/> Prime Candidate	<input type="checkbox"/> Alternative Candidate	
<input type="checkbox"/> Key Personnel	<input type="checkbox"/> Prime Candidate	<input type="checkbox"/> Alternative Candidate	
B. Personal Data			
Name			
Date of Birth			
Years overall experience			
National ID Number			
Years of employment with the Tenderer			
Professional Qualifications:			
1.			
C. Present Employment <i>[to be completed only if not employed by the Tenderer]</i>			
Name of Procuring Entity (working under):			
Address of Procuring Entity (working under):			
Present Job Title:			
Years with present Procuring Entity:			
Tel No:	Fax No:	e-mail address:	
Contact <i>[manager/personnel officer]</i> :			
D. Professional Experience			
Summarise professional experience over the past twenty years, in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.			
	From	To	Company / Project / Position / Relevant technical and management experience.
1			
2			

Bank Guarantee for Tender Security (Form PW3-6)

[This is the format for the Tender Security to be issued by any scheduled Bank of Bangladesh in accordance with ITT Clause 35 & 36]

Invitation for Tender No:

Date:

Tender Package No:

Lot No (*when applicable*)

To:

[Name and address of the Procuring Entity]

TENDER GUARANTEE No: [insert number]

We have been informed that [*name of Tenderer*] (hereinafter called “the Tenderer”) intends to submit to you its Tender dated [*date of Tender*] (hereinafter called “the Tender”) for the execution of the Works of [*description of works*] under the above Invitation for Tenders (hereinafter called “the IFT”).

Furthermore, we understand that, according to your conditions, the Tender must be supported by a Bank Guarantee for Tender Security.

At the request of the Tenderer, we [*name of Bank*] hereby irrevocably unconditionally undertake to pay you, without cavil or argument, any sum or sums not exceeding in total an amount of Tk [*insert amount in figures and words*] upon receipt by us of your first written demand accompanied by a written statement that the Tenderer is in breach of its obligation(s) under the Tender conditions, because the Tenderer:

- a. has withdrawn its Tender after opening of Tenders but within the validity of the Tender Security; or
- b. refused to accept the Notification of Award (NOA) within the period as stated under ITT; or
- c. failed to furnish Performance Security within the period stipulated in the NOA; or
- d. refused to sign the Contract Agreement by the time specified in the NOA; or
- e. did not accept the correction of the Tender price following the correction of the arithmetic errors as stated under ITT.

This guarantee will expire

- (a) if the Tenderer is the successful Tenderer, upon our receipt of a copy of the Contract Agreement signed by the Tenderer or a copy of the Performance Security issued to you in accordance with the ITT; or
- (b) if the Tenderer is not the successful Tenderer, twenty-eight (28) days after the expiration of the Tenderer’s Tender Validity period, being [*date of expiration of the Tender Validity plus twenty-eight (28) days*].

Consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Signature

Signature

Letter of Commitment for Bank's Undertaking for Line of Credit (Form PW3-7)

[This is the format for the Credit Line to be issued by any scheduled Bank of Bangladesh in accordance with ITT Clause 32.1(d)]

Invitation for Tender No:

Date:

Tender Package No:

Lot No (when applicable)

To:

[Name and address of the Procuring Entity]

CREDIT COMMITMENT No: [insert number]

We have been informed that [name of Tenderer] (hereinafter called "the Tenderer") intends to submit to you its Tender (hereinafter called "the Tender") for the execution of the Works of [description of works] under the above Invitation for Tenders (hereinafter called "the IFT").

Furthermore, we understand that, according to your conditions, the Tenderer's Financial Capacity i.e. Liquid Asset must be substantiated by a Letter of Commitment of Bank's Undertaking for Line of Credit.

At the request of, and arrangement with, the Tenderer, we [name and address of the Bank] do hereby agree and undertake that [name and address of the Tenderer] will be provided by us with a revolving line of credit, in case awarded the Contract, for execution of the Works viz.[insert name of works], for an amount not less than BDT[in figure] (in words) for the sole purpose of the execution of the above Contract. This Revolving Line of Credit will be maintained by us until issuance of "**Taking-Over Certificate**" by the Procuring Entity.

In witness whereof, authorised representative of the Bank has hereunto signed and sealed this Letter of Commitment.

Signature

Signature

Notification of Award (Form PW3-8)

Contract No:

Date:

To:

[Name of Contractor]

This is to notify you that your Tender dated *[insert date]* for the execution of the Works for *[name of project/Contract]* for the Contract Price of Tk *[state amount in figures and in words]*, as corrected and modified in accordance with the Instructions to Tenderers, has been approved by *[name of Procuring Entity]*.

You are thus requested to take following actions:

- i. accept in writing the Notification of Award within seven (7) working days of its issuance in accordance with ITT Clause 64
- ii. furnish a Performance Security in the form as specified and in the amount of Tk *[state amount in figures and words]*, within fourteen (14) days of acceptance of this Notification of Award but not later than (specify date), in accordance with ITT Clause 65 & 66.
- iii. sign the Contract within twenty-eight (28) days of issuance of this Notification of Award but not later than (specify date), in accordance with ITT Clause 70.

You may proceed with the execution of the Works only upon completion of the above tasks. You may also please note that this Notification of Award shall constitute the formation of this Contract which shall become binding upon you.

We attach the draft Contract and all other documents for your perusal and signature.

Signed

Duly authorised to sign for and on behalf of
[name of Procuring Entity]

Date:

Contract Agreement (Form PW3-9)

THIS AGREEMENT made the *[day]* day of *[month]* *[year]* between *[name and address of Procuring Entity]* (hereinafter called "the Procuring Entity") of the one part and *[name and address of Contractor]* (hereinafter called "the Contractor") of the other part:

WHEREAS the Procuring Entity invited Tenders for certain works, viz, *[brief description of works]* and has accepted a Tender by the Contractor for the execution of those works in the sum of Taka *[Contract Price in figures and in words]* (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General Conditions of Contract hereafter referred to.
2. The documents forming the Contract shall be interpreted in the following order of priority:
 - (a) the signed Contract Agreement
 - (b) the Notification of Award
 - (c) the completed Tender and the Appendix to the Tender
 - (d) the Particular Conditions of Contract
 - (e) the General Conditions of Contract
 - (f) the Technical Specifications
 - (g) the General Specifications
 - (h) the Drawings
 - (i) the priced BOQ and the Schedules
 - (j) any other document listed in the **PCC** forming part of the Contract.
3. In consideration of the payments to be made by the Procuring Entity to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Procuring Entity to execute and complete the works and to remedy any defects therein in conformity in all respects with the provisions of the Contract.
4. The Procuring Entity hereby covenants to pay the Contractor in consideration of the execution and completion of the works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Bangladesh on the day, month and year first written above.

For the Procuring Entity

For the Contractor

Signature

Name

National ID No.

Title

In the presence of Name

Address

Bank Guarantee for Performance Security (Form PW3-10)

[This is the format for the Performance Security to be issued by any scheduled Bank of Bangladesh in accordance with ITT Clause 65, 66, 67 & 68]

Contract No: [insert reference number]

Date: [insert date]

To:

[insert Name and address of Procuring Entity]

PERFORMANCE GUARANTEE No: [insert number]

We have been informed that *[name of Contractor]* (hereinafter called “the Contractor”) has undertaken, pursuant to Contract No *[insert reference number of Contract]* dated *[insert date of Contract]* (hereinafter called “the Contract”), the execution of works *[description of works]* under the Contract.

Furthermore, we understand that, according to your conditions, the Contract must be supported by a Bank Guarantee for Performance Security.

At the request of the Contractor, we *[name of Bank]* hereby irrevocably unconditionally undertake to pay you, without cavil or argument, any sum or sums not exceeding in total an amount of Tk *[insert amount in figures and in words]* upon receipt by us of your first written demand accompanied by a written statement that the Contractor is in breach of its obligation(s) under the Contract conditions, without you needing to prove or show grounds or reasons for your demand of the sum specified therein.

This guarantee is valid until *[date of validity of guarantee]*, consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Signature

Signature

Bank Guarantee for Advance Payment (Form PW3-11)

[This is the format for the Advance Payment Guarantee to be issued by any scheduled Bank of Bangladesh in accordance with GCC Clause 73]

Contract No: [insert reference number]

Date: [insert date]

To:

[insert Name and address of the Procuring Entity]

ADVANCE PAYMENT GUARANTEE No: [insert number]

We have been informed that *[name of Contractor]* (hereinafter called “the Contractor”) has undertaken, pursuant to Contract No *[insert reference number of Contract]* dated *[insert date of Contract]* (hereinafter called “the Contract”), the execution of works *[description of works]* under the Contract.

Furthermore, we understand that, according to your Conditions of Contract under GCC Clause 75, the Advance Payment on Contract must be supported by a Bank Guarantee.

At the request of the Contractor, we *[insert name of Bank]* hereby irrevocably unconditionally undertake to pay you, without cavil or argument, any sum or sums not exceeding in total an amount of Tk *[insert amount in figures and in words]* upon receipt by us of your first written demand accompanied by a written statement that the Contractor is in breach of its obligation(s) under the Contract conditions, without you needing to prove or show grounds or reasons for your demand of the sum specified therein.

We further agree that no change, addition or other modification of the terms of the Contract to be performed, or of any of the Contract documents which may be made between the Procuring Entity and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee is valid until *[insert date of validity of guarantee]*, consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Signature

Signature

Bank Guarantee for Retention Money Security (Form PW3-12)

[This is the format for the Retention Money Guarantee to be issued by any scheduled Bank of Bangladesh in accordance with GCC Clause 70]

Demand Guarantee

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

Beneficiary: [insert Name and Address of the Procuring Entity]

Date: [insert date]

RETENTION MONEY GUARANTEE No.: [insert number]

We have been informed that [insert name of Contractor] (hereinafter called "the Contractor") has entered into Contract Number [insert reference number of the Contract] dated [insert date] with you, for the execution of [insert name of Contract and brief description of Works] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment, payment of Tk. [insert the amount of the second half of the Retention Money] which becomes due after the Defects Liability Period has passed and certified in the form of Defects Correction Certificate, is to be made against a Retention Money Guarantee.

At the request of the Contractor, we [insert name of Bank] hereby irrevocably unconditionally undertake to pay you any sum or sums not exceeding in total an amount of Tk. [insert amount in figures] (Taka [insert amount in words]) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor failed to properly correct the defects duly notified in respect of the Works.

It is a condition for any claim and payment under this guarantee to be made that the payment of the second half of the Retention Money referred to above must have been received by the Contractor on its account number [insert A/C no] at [name and address of Bank].

This guarantee is valid until [insert the date of validity of Guarantee that being twenty-eight (28) days beyond the Defects Liability Period]. Consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Signature

Signature

Section 6. Bill of Quantities

BILL OF QUANTITIES (BOQ)
FOR
TURNKEY CONTRACT FOR DESIGN, SUPPLY, CONSTRUCTION, INSTALLATION,
TESTING & COMMISSIONING OF NEW 33/11 KV 4X10 MVA INDOOR SUB-STATION
UNDER BREB.

TENDER PACKAGE NO: DDP-II-SSN-02, Lot No-2/1
Schedule No. 1

1A.Plant, Sub-Stations 04 Nos.(One 33 Kv in, No out)

Item no.	Description of Item	Unit	Quantity	Unit Rate (Tk)	Amount (Tk)
1	2	3	4	5	6=4x5
1A-1	33 KV Vacuum outdoor type circuit breaker (incoming) with current transformer on same structure including Control and Protection panel for the 33 kV outdoor VCB and 33/11.55 kV Transformer.	Nos.	8		
1A-2	33 KV 3×1 phase link (Disconnect Switch) for circuit breaker.	Sets	8		
1A-3	Station transformer 33/0.415 KV, 100 KVA with fused isolator and fused by-pass switch.	Set	4		
1A-4	33 KV PT (3×1 phase, Bus PTs and Feeder PTs).	Set	8		
1A-5	33 KV Line isolator with earth switch, 3 phase (ES).	Set	4		
1A-6	30 KV, 10 KA Station Type Lighting arrester, 3×1 phase.	Set	8		
1A-7	11 kV switchgear panel 10 nos. for 1×10 MVA (6 feeder breaker, two incoming, one bus riser and one bus coupler) and three sets of 11 KV PTs (one for bus & two for incoming) including necessary CTs.	Set	4		
1A-8	33/11.55 kV, 10/14 MVA ONAN/ONAF Transformer with OLTC (including OLTC panel).	Set	4		
1A-9	10 kV, 10 kA lightning arrester, 3×1 phase.	Set	40		
1A-10	A/C Distribution panel.	Set	4		
1A-11	D/C Distribution panel.	Set	4		
1A-12	Battery and battery charger.	Set	4		
1A-13	Internal feeder cabling, inclusive of all necessary LV control and auxiliary supply cable with necessary termination and kits.	Set	4		
1A-14	XLPE Power Cable 1 core 500 mm ² size Cu conductor (11 kV incoming) with necessary termination and kits (no joint is allowed).	Meter	2400		
1A-15	XLPE Power Cable 3 core 185 mm ² size Cu conductor (11 kV Outgoing) with necessary termination and kits (no joint is allowed).	Meter	2880		
1A-16	All supporting hot dip galvanized steel structures including CB structure, LA Structure, landing structure, bus bar structure with proper size of conductor and fittings, overhead surge protection for structures and control building.	Lot	4		
				Sub-Total=	

1B. Mandatory Spare Parts

No mandatory spare parts required.

1C. Miscellaneous

1C -1	Furniture for Control Room	Lot	4		
1C -2	Air Conditioning System for Control Room including all accessories/ components required for fitting & fixing upto commissioning.	Nos.	16		
1C -3	Desktop Computer including all accessories/ components.	No.	4		
1C -4	Laptop Computer including all accessories/ components.	Nos.	4		
1C -5	Supply of water Pump Motor Set including all accessories/ components required for fitting & fixing up to Commissioning (complete in all respect).	Set	4		
1C -6	Supply of 2000 liter (440 Gallon) over head water tank including all required for fitting & fixing up to Commissioning.	Lot	4		
1C -7	Supply of Fire Detection & Protection Facilities for control room building including all accessories/ components required for fitting & fixing up to Commissioning.	Lot	4		
				Sub-Total=	
TOTAL (to Schedule No. 4. Grand Summary)				Total=	

Schedule No. 2. Design Services for Sub-station

TENDER PACKAGE NO: DDP-II-SSN-02,

Lot No-2/1

Item no.	Description of Item	Unit	Quantity	Unit Rate	Amount
1	2	3	4	5	6=4x5
2	All design drawings and documentation works including 5 (five) sets of AS-built drawings and substations operation and maintenance manual.	Nos.	4		
TOTAL (to Schedule No. 4. Grand Summary)					

Schedule No. 3. Installation and Other Services

TENDER PACKAGE NO: DDP-II-SSN-02,

Lot No-2/1

3.Electrical:

Item no.	Description of Item	Unit	Quantity	Unit Rate	Amount
1	2	3	4	5	6=4x5
3A-1	All switchyard electrical installation including (a) supply & installation of Sub-station Earthing System and (b) supply & installation of Sub-station Lighting (as required).	Lot	4		
3A-2	Testing & Commissioning	Lot	4		

3B. Civil & Others

3B-1	Two storied control room building along with the facilities to electricity, water supply, sewerage, etc. as per requirements of the employer.	Lot	4		
	Floor Planning:				
	Ground Floor: Complain Centre, Office Room, Rest Room and Toilet (02 Nos.).				
	1st Floor: 33 kV & 11 kV Switchgear, Battery Room, Toilet (01 No.).				
	The outside wall of the control room building shall be covered with Ceramic Bricks and the floor of the control room shall be Mosaic finishing.				
3B-2	Switchyard civil [all foundations (including future provisional equipment foundations), ducts/ drainage], fencing and gates.	Lot	4		
3B-3	Installation of all switchyard supporting structures [e.g. CB structure, LA Structure, landing structure, bus bar structure, overhead surge protection structures including control building, all accessories/ components required for fitting & fixing up to commissioning.]	Lot	4		
3B-4	Site Development/Earthworks (including pilling, back filling, construction of internal roads (as required), beautification (e.g. gardening), construction of approach road (if required) and all other related works).	Lot	4		
3B-5	Construction of RCC Retaining wall with boundary wall along the property line including main gate 33 KV switchyard fencing including guard room.	Lot	4		
3B-6	Substation yard surface finishing should be with 1" – 1.25" washed stone gravelling of 4" depth.	Lot (LS)	4		
3B-7	Installation of Air Conditioning System for Control Room all accessories/ components required for fitting & fixing up to commissioning.	Lot	4		
3B-8	Installation, testing & commissioning of water Pump Motor Set including all accessories/ components required for fitting & fixing up to Commissioning (complete in all respect).	Lot	4		
3B-9	Installation of 2000 liter (440 Gallon) over head water tank including all pipe connection complete as required/as per direction of the Engineer in charge.	Lot	4		
3B-10	Installation of Fire Detection & Protection Facilities for control room building including all Balancing, Testing & Commissioning.	Lot	4		

3C. Technical (O & M) Training Services

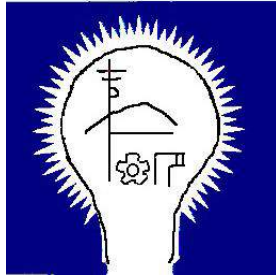
3C-1	Technical Training for 7 days for 2 Nos. BREB/PBS Personnel for each S/S on operation, maintenance, protection & control of 33/11 KV S/S .	Lot	4		
				TOTAL=	

Schedule no.-4 (Summary).

Item no.	Description of Item	Amount (Tk)
	Total Schedule No.1.Plant, and Mandatory Spare Parts.	
	Total Schedule No. 2. Design Services	
	Total Schedule No. 3. Installation and Other Services	
	GRAND TOTAL=	

Note:

- All unit rates and prices quoted by the Tenderers against each basic item or activity shall include the Tenderer's profit, overheads, VAT, Tax's, Duties and all other charges including corresponding incidental service charges and premiums for banking and insurances, as applicable and thus forth the total Tender Price quoted by the Tenderers.
- All item shall include all accessories and components required for fitting & fixing up to commissioning.



BANGLADESH RURAL ELECTRIFICATION BOARD (BREB)

TENDER DOCUMENT FOR THE

**SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF 33/11 KV SUB-
STATION ON TURN-KEY BASIS**

UNDER

RURAL ELECTRIFICATION EXPANSION DHAKA DIVISION PROGRAM-II (REVISED)

VOLUME 2 OF 2

SECTION :7 - GENERAL SPECIFICATION

Scope of Work

Section : 8 - PARTICULAR SPECIFICATION

Section : 9 - DRAWINGS

SECTION :7 - GENERAL SPECIFICATION

**SCOPE OF SUPPLY OF PLANT AND
INSTALLATION SERVICES BY THE
CONTRACTOR**

1.0 Overview

The works in this bidding document covers the supply, construction, installation and commissioning of 33/11 kV Substations at various locations in Dhaka division of Bangladesh, under the jurisdiction of the BREB/PBS, on a design, supply, and installation basis. A list of the sites is given in Table 01 below and site plans are provided in “Drawings” section of this document.

The scope of work includes design, manufacture, quality assurance, inspection & testing, packing for export, insurance & shipment to site, civil works, complete construction & installation jointing, terminating, bonding, earthing, painting, setting to work, site testing & commissioning all the equipment necessary for operation of the sub-station.

The detail requirements are listed in the technical particulars and guaranteed schedules in the technical specification. The Contractor shall remedy all defects during the defect notification period of the equipment as per the contract.

The scope also includes imparting technical training for BREB/PBS Personnel on operation, maintenance, protection & control of 33/11 kV sub-stations.

The Contractor shall be responsible for providing equipment, which shall meet in all respects the performance specifications and will have satisfactory durability for the prevailing site conditions. The Contractor is responsible for ensuring that all and any items of work (materials and labor) required for the safe efficient and satisfactory completion and functioning of the works in accordance with the specification, are included in the bid price whether they be individually described in the specification or not.

The site plans are included in the drawings and the locations are identified by pegs in the ground. Each bidder shall visit each site during the bidding period. Contact details of the relevant BERB/PBS representatives are given in Attachment 1. At least 10days’ notice will be required.

The Bidders shall inspect each new site to identify the location, orientation, actual space available, extent of earth works involved, construction of control building and its ancillary facilities and sub-soil investigation and soil testing reports available (which will be supplied from PMU office)including recommendations, to determine the actual scope of work. Modifications to the lay-out provided in the drawing, may be necessary based on the Contractor’s detailed design and the actual available size of the land at the site.

The detailed design arrangement of the equipment shall be the responsibility of the Contractor subject to the approval of the concern committee of BREB with the recommendation of Project Manager. The Contractor shall submit all drawings, manuals, designs and calculations for review prior to commencing manufacturing and/or installation works. Typical existing BERB designs are included in Drawings section of this document, for information only.

Transportation requirements, storage, suitable construction tools, necessary equipment and all required materials for installation and connections as well as testing and commissioning are included in the scope of work.

1.1 New 33/11 kV Substations – Electrical

There is single category of 10/14 MVA substations to be constructed. The total number of sub-station will be 4(four). Capacity of each sub-station will be 10/14 MVA with incoming but no outgoing circuits. In all the substations, there should be 02 Nos. of Transformer Pads/ Foundations. These foundations shall be made considering the load bearing capacity of 20/28MVA transformers along with a fire wall between the two units to facilitate up-gradation at a later date by adding another transformer. Further provision shall be made for inclusion of a future bus coupler isolator with circuit breaker between the two feeders as well as space for additional 33 kV feeders at the two ends of the bus bar system.

The key requirements for the new substations are presented hereunder; any other works required but not included below but required to complete the substation and put it into operation is to be treated as forming a part of this contract.

1.1.1 The new 10/14 MVA substation shall have the following features:

The 10/14MVA design shall take into consideration future expansion of the installation with the addition of a second 10/14MVA transformer. A fire wall and transformer foundation shall be erected to cater for this at the same time as the first transformer is installed. The 33 kV equipments will be out door and the 11 kV equipments will be indoor. The number of 33 kV feeders will be as per the substation type. The 11 kV switchgear panels will consist of 6 outgoing feeder panels (space shall be left for 6 more feeder panels for future use), two transformer incoming panels and a bus section VCB and riser panels (to utilize a split-bus arrangement at a later date). The main equipment at the substation will consist of:

- 10/14 MVA (ONAN/ONAF), three phase 33/11.55 kV transformers with OLTC having +6% to -18% tapping range and 1.5% tap step;
- 33 kV isolator and earth switch, 1250 A for each feeder bay;
- 33 kV isolator, 1250 A for each feeder bay and transformer bay;
- 33 kV lightning arresters (30 kV, 10 kA);
- 33 kV 1250 A vacuum circuit breaker for each feeder bay and transformer bay;
- 11 kV Indoor switchgear and panels with 2000 A vacuum circuit breakers for transformer and bus section panels and 630 A vacuum circuit breakers for 6 outgoing feeders ;
- 100 kVA, 33/0.415 kV three phase transformer with fused isolator and bypass switch for local station supply;
- 11 kV cables from transformer to 11 kV bus-bar, 2 Nos. single core 500 mm² Cu XLPE Cable per phase (allow 2 × 60 m per phase);
- 11 kV cables to feeders, 3 × 185 mm² Cu XLPE Cable (allow 120 m per feeder for 6 feeders);
- 11kV lightning arresters;
- Space to be left (suitably covered with metal plates) for additional six (6) 11 kV panels – two on either side of the 11kV panel;
- 33 kV and 11 kV CT's and PT's for metering, indication and protection;

- 33 kV panel with OLTC control, CB protection and control, and transformer protection
- 33 kV and 11 kV panels with mimic diagram embedded operating switches;
- Laminated substation Single line diagrams(A0 size) on durable paper- 5 copies;
- Station supply AC panel;
- DC panel;
- Control building, outdoor yard lighting, and all indoor and outdoor electrical facilities
- Battery and charger, battery panel;
- All relevant civil works, foundations, earth grid and structural works as detailed in this specification and shown on the drawings. In particular, a suitable fire wall shall be installed between the two transformer bays;
- The main earth grid including bonding of bays and all steel work / gantries shall be installed for the final configuration;
- The foundations for future second transformer (only) in the future second bay shall also be installed at this time;

The quantities of each item will be as indicated in the bill of quantities and the drawings.

The conceptual single line diagrams, plans and elevations are provided in Section 4 - Drawings

1.1.2 The new 20/28 MVA substation shall have the following features:

The 20/28 MVA design would consist of one 20/28 MVA transformer. Two transformer plinths shall be installed under the project designed for the maximum transformer capacity. A fire wall and transformer foundation shall be erected to cater for this at the same time as the first transformer is installed. The 33 kV equipments will be out door and the 11 kV equipments will be indoor. The number of 33 kV feeders will be as per the substation type. The 11 kV switchgear panels will consist of 8 outgoing feeder panels (space shall be left for 4 more feeder panels for future use), two transformer incoming panels and a bus section VCB and riser panels (to utilize a split-bus arrangement at a later date). The main equipment at the substation will consist of:

- 20/28 MVA (ONAN/ONAF), three phase 33/11.55 kV transformers with OLTC having +6% to -18% tapping range and 1.5% tap step;
- 33 kV isolator and earth switch, 1250 A for each feeder bay;
- 33 kV isolator, 1250 A for each feeder bay and transformer bay;
- 33 kV lightning arresters (30 kV, 10 kA);
- 33 kV 1250 A vacuum circuit breaker for each feeder bay and transformer bay;
- 11 kV Indoor switchgear and panels with 2000A vacuum circuit breakers for transformer and bus section panels and 630A vacuum circuit breakers for 8 outgoing feeders (two of which will be spares) ;
- 100 kVA, 33/0.415 kV three phase transformer with fused isolator and bypass switch for local station supply;
- 11 kV cables from transformer to 11 kV bus-bar, 4 Nos. single core 500 mm² Cu XLPE Cable per phase (allow 4×60 m per phase);
- 11 kV cables to feeders, 3 × 185 mm² Cu XLPE Cable (allow 120 m per feeder for 8 feeders);
- 11kV lightning arresters;
- Space to be left (suitably covered with metal plates) for additional four (4) 11 kV panels – two on either side of the 11kV panel;
- 33 kV and 11 kV CT's and PT's for metering, indication and protection;
- 33 kV panel with OLTC control, CB protection and control, and transformer protection
- 33 kV and 11 kV panels with mimic diagram embedded operating switches;

- Laminated substation Single line diagrams(A0 size) on durable paper- 5 copies;
- Station supply AC panel;
- DC panel;
- Control building, outdoor yard lighting, and all indoor and outdoor electrical facilities
- Battery and charger, battery panel;
- All relevant civil works, foundations, earth grid and structural works as detailed in this specification and shown on the drawings. In particular, a suitable fire wall shall be installed between the two transformer bays;
- The main earth grid including cross connections between bays and cross bays shall be installed for the final configuration. The foundations for the second transformer (only) in the future second bay shall also be installed at this time;

The quantities of each item will be as indicated in the bill of quantities and the drawings.

The conceptual single line diagrams, plans and elevations are provided in Section 4 - Drawings

1.1.3 Terminal Points

Incoming 33kV Line

The landing span from the 33kV incoming line to the equipment is the responsibility of the line contractor and therefore the droppers from the landing pole to the substation equipment gantry shall be provided by the line contractor. If the substation equipment gantry is not ready at the time of the installation of the 33kV line this line span shall be left coiled for later connection by the substation contractor as directed by the Project Manager.

Cables within sub-station

Power and Multi-core cabling between equipment within the substation i.e. 11 kV, LVAC, DC, etc. shall be provided and installed by the contractor as required under this Contract.

11kV Outgoing Cables

The supply of cable boxes on the switchgear complete with cable lugs shall be provided under this Contract. The outgoing feeders from the 11kV switchgear to the overhead take off point including terminations and line surge diverters shall be provided under this contract. The termination of the cable on the pole including surge arresters shall be carried out by the Contractor.

1.1.4 New 33/11 kV 10 and 20 MVA Substations – Civil works

The Contractor shall be responsible for the construction of the control building and its facilities, boundary wall/ fence, fire wall and earthworks associated with each new substation. This shall include but not be limited to the following:

- Site topographical surveys and sub-soil investigations report including recommendation
- Testing of water and materials used in construction works
- Earthworks, and landscaping as per approved drawings
- Any required piling work. Preliminary soil test reports will be provided by the Employer, However final soil test reports and designs will be contractor's responsibility
- Temporary and permanent access roads to the substation from public roads, and service roads inside the Substations.
- A single two storied control room building (approx. 2 × 140 sq. meters) having 2 storied foundations along with the facilities to electricity, water supply, sewerage, etc. as per requirements of the employer.

Floor Planning:

(i) Ground Floor: Customer Service Centre, Office Room, Rest Room and Toilet (02 Nos.).

(ii) First Floor: 33 kV & 11 kV Switchgear, Battery Room, Toilet (01 No.).

The outside wall of the control room building shall be covered with Ceramic Bricks and the floor of the control room shall be Mosaic finishing.

- 33/11 kV transformer foundations (with one additional foundation to cater for future second transformer in single transformer substation). All the foundations should be

constructed considering load bearing capacity of 20/28 MVA sub-stations, oil containment bund walls and fire wall.

- Cable trenches, ducts and sump pits.
- Perimeter boundary fence/wall and matching main and personnel gates.
- Guard room
- Structure and foundations for line landing gantries, plant and equipment.
- Roads and footpaths as per design and site requirements.
- Waste water and surface water drainage systems and septic tank and soakwell
- Building Services; ventilation, plumbing works, water supply, small power and lighting, telephones, fire detection, etc.
- Outdoor lighting
- Water tank as per specific site requirements.
- Any required temporary works.
- Master plan/site layout plan as per respective site condition.
- Architectural plan, section, all side elevation and also 3-D perspective.
- Structural design as per present code of practices in Bangladesh (BNBC), drawings and all documents necessary for, completion and maintenance of the works. Preparation of As-built documentation.
- Tube well and water pump to feed water tank.
- All required lighting systems.
- All required fire extinguishers.
- Any other works required but not included in the above to complete the substation and put it into operation.

1.2 Substation Types

1.2.1 Schedule of Substations and Types

The following Table 01 lists the names of each 33/11 kV substation to be constructed, the type of substation to be constructed and the supply arrangements from the relevant Grid SS/other sources.

Substations are either supplied direct from a new grid substation feeder bay, via a tee-off from an existing feeder from a grid substation, or via a 33 kV switching station.

Table 01

Package No.: DDP-II-SSN-02

Sub-Package No.: Lot-2/1

Name of Substation	Name of PBS	Capacity (MVA)	Layout Design
1	2	3	4
Nikly	Kishoregonj	10/14	1×10/14 (One 33 KV in, no out)
Kashiani-2	Gopalganj	10/14	1×10/14 (One 33 KV in, no out)
Kashiani-3	Gopalganj	10/14	1×10/14 (One 33 KV in, no out)
Sakhipur	Shariatpur	10/14	1×10/14 (One 33 KV in, no out)

Section 7. General Specifications

SPECIFICATION

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Description

A. Electrical

- 1.0 General Technical Requirements for Substation Electrical Equipment
- 2.0 Particular Technical Requirements for Substation Electrical Equipment
- 3.0 Testing and Commissioning

B. Civil - Technical Requirements for Substation Civil and Building Works

- 4.0 General Technical Requirements
- 5.0 Substation Building and Ancillary Facilities
- 6.0 Sanitary and Water Supply Works
- 7.0 Internal and External Electrification

C. Miscellaneous

- 8.0 Desktop/ Laptop Computer & Accessories
- 9.0 Air Conditioner
- 10.0 Control Room Furniture
- 11.0 Fire Detection & Protection Facilities

A. ELECTRICAL

1.0 GENERAL TECHNICAL REQUIREMENTS FOR SUBSTATION ELECTRICAL EQUIPMENT

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Clause No.	Description
1.0	General Technical Requirements-Electrical
1.1	Introduction
1.2	System Parameters
1.3	Climatic Conditions
1.4	Management Systems
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1.32	Cable Boxes and Glands
1.33	Joints and Gaskets
1.34	Junction, Termination Marshalling Boxes, Operating Cubicles etc
1.35	Conduit and Accessories
1.36	Trunking
1.37	Push-Buttons and Separately Mounted Push-Button Stations
1.38	Drawings, Diagrams and Calculations
1.39	Operating and Maintenance Manuals
1.40	Site Storage Facilities
1.41	Switchyard Cable Ducts and Conduits

1.0 General Technical Requirement - Electrical

1.1 Introduction

This section describes the General Technical Requirements for the construction, supply, installation and commissioning of new BERB 33/11 kV indoor type substations and general switchyard equipment, and shall be read in conjunction with the project requirements, schedules and drawings in the specification.

The Contractor shall demonstrate that the equipment has been designed, built and installed in accordance with the relevant international standards and the specification. It shall also operate and perform on a site in accordance with the requirements of the specification and in the environment defined herein.

The design shall be proven by the submission of test certificates at the time of bidding, in accordance with the relevant standards, covering all specified tests deemed to be pertinent to the plant and to the conditions in which it will operate or, if such test certificates cannot be supplied or are deemed unacceptable by the Project Manager, type tests which will be subject to the conditions of this Contract shall be carried out at no extra cost to the Employer.

Type test certificates shall be from an internationally accredited independent testing laboratory such as KEMA- Netherlands; CESI- Italy; Underwriters Laboratory (UL)-USA or CPRI-India. Proof of accreditation shall be provided with the certificate for any other laboratory.

The requirement for switchgear spares, tools and appliances, including test, maintenance and handling equipment shall be as stated in the bidding document. All devices necessary for operation and earthing shall be provided within the contract price.

1.2 System Parameters

Electrical Network Parameters:

Parameter	Network		
	33 kV	11 kV	0.4 kV Aux.
Nominal Voltage	33 kV	11 kV	0.4/0.23 kV
Rated System Voltage	33 kV	11.55 kV	0.415/0.240
Highest System Voltage	36 kV	13.2 kV	0.440 kV
Number of Phases	3	3phase 4 wire with PME system	3 ph,4 wire
Frequency	50Hz	50Hz	50 Hz
Neutral Point	Effective Earthing	Solid Earthing	Solid Earthing
3 Phase Short Circuit Capability	31.5 kA	31.5 kA	12 kA
Duration of Short Circuit			
For power transformers	3 sec	3 sec	3 sec
For other electrical equipment	3 sec	3 sec	3 sec
Impulse Withstand Voltage			
For Substation Equipment	170 kVp	75 kVp	
For Transformer Windings	170 kVp	75 kVp	
For Neutral Point -Equipment	125 kVp	70 kVp	

For Neutral Point -Transformer	75 kVp	28 kV	
Power Freq. Withstand Voltage			2 kV
For Substation Equipment	75 kV	28 kV	
For Transformer Windings	70 kV	28 kV	
For Neutral Point -Equipment	50 kV	28 kV	
For Neutral Point -Transformer	70 kV	28 kV	
Min creepage distance (mm/kV) for highest rated voltage			
Indoor exposed insulators	20 mm	20 mm	
Outdoor exposed insulators	25 mm	25 mm	
Minimum clearance in air	In accordance with IEC 60071		
Minimum clearance between walkway and the lowest live point	2750 mm	2590 mm	
Minimum safety clearance between ground and the lowest point not at earth potential of any insulator	2500 mm (Outdoor)	2500 mm (Outdoor)	
Minimum clearance between live parts and earth	381 mm	200 mm	
Minimum clearance between live fixed metal of different phases	432 mm	250 mm	
Minimum total air gap between terminal of same pole of disconnectors	432 mm	250 mm	

Electrical Station Services

A.C.	Nominally 415 V \pm 10%, 4 wire system. Refer 1.2.1 below.
D.C. (Control & Protection)	110 Volt nominal tolerance on rated voltage + 10% to -15%
Main station service transformers	33,000/415 Volts \pm 10% /Y aux complete with 415 Volt fused isolating switch.

1.2.1 Design of Low Voltage AC System

The design of the LV AC power and control system within the substation shall take into account the possible variations in the incoming 33 kV voltage. The auxiliary supply transformer is connected to the incoming 33 kV voltage to ensure that an auxiliary supply is available even when the power transformer is off line. However this means that the LV AC system is subject to the possible variation of the incoming 33 kV voltage. This voltage may vary from 24 kV up to a maximum of 36 kV.

The LV AC system in the substation, including the off load tapping range of the 33,000/415 V auxiliary transformer, the operating voltages of motors and contactors as well as any AC control systems shall be designed to cater for the above variation.

1.3 Climatic Conditions

Instructions to Bidders: The information in this clause is given solely for the general assistance of bidders and no responsibility for it will be accepted nor will any claims based on this clause be considered.

All plant and equipment supplied under the Contract shall be entirely suitable for the climatic conditions prevailing at site. Atmospheric pollution is mid level and special insulator design or washing is not required. The area is subject to high winds of typhoon strength.

Topographical and Meteorological Site Conditions

Site Location		Various locations in Dhaka Division.
Max design Altitude for all equipment operating characteristics as per IEC above sea level	m	1000
Air Temperatures		
- Maximum Peak(Design maximum ambient temperature)	°C	45
- Maximum daily average	°C	35
- Maximum yearly average	°C	30
- Minimum	°C	4
Sun temperature in direct sunlight	°C	
Maximum ground temp at depth of 1000mm	°C	30
Humidity		
Maximum relative humidity at 40degrees	%	100
Minimum relative humidity	%	50
Yearly average	%	80
Pollution level Outdoor		Medium
Indoor		Medium
Dust Storms	days/annum	30
Average number of days per year of thunder storms		80
Maximum wind velocity (for design purposes)	m/sec	200 km/hr (3 sec gust)
Minimum wind velocity for line rating purposes(33kV)		1.6 km/hr
Solar radiation		100 mW/sq. cm
Ice loading, radial thicknessmm		N/A
Total rainfall		1.5 m/Annum
Seismic factor (The area is designated a zone of moderate intensity for earthquakes.)		1.5 g
Soil Type		alluvial
Soil temperature (at 1.1m)	°C	30
Soil thermal resistivity		1.5 ⁰ C m/w

1.4 Management Systems

1.4.1 General

The Contractor shall carry out the Works in accordance with sound quality and environmental management principles, and in particular shall have management systems which conform to the requirements of the ISO 9000 family of standards for Quality Management and the ISO 14000 family of standards for Environmental Management.

These quality management requirements shall apply to all activities including design, procurement, manufacturing, inspection, testing, packing, shipping, storage, site erection and commissioning.

The Contractor, major sub-contractors and suppliers shall have Quality Systems certified as complying with the requirements of ISO 9001 applicable to sales, design, construction and commissioning of high- and medium-voltage substations. If minor sub-contractors and suppliers do not have such systems then the Contractor's Quality System shall be deemed to apply.

It is preferred that the Bidder be certified as complying with ISO 14001 but this is not a qualifying requirement.

Documents submitted by the Bidder, including those provided by sub-contractors, will not be accepted unless they include evidence that they have been verified by the Bidder.

1.4.2 Quality Documentation and Audit

The Contractor shall submit a copy of its Quality Manual and relevant quality procedures, in the English language, within one (1) month of the Effective Date of the Contract. Quality Manuals from sub-contractor and suppliers shall be submitted within two (2) weeks of the Contractor making a commitment to them.

The Contractor shall clearly identify all quality records that will be used for the Contract. The Employer may undertake an inspection or quality audit of the Contractor's or sub-contractor's facilities at any time. Full quality records of procurement and manufacture shall be made available at the start of factory inspection and testing of equipment. Full quality records to the completion of installation shall be made available before the start of site testing.

1.4.3 Quality Plan

The Contractor shall ensure that its quality procedures address all requirements of the Specification. The Contractor shall ensure that the quality procedures of sub-contractor, manufacturers and suppliers address all requirements of the Specification, and that the Contractor's quality procedures provide verification of this.

The Contractor shall prepare an overall Quality Plan for the Works, and shall provide detailed quality plans for all major sub-contractors and suppliers. Quality plans shall include:

Organization chart with identification and details of key personnel;

Inspection and Test Plans on which hold points and recommended inspections by the Employer are clearly shown.

Quality Plans shall be subject to the approval of the Employer. An initial Quality Plan shall be submitted with one (1) month of the Effective Date of the Contract. A revised Quality Plan which

includes full details of all Inspection and Test Plans shall be submitted within two (2) months of the Effective Date of the Contract.

Not less than two (2) months prior to mobilization to Site, the Contractor shall submit the Quality Plan revised to include a complete list of all site personnel detailing names, positions and responsibilities complete with an organization chart. The Contractor shall provide for approval full details, including curriculum vitae, of all engineering, technical and other key staff to be employed at site. Personnel shall not mobilize to Site prior to approval being given.

1.4.4 Measuring and Testing Equipment

All measuring and testing equipment shall have current calibration certification. Use of measuring and test equipment which is demonstrated to be calibrated against equipment which has such certification may be accepted.

1.4.5 Inspection and Test Records

The Contractor shall compile the reports of all factory and site tests into a volume of the Operation and Maintenance Manuals.

1.4.6 Equipment Identification and Preservation

The Contractor shall establish and maintain a system for the identification, preservation, segregation and handling of all equipment from receipt through manufacturing, dispatch, storage and installation to prevent abuse, misuse, damage, or deterioration by corrosion through exposure to air or moisture.

1.5 Standards

In the technical specification references have been made to various clauses of IEC; BS; ISO and ASTM and ANSI standards. Where any standard referred to in this specification has been superseded by a new standard the reference shall be deemed to be to such superseding standards. Notwithstanding the standard numbers mentioned in the technical specification the bidders are directed to apply the latest published editions of these standards.

Deviations from the specified standards referred to above shall be given in a Schedule of Proposed Standards and shall have to be accepted by the Employer before contract placement.

1.6 Standards and Code Not Specified

Where not specified, the IEC Standard and the Bangladesh National Building Code (BNBC) shall be applicable.

1.7 Units of Measurement

In all correspondence, in all technical schedules, on all drawings and for all instrument scales, S.I. units of measurement are to be employed. Angular measurement shall be in degrees with 90 degrees forming a right angle.

1.8 Facilities and Transport to Site

Chittagong & Mongla sea ports and Benapole land port are the principal port of entry for material to Bangladesh. The contractor shall provide his own storage facilities, security, insurance etc.

The Contractor is responsible for performing all unloading, inland transportation and obtaining all approvals and consents etc. necessary for the movement of plant and Contractor's equipment from the port to the site.

All necessary access roads, jetties or off-loading points etc. required for the transport of the plant etc. to site will be the Contractors responsibility.

Where heavy loads are to be moved the Contractor shall be responsible for performing surveys of the routes to ensure that all portions have adequate load-bearing capacity.

A comprehensive method statement shall be submitted to the Project Manager detailing the proposed transport route(s) and requirements. Plans indicating all bridges, ducts, culverts, railway crossings, overhead lines, water mains etc. their load bearing capacity or clearances as appropriate shall be given together with proposed means of achieving the transportation requirements. Any reinforcement, strengthening, modifications or temporary works required to obtain the necessary capacity shall be the responsibility of the Contractor. The cost of the above is to be included in the Bid price.

No plant is to be consigned to Bangladesh by airfreight without the prior written approval of the Employer.

1.9 Documentation

1.9.1 Documentation

In order for the Employer to obtain the necessary import permits and satisfy the requirements of the customs authorities the following documentation is required.

Within 60 days of the effective date of Contract, the Contractor shall submit a detailed schedule of plant that is to be provided under the Contract indicating the type of equipment and the name of the manufacturer. Six copies of the schedule are to be submitted to the Project Manager and the Employer.

1.10 Erection and Checking at Site

As each part of the works is erected, the Contractor shall seek the Employer's approval that the works have been constructed in accordance with the specification and approved drawings.

For purposes of progress payments for site work a monthly and cumulative system of joint measurement of work done for each section of work shall be set up by the Contractor in a manner approved by the Employer.

Any works constructed prior to the issue of drawings approved by the Employer for the particular works may not be included in the percentage completion figures.

The Contractor is to provide such protection and watchmen as may be considered necessary to safeguard his materials and stores. The Employer will not accept responsibility for any loss or damage, which may occur during the execution of the Contract.

The carrying out of all the work included in the Contract shall be supervised by a sufficient number of qualified representatives of the Contractor, and full facilities and assistance shall be provided to the Employer to check the works. The Contractor shall obtain from the Employer details of the works that he proposes to inspect, but such inspection shall in no way exonerate the Contractor from any of his obligations. The Contractor, if required by the Employer, shall open for inspection before erection any equipment, which has been delivered to the site partly assembled.

On completion of the works the site shall be left clean and tidy to the satisfaction of the Employer. Any damage done to buildings, structures, plant or property belonging to the Employer shall be made good at the Contractor's expense.

The Contractor shall ensure the correctness of electrical and mechanical connections to all equipment supplied under the contract before such equipment is commissioned.

During erection and commissioning the Contractor shall provide all temporary scaffolding, ladders, platforms with toe boards and hand-rails essential for proper access of workmen and inspectors, cover or rail off dangerous opening or holes in floors, and afford adequate protection against materials falling from a higher level on a person below.

The maximum personal safety must be afforded to personnel either directly engaged on this Contract or who in the normal course of their occupations find it necessary to utilize temporary works erected by the Contractor or to frequent the working area.

In each and every case involving a connection between the plant supplied under this Contract and any other existing plant which may or may not be in service, the Contractor must make suitable arrangements as regards the time and manner in which the connection is made subject to the approval of Employer's Representative who is in charge of the existing plant. Where cases arise involving the operation of the plant or work on plant in operation or whenever required by the Employer's Representative, the Contractor must obtain a written "Permit to Work" signed by a person duly authorized by the Employer.

1.11 Contractor's Responsibilities

1.11.1 Planning of Works

Within 30 days after the effective date of Contract, the Contractor shall prepare, in an agreed form, a detailed manufacture, delivery and erection program chart for the complete Contract works, and shall submit the chart to the Employer for approval.

The manufacture, delivery and erection program chart shall indicate for each major item of the Contract the various phases of work from the commencement of the Contract to its completion, e.g., design, ordering of materials, manufacture, delivery, installation and commissioning. The program shall include a fully comprehensive drawings production program which shall demonstrate the Contractors intended issue dates for approval.

These presentations shall be in bar chart and precedence critical path analysis format.

The program shall indicate percentage completion points of the various phases which can form the basis of progress reporting.

A cash-flow forecast of the estimated monthly invoice values shall be included in the program. This forecast shall take into account the terms of payment and indicate down-payments, release of retention's, etc. Figures may be rounded to the nearest thousands of the appropriate currency.

The Contractor shall indicate in the program the number, grade and discipline of supervisory and managerial site staff proposed throughout the site construction periods. If specialist erection and commissioning staff are to be employed by the Contractor details of the number, discipline and duration of visit of these staff are to be indicated in the program. The provision of this information will not form any contractual limit on the number of staff to be provided by the Contractor to ensure the timely completion of the Contract. Should any incident occur which, in the opinion of the Contractor will result in an over-run of any section of the Works this shall be indicated in the program and brought to the Employer's attention.

If, at any time during the execution of the Contract, it is found necessary to modify the approved manufacture, delivery and erection program chart, the Contractor shall inform the Employer and submit a modified chart for his approval. The submission, and subsequent approval, of a modified manufacture, delivery and erection program chart shall not necessarily obviate or diminish the Contractor's responsibilities and liabilities under the Contract. The chart shall be updated at monthly intervals and submitted to the Employer no later than the middle of each calendar month.

1.11.2 Progress Reports and Meetings

At monthly intervals after approval of the plant manufacture, delivery and erection program chart, the Contractor shall submit to the Employer updated bar chart programs and precedence critical path analysis networks in triplicate in an approved format indicating the stage reached in the design, ordering of material, manufacture, delivery and erection of all components of plant. In addition the Contractor will compile and submit "S-curves" based upon the approved program indicating programmed and actual percentage completion of the various stages of drawing approval, manufacture, shipping, civil works and erection for each section of the works plus the overall Contract.

An updated cash-flow forecast indicating previously forecast and actual, involving levels together with revised future requirements shall be submitted quarterly. A graphical display in the form of an "S-curve" of the actual vs. planned payment certification (on & offshore) shall be provided by the Contractor in triplicate on a quarterly basis to supplement the basic cash flow information.

If, during execution of the Contract, the Employer considers the progress position of any section of the work to be unsatisfactory, or for any other reason relating to the Contract, he will be at liberty to call meetings, either in his head office or at site. If required by the Employer, a responsible representative from the Contractor is to attend at the Contractor's expense such meetings with sufficient authority to issue instructions or effect an alteration in the works to the satisfaction of the Employer.

Access to the Contractor's and Sub-contractor's works is to be granted to the Employers representative at all reasonable times for the purpose of ascertaining progress.

1.12 Sub-contracts and Orders

As soon as practicable after entering into the Contract the Contractor may, having obtained the Project Manager's consent, enter into the sub-contracts he considers necessary, for the satisfactory completion of the Contract works. Three un-priced copies of the Contractor's sub-orders shall be supplied to the Project Manager.

One copy of any drawings where the sub-order shall refer shall also be submitted. Each sub-order and drawing shall contain the following reference and an instruction that the plant is subject to inspection and tests to be witnessed by the Project Manager or his agent with sufficient authority to issue instructions, or effect an alternation in the works to the satisfaction of the Project Manager. Approval by the Project Manager of Contractor's sub-orders shall not relieve the Contractor of his responsibilities in meeting this specification. It is the Contractor's responsibility to ensure that a full specification based on the relevant information in the Contract is passed to the sub-contractor.

The Contractor will be responsible for progressing the Sub-contractor's works including visits to the works to ensure the work as to programme, specification, quality and drawings and to witness all necessary routine, sample and type tests. The cost of this Contract control is deemed to be included in the Contract sum.

1.13 Packing and Erection Marks

Each item is to be export packed and properly protected for shipment, transport and storage in the port area and for transport to and storage on site.

All Plant provided under this Contract shall have the packing marked in the following manner.

A green band shall be painted all around each package. The band shall be 8" wide or 1/4 of the length of the packing whichever is the less. Each package should have the following information printed on it in bold letters:-

- (a) Port of Loading
- (b) Name of Consignee
- (c) Purchase Order Number
- (d) Brief description of Stores
- (e) Number of Package
- (f) Gross, tare and net weight
- (g) Measurements
- (h) Contractors Name
- (i) Contract Title
- (j) Contract Number
- (k) Port of Landing

All members comprising multi-part assemblies, e.g. steel frameworks, are to be marked with distinguishing numbers and/or letters corresponding to those of the approved drawings or materials lists.

Colour banding to and approved code is to be employed to identify members of similar shape or type but of differing strengths or grades.

Cases containing delicate items such as relays and instruments should carry a separate marking:

Sensitive equipment packages shall be opened in the presence of a representative of the Employer.

1.14 Contractor's Local Agent

Instruction to Bidder: The Bidder shall state in his bid the name and address in Bangladesh of his local Agent, if any.

1.15 Civil and Building Works

Where items of mechanical plant are mounted on foundations, which are part of the civil engineering works, the Contractor shall carry out suitable leveling and adjustment of the plant on the foundations, before the plant is secured in position. The Contractor shall check the alignment, leveling or positioning of the mechanical plant in question, before and after grooving. The Contractor shall make records of the alignment, leveling or positional measurement and shall maintain such records until his activities at site are concluded. The building steel work shall be designed to carry the loads/forces imposed by pipe work, cables and associated fittings which also form part of the works, and all necessary supports and fixing shall be shown on the relevant drawings.

Such supports and fixings may be secured to the steel work by bolting welding or clamping. No other supports or fixings shall be subsequently attached to the steel work nor may any other drilling, cutting or welding be carried out without the prior permission of the Project Manager.

1.16 Design and Construction Requirements and Interchangeability

1.16.1 General Requirements

The Works shall be designed to operate safely, reliably and efficiently in accordance with the design and operating requirements stated in this specification.

No departure from the specification shall be made subsequent to the Contract without the written approval of the Employer with the recommendation of the Project Manager.

The design shall conform to the best current engineering practice. Each of the several parts of the plant shall be of the maker's standard design, provided that this design is in general accordance with the specification.

The design, dimensions and materials of all parts shall be such that they will not suffer damage as a result of stresses under the most severe service conditions. The materials used in the construction of the plant shall be of the highest quality and selected particularly to meet the duties required of them. The plant shall be designed and constructed to minimize correction. Workmanship and general finish shall be of the highest class throughout.

All plant items and corresponding parts forming similar duties shall be interchangeable in order to minimize the stock of spare parts.

All equipment shall be designed to minimize the risk of fire and damage which may be caused in the event of fire.

1.16.2 Specific Requirements

The choice of plant and design of the installation is to meet the following criteria.

Sub-station layouts are to utilize the minimum of land area.

All equipment is to facilitate the installation of all circuits indicated as "future" with the minimum of disruption. All cabling schemes, D.C. and A.C. equipment etc. shall be designed to accommodate all such future circuits, loads, etc.

The plant and installation shall be designed for a minimum service life of 25 years.

All plant is to have a minimum of 2 years satisfactory and proven service record of high durability and reliability in a similar environment. Documentary evidence in support of the choice of any item of plant shall be provided by the Contractor if requested by the Project Manager.

Each sub-station is to be designed such that the failure or removal of any one item of plant for maintenance or repair shall not impair the operational integrity of the sub-station.

The design and layout of the sub-stations shall ensure the safety of personnel concerned with the operation and maintenance of the plant.

1.17 Plant and Equipment Identification

1.17.1 Identification on Drawings

The Contractor shall prepare comprehensive plant or equipment identification schedules. The schedules shall include the respective flow sheet or drawing/diagram identification numbers.

1.17.2 Labels and Nameplates

The Contractor shall supply and install all labels, ratings, instruction and warning plates necessary for the identification and safe operation of the works.

Nameplates of labels shall be non-hygroscopic material with engraved lettering of a contrasting color or, alternatively in the case of indoor circuit-breakers, starters, etc. of plastic material with suitably colored lettering engraved thereon.

All the above labels and plates shall be securely fixed to items of plant and equipment with stainless steel rivets, plated self tapping screws or other approved means. The use of adhesives will not be permitted.

The language of labels, plates and notices shall comply with the requirements of the Contract.

Individual plant items and all relevant areas within the contract works where a danger to personnel exists shall be provided with plentiful, prominent and clear warning notices.

These warning notices shall draw attention to the danger or risk with words which attract attention and summarize the type of risk or danger. The notices shall also carry a large symbol which graphically depicts the type of risk.

All equipment within panels and desks shall be individually identified. The identification shall correspond to that used in schematic and wiring diagrams.

Each circuit breaker panel, electrical control panel, relay panel etc., shall have circuit designation label mounted on the front and rear. Corridor type panels shall additionally have circuit designation labels within the panels.

All equipment and apparatus mounted there on shall be clearly labeled in an approved manner. The function of each relay, control switch, indicating lamp, MCB, link etc. shall be separately labeled.

The Contractor shall be responsible for the relocation, or replacement of all labels on existing plant, which became inaccurate as a consequence of the contract works.

1.18 Safety and Security

1.18.1 Interlocks

A complete system of interlocks and safety devices shall be provided so that the following requirements and any other condition necessary for the safe and continuous operation of the plant are provided:

- Safety of personnel engaged on operational and maintenance work on the plant.
- Correct sequence of operation of the plant during starting up and shutting down periods.
- Safety of the plant when operating under normal or emergency conditions.
- Interlocks shall be preventive, as distinct from corrective in operation.

Where plant supplied under this Contract forms the whole or a part of a system for which one of more interlocking schemes are required, the Contractor shall be responsible for all interlocking schemes for the Project Manager's approval. General descriptions of interlocking requirements are given in the specifications but the Contractor shall include for any other interlocks he considers necessary.

1.18.2 Locks, Padlocks, and Key Cabinets

The Contractor shall provide padlocks, locks, chains or other locking devices for the locking of all equipment cubicles, electrical isolating switches, selector switches, valves, etc. to the approval of the Project Manager.

All locking devices and chains shall be manufactured from corrosion resistant material. All mechanisms shall be provided with a cover to minimize entry of water or dust.

Locks shall conform to a master keying feature system to be agreed with the Project Manager for groups of equipment.

All locks shall have individual high integrity locks and shall be provided with (two) keys.

Each key shall be provided with a label as specified.

The Contractor will supply and fit key cabinets equipped with labeled hooks, each identified with its appropriate key. Every cabinet shall be provided with a nameplate identifying the cabinet with its respective item or items of plant. Sufficient cabinets will be provided to store all keys supplied under this Contract and cater for future extensions.

The Contractor shall provide comprehensive lock and key schedules to readily permit identification with equipment and doors. Such schedules are not required for loose padlocks.

Where modifications are performed to existing sites the Contractor shall provide a system identical to that existing.

1.19 Spare Parts

1.19.1 Commissioning Spares

In addition to the spare parts being provided for the Employer, the Contractor is responsible for ensuring that he has access to a stock of commissioning spares. Spares provided for the Employer are not to be utilized as commissioning spares, without written approval, in which case the Contractor shall immediately replace the contract spare at his own expense.

All commissioning spares are considered as Contractors equipment.

1.20 Consumable Items

1.20.1 Chemicals and other Consumable

The Contract includes for the provision of all chemicals, resins, and other consumables required for testing, commissioning and setting to work of each section of the works.

Unless otherwise stated, the Contractor shall provide all such chemicals and other consumables required for the efficient operation and maintenance of the plant at full load 24 hours per day for a period of 12 months for each section of the works from the date of the final certificate.

The Contractor shall prepare a list of these consumables giving quantities necessary for each section of the works and the recommended suppliers.

1.21 Painting and Cleaning

Immediately following the award of a contract, the Contractor shall submit the names of the proposed paint supplier and applicator together with a quality assurance program for approval. All paints for a contract shall be provided by one manufacturer and preferably shall be manufactured in one country to ensure compatibility

The painting of the plant shall be carried out in accordance with the appropriate schedule. The work is generally covered by the schedules but where particular items are not referred to specifically, they shall be treated in a manner similar to other comparable items as agreed with the Project Manager.

The schedule indicate standards of surface preparation and painting which is intended to give a minimum service life of 10 years in a coastal industrial environment, with need for minor remedial work only during the intervening period.

Steel sections and plate shall be free from surface flaws and laminations prior to blast cleaning and shall not be in worse condition than Pictorial Standard B, Swedish Standard SIS 05 5900.

The Project Manager is prepared to consider alternative paint schemes to meet the requirements of fabrication using modern automated materials handling systems, provided they offer the same standards of surface protection and service life as those intended by the schedules.

All paints shall be applied by brush or spray in accordance with the schedule, except for priming coats for steel floors, galleries and stairways where dipping is permitted.

Where paint is to be applied by spray, the applicator shall demonstrate that the spray technique employed does not produce paint films containing vacuoles.

Where paint coatings are proposed for the protection of surfaces of equipment exposed to corrosive conditions, such as plant items exposed to brines or sea water immersion in liquid, or wet gases, the coatings shall be formulated to be suitably corrosion resistant and shall be high voltage spark tested at works and/or at site prior to commissioning. The test procedure shall be based on the use of a high voltage direct current. The voltage used shall be 75% of the breakdown voltage of the coating. This breakdown voltage shall first be separately determined using test plates coated with the specified coating formulation and thickness. The coating on the test plate shall also be micro-sectioned by the applicator to show that it is free from vacuoles and other defects likely to invalidate the test procedure.

If the defects revealed by the above test procedure do not exceed one per 5 m² of coating surface, the coating need not be re-tested after the defects have been repaired. If the defects exceed one per 5 m² of coating surface, the repairs shall be resettled after any curing is completed, and this procedure shall be repeated until the defects are less than one per 5 m² of coating surface. After repair of these defects, the equipment can be placed in service without further testing.

All coating proposed for the internal protection of domestic water storage tanks and desalination plants shall be certified by an approved independent Authority as suitable for use in potable water installations and shall meet the non-painting requirements of BS 3416.

All plain shed and bright parts shall be coated with grease, oil or other approved rust preventive before dispatch and during erection and this coating shall be cleaned off and the parts polished before being handed over.

Where lapped or butted joints form part of an assembly which is assembled or part assembled prior to final painting, the jointed surfaces shall be cleaned free from all scales, loose rust, dirt and grease and given one brush applied coat of zinc phosphate primer before assembly.

Paint shall not be applied to surfaces which are superficially or structurally damp and condensation must be absent before the application of each coat.

Painting shall not be carried out under adverse weather conditions, such as low temperature (below 4⁰C) or above 90% relative humidity or during rain or fog, or when the surfaces are less than 3⁰C above dew point, except to the approval of the Project Manager or his duly appointed representative.

Priming coats of paint should not be applied until the surfaces have been inspected and preparatory work has been approved by the Project Manager or his duly appointed representative.

No consecutive coats of paint, except in the case of white, should be of the same shade. Thinners shall not be used except with the written agreement of the Project Manager.

On sheltered or unventilated horizontal surfaces on which dew may linger more protection is needed and to achieve this additional top coat of paint shall be applied.

The schedules differentiate between 'Treatment at Maker's Works' and 'Treatment at Site after Completion of Erection' but the locations at which different stages of the treatments are carried out may be modified always providing that each change is specifically agreed to by the Project Manager and the painting is finished at site to the Project Manager's satisfaction.

All paint film thickness quoted are minimum and refer to the dry film condition. All thickness shall be determined by the correct use of approved commercial paint film thickness measuring meters.

The Contractor shall ensure that precautions are taken in packing and crating to avoid damage to the protective treatment applied before shipment, during transport to the site.

Structural bolts shall be galvanized, sheradized or cadmium plated and painted as for adjacent steelwork.

All structural timber that does not require to be painted (timber joists, flooring, etc) shall be treated with two coats exterior grade approved timber preservative.

The requirements of this clause and the schedules shall be interpreted in accordance with the requirements and recommendations of BS 5493 and CP 231, 3012 and the paint manufacturer's special instructions where applicable.

Colour shall be in accordance with BS 1710 and BS 4800 or equivalent material standards.

1.22 Galvanized Work

All galvanizing shall be carried out by the hot dip process (and unless otherwise specified, shall conform in all respects with the relevant IEC specification).

Attention shall be paid to the detail of members, (in accordance with IEC specification). Adequate provision for filling venting and draining shall be made for assemblies fabricated from hollow sections. Vent holes shall be suitably plugged after galvanizing.

All surface defects in the steel, including cracks, surface laminations, laps and folds shall be removed (in accordance with IEC specification). All drilling cutting, welding, forming and final fabrications of unit members and assemblies shall be completed before the structures are galvanized. The surface of the steelwork to be galvanized shall be free from welding slag, paint, oil, grease and similar contaminants.

The coating shall be as specified in BS 720 or equivalent National standard. Structural steel items shall initially grit blasted to BS 4232, second quality (SA2.5) and the minimum average coating weight on steel sections 5 mm thick and over shall be as specified in the table below:

THICKNESS OF STEEL AVERAGE SECTION ON mm	THICKNESS OF SIZE COATING WEIGHT HT microns	MINIMUM COATING g/m ²
5	80 – 90	600
10	100 – 120	750
20	120 – 150	900

With intermediate values on a pro rata basis.

On removal from the galvanizing bath the resultant coating shall be smooth, continuous, free from gross surface imperfections such as bare spots, lumps, blisters and inclusions of flux, ash or dross.

Galvanized contact surfaces to be jointed by high strength friction grip bolts shall be roughened before assembly so that the required slip factor (defined in BS 3294. Part BS 4606 part 1 and I) is

achieved, care shall be taken to ensure that the roughening is confined to the area of the faying surface.

Bolts, nuts and washers, including general grade high strength friction grip bolts (referred to in BS 3139 and BS 4395 part 1) shall be hot dip galvanized and subsequently centrifuged (according to BS 729). Nuts shall be tapped up to 0.4 mm oversize after galvanizing and the threads oiled to permit the nuts to be finger turned on the bolt for the full depth of the nut. No lubricant, applied to the projecting threads of a galvanized high strength friction grip bolt after the bolt has been inserted through the steelwork shall be allowed to come into contact with the faying surfaces.

During off-loading and erection, nylon slings shall be used. Galvanized work which is to be stored in works on site shall be stacked so as to provide adequate ventilation to all surfaces to avoid wet storage staining (with rust).

Small areas of the galvanized coating damaged in any way shall be brought to the attention of the Project Manager who shall authorize repair by:

Cleaning the area of any weld slug and through wire brushing to give a clean surface.

The application of two coats of zinc rich paint or the application of low melting point zincalloy repair rod or powder to the damage area, which is heated to 300°C.

After fixing, bolt heads, washers and nuts shall receive two coats zinc rich paint.

1.23 Mechanical Items

All screw threads shall be of the ISO metric form and the diameters and pitch of thread for all bolts studs and nuts shall conform to the ISO Standards as stated in BS 3692 or BS 4190 or equivalent National Standard.

It is recognized that in a number of applications such as instrument, machine components and pipe, other thread forms may be used.

1.23.1 Pipe Work

All piping shall be designed, manufactured and tested in accordance with British Standards or equivalent National Standards approved by the Project Manager. In particular, pipework should meet the requirements of the following standards or their equivalents. Dimensions shall comply with Table 1 of BS 1600. The minimum wall thickness of carbon steel pipes excluding any allowance for corrosion shall be as shown in British Standards:

Diameter	Minimum Wall Thickness
0-100mm	Table 2BS1387
150-200mm	4.87mm
250-600mm	6.35mm

Drains and air vents shall be provided as required by the physical arrangement of the pipe work and shall be via valves with the drain and vent pipe work led to drain points to the approval of the Project Manager.

Screwed pipe work systems shall be provided with adequate unions to enable valves and fittings to be removed if required with minimum disturbance to the rest of the pipe system.

1.23.2 Bolts, Studs, Nuts and Washers

All bolts and nuts shall conform dimensionally to the requirements of BS 3092 or BS 4190 or equivalent National Standard.

The material of all bolts, studs and nuts for piping systems shall conform to the requirements of BS 4505 or equivalent National Standard.

The threaded portion of any bolt or stud shall not protrude more than 1.5 threads above the surface of its mating nut.

When fitted bolts are used they shall be adequately marked to ensure correct assembly.

Bolts, nuts, studs and washers in contact with sea water or used on pipe work systems containing sea water shall be of the same material as flanges etc.

The use of slotted screws shall be avoided; hexagon socket screws or recessed type heads being preferred.

1.24 Electrical Insulation

Insulating materials shall be suitably finished so as to prevent deterioration of their qualities under the specified working conditions. Account shall be taken of the IEC 60085 and IEC 60505 recommendations.

Ebonite, synthetic resin-bonded laminated material and bituminized asbestos cement-bonded panels shall be of suitable quality selected from the grades or types in the appropriate British, IEC, or approved National Standard.

All cut or machined surfaces and edges of resin-bonded laminated materials shall be cleaned and then sealed with an approved varnish as soon as possible after cutting.

Linseed oil and untreated materials of fiber, leatheroid, presspahn, asbestos or other similar hygroscopic types of materials shall not be used for insulation purposes. Untreated leatheroid and

presspahn may be used for mechanical protection of winding insulation.

Wherever practicable, instrument, apparatus and machine coil windings, including wire wound resistors, with the exception of those immersed in oil or compound, shall be thoroughly dried in a vacuum or by other approved means and shall then be insulating varnish. Varnish with a linseed oil base shall not be used.

No material of a hygroscopic nature shall be used for covering coils. Where inter-leaving between windings in coils is necessary, only the best manila paper, thoroughly dried, which permits penetration by the insulating varnish or wax, shall be used.

1.25 L.V. Circuit Protection

Fuses are not to be used for protection of circuits below 1000V phase-to-phase, (Low Voltage).

All low voltage and dc circuit protection is to be provided by moulded case, or miniature circuit breakers.

Link carriers and bases shall be of an approved manufacture and of such form and material so as to protect persons from shock and burns in normal service and maintenance. Links and fixed contacts shall be shielded to prevent inadvertent contact with live metal whilst the link is being inserted or withdrawn.

The labeling of carriers and bases shall comply with IEC 60269 Identification labels fixed to panels, boards and desks for MCBs and links shall describe their duty, voltage and rating.

1.25.1 Miniature Circuit Breakers

All miniature circuit breakers (MCBs) shall comply with IEC 60157 and be fitted with over-current releases of both the thermal and instantaneous type. All MCBs supplied on this contract shall be to short circuit category P2 of IEC 60157.

Single, two or three pole breakers may be used where appropriate and a trip of one pole shall cause a complete trip of all associated poles. In addition the rating given of MCBs supplied shall be confirmed as that appropriate to the enclosure provided.

The Contractor shall ensure satisfactory time and current grading with other associated miniature circuit breakers or MCCBs.

1.25.2 Distribution Boards and Isolators

Distribution boards shall be provided throughout the plant for local distribution of lighting, small power and air conditioning supplies. The lighting and small power circuits may use a common distribution board.

Distribution boards shall be of 1 kV A.C., 1.2 kV D.C. rating and conform to IEC 60439. All distribution boards shall be of the weatherproof enclosure type and shall be arranged so that the door or cover can be locked in the closed position.

All triple pole and neutral boards shall provide satisfactory cable entry for all cables which could be required for the number of circuit facilities provided and shall have the neutral bar drilled for the full number single phase ways.

Each distribution board supplied from a remote location shall have a load breaking/fault

making incoming isolating switch mounted adjacent to or as part of the distribution board. Each distribution board shall have removable top and bottom (undrilled) gland plates.

Each circuit in every distribution board shall be numbered and identified by means of a schedule attached to the interior of the door or cover of the board. The schedule shall be legible and durable to the Project Manager's approval.

Twenty-five percent spare ways shall be provided for future use.

1.26 Electrical Equipment, Instruments and Meters

All instruments and meters shall be fitted with glasses of low reflectivity and shall not cause pointer deflection due to electro-static charging through friction.

All indicating instruments shall be of the flush mounted pattern with dust and moisture proof cases complying with BS. 2011, Classification 00/50/04, and shall comply with BS. 89 or IEC 60051.

Unless otherwise specified, all indicating instruments shall have 95mm square cases to DIN standard or equivalent circular cases.

Instrument dials in general shall be white with black markings and should preferably be reversible where double scale instruments are specified.

Scales shall be of such material that no peeling or discoloration will take place with age under humid tropical conditions.

The movements of all instruments shall be of the dead beat type.

Instruments shall be provided with a readily accessible zero adjustments.

The mounting height of the centre of all indicating instruments shall not exceed 2000mm.

A.C. ammeters for transformer, feeder or inter connector circuits, and D.C ammeter for all load circuits except motors, shall have linear scales commencing at zero.

A.C and D.C ammeters for motor circuits shall have scales commencing at zero and with a compressed overload portion for reading of the associated minor starting current.

D.C. ammeters for the main battery circuit of D.C systems shall have scales with positive and negative ranges, labeled charge and discharge respectively.

Voltmeters for feeders and transformer circuits shall have expanded scales to display the nominal service voltage $\pm 20\%$.

Wattmeter for feeders shall have linear positive and negative reading scales to be approved.

Varmeters for all circuits shall have linear positive and negative reading scales to be approved.

Integrating metering shall be provided where indicated on the specification drawings. These meters shall be of the withdrawable flush mounted type and comply with the relevant parts of IEC 60521 and BS 5685, Class 1.0 accuracy and BS 37, Part 9. The meters shall include cyclometer dial type registers.

Approved test terminal blocks of the three-phase type shall be provided for connecting in circuit with each meter a portable testing meter.

If applicable, recording instruments shall be of an approved type, and unless otherwise specified, shall have two chart speeds of 25 mm and 50 mm per hour available for selection by means other than changing connections. They shall be complete with sufficient charts and inks for two years' working.

All instruments, meters, recorders and apparatus shall be capable of carrying their full load currents without undue heating. They shall not be damaged by the passage of fault currents within the rating of the associated switchgear through the primaries of their corresponding instrument transformers.

All instruments, motors and apparatus shall be back connected and the metal cases shall be earthed.

All voltage circuits to instruments shall be protected by a fuse in each unearthed phase of the circuit placed as close as practicable to the main connection.

All power-factor indicators in 3-phase circuits shall have the star point of their current coils brought out to a separate terminal which shall be connected to the star point of the instrument current transformer secondary windings.

All instruments and meters associated with multi-ratio CT's shall be provided with sets of scales etc. appropriate to each CT ratio. It shall be possible to replace the scales of instruments without dismantling the instruments or interfering with any tropicalization finish.

The Contractor shall provide electrical instrument and meter schedules to include, manufacturer, type, designation, current and voltage rating, accuracy class and circuit designation.

All equipment shall be colored "NEMA Standard Grey 70" unless otherwise specified by the Project Manager.

1.27 Control and Selector Switches

Control switches shall be of the three-position type with a spring return action to a central position (and without a locking feature).

Circuit breakers shall have control switches which shall be labeled open/N/close or (O/N/I and arranged to operate clockwise when closing the circuit breakers and anti-clockwise when opening them, and shall be of the pistol grip type.

Control switches of the discrepancy type shall be provided where specified. Such discrepancy control switches shall be arranged in the lines of the mimic diagram on the switchgear panels. Such switches shall include lamps and be of the manually operated pattern, spring loaded such that it is necessary to push and twist the switch past its indicating position for operation. The lamp shall be incorporated in the switch base and shall flash whenever the position of the circuit breaker is at variance with the position indicated by the control switch. Hand dressing of the control switch to the correct position shall cause the lamp to extinguish.

Selector switches shall be of the two or more position type as required, and have a stay-put action to remain in any selected position which shall be lockable (separate padlocks each with duplicate keys should be provided). Each position of the selector switches shall be suitably labeled to signify their function. The switch handle shall be of the pistol grip type to the approval of the Project Manager.

It shall not be possible at any time to operate any switchgear equipment from more than one

location simultaneously, and suitable lockable selector switches shall be provided to meet this requirement.

The contacts of all control and selector switches shall be shrouded to minimize the ingress of dust and accidental contact, and shall be amply rated for voltage and current for the circuits in which they are used.

1.28 Auxiliary Switches

Auxiliary switches shall be to approval and contacts shall have a positive wiping action when closing.

All auxiliary switches, whether in service or not in the first instance, shall be wired up to a terminal board and shall be arranged in the same sequence on similar equipment.

Auxiliary switches mechanically operated by the circuit breakers, contactors, isolators, etc. shall be to approval and contacts mounted in accessible positions clear of the operating mechanism of the circuit breaker, contactor, isolator, etc., and they shall be adequately protected against accidental electrical shock.

Auxiliary switches shall be provided to interrupt the supply of current to the trip coil of each circuit breaker and contactor immediately the breaker or contactor has opened. These auxiliary switches shall make before the main contacts, during a closing operation.

A minimum of four spare auxiliary switches, two normally open, two normally closed shall be provided for each circuit breaker, and contactors and also for isolators.

1.29 Alarm Equipment

Where an alarm system is specified, it shall consist of an initiating device, a display unit and push buttons mounted on the front of the appropriate control panel, together with a continuously rated audible warning device flasher unit and relays. The relays shall wherever possible, be mounted inside the same panel; where the number of alarms to be displayed makes this impracticable, a separate alarm relay cubicle or cubicles will be considered as an alternative.

Where it is necessary to differentiate between the urgency of alarms then various approved alarm tone devices shall be provided in this Contract. In addition and where specified an alarm beacon to the approval of the Project Manager shall be provided.

The display unit shall consist of a rectangular frame or bezel enclosing the required number of individual facias, each of which shall be preferably approximately 32mm x 25mm in size. Each fascia shall be in the form of a window inscribed with the specified legend, describing the fault condition to be indicated. Lamps shall not illuminate adjacent windows.

At least 3 spare ways shall be provided on each display unit. All unused ways in a display unit shall be fully equipped and the alarm system designed to enable these ways to be utilized at a future date.

Alarm relays shall be of a type to the approval of the Project Manager, arranged to plug into fixed bases, either singly or in groups and have positive means of retaining them securely in the service position, the bases being mounted on racks or frames which shall be hinged to allow them to be swung clear of the sides of the panel or cubicle in which they are installed in order to provide ready access.

The type of wiring used for internal connections between alarm facias and their relays and between

relays and terminal blocks, shall generally comply with these requirements with the following exceptions:-

- (i) Single-strand wire, not less than 0.85 mm in diameter may be used.

Soldered terminations will be acceptable

External connections for alarm circuits will in general be run in multi-core cables having a larger core size than that referred to above. This will necessitate special terminal blocks, if soldered terminations are used, in which case the internal and external terminations of each pair shall be joined by a removable link. Samples of the type of wire and terminal block to be used for alarm connections shall be submitted for the Project Manager's approval.

The operation of the alarm system shall be as follows:-

When an external alarm indicating contact closes the audible warning shall sound continuously and the appropriate facia shall be illuminated by a flashing light at a frequency which allows the inscription to be easily read.

An 'Accept' push-button shall be provided on or near the display unit, which when pressed, shall silence the audible signal and cause the facia to remain illuminated steadily.

The alarm circuit shall be designed to retain the indication after the re-opening of the initiating contact, requiring a separate 'Reset' push button to be pressed before the alarm is cancelled.

A 'Test' push button shall be fitted close to the 'Accept' and 'Reset' buttons, to illuminate all the facias on the associated display unit for as long as the 'Test' button is held depressed.

The operation of the 'Accept' button shall not preclude the receipt of further indications giving more audible alarm and visual indications as the result of the operation of other sets of alarm contacts.

Relays shall not be continuously energized when the alarm system is at rest.

For all alarm indication initiating device a spare set of voltage-free contacts shall be provided (this may be by the use of auxiliary relays) and connected by cable to a suitable, approved marshalling cubicle. These spare contacts will provide for the transmission of the alarm indication signals to the remote Grid Control Centre.

The Contractor shall be responsible for providing all the alarms required for the safe and efficient operation of the plant. General descriptions of alarms requirements are given in the specification and the Contractor shall include any other alarms that are necessary due to the type of equipment and design of the plant to the Project Manager's approval.

1.30 Panels, Desks, Kiosks and Cubicles

1.30.1 General Requirements

Unless otherwise specified, panels, desks and cubicles, shall be of floor-mounted and free-standing construction and be in accordance with the specified enclosure classification. All

control and instrumentation panels shall be identical in appearance and construction. Panels shall be rigidly constructed from folded sheet steel of adequate thickness to support the equipment mounted thereon, above a channel base frame to provide a toe recess. Alternatively a separate kicking plate shall be provided.

Overall height, excluding cable boxes, shall not exceed 2.5 m. operating handles and locking devices shall be located within the operating limits of 0.95m and 1.8m above floor level. All panels shall be fitted with padlocks. The minimum height for indicating instruments and meters shall be 1.5m unless otherwise specified.

All panels' desks and cubicles shall be vermin and insect proof. All cable entries to equipment shall be sealed against vermin as soon as possible after installation and connecting-up of the cables to the approval of the Project Manager.

Ventilation shall be provided for natural air circulation. All control equipment shall be designed to operate without forced ventilation.

For outdoor equipment, metal to metal joints shall not be permitted and all external bolts or screws shall be provided with blind taped where a through hole would permit the ingress of moisture. All metal surfaces shall be thoroughly cleaned and particular care taken during painting to ensure that both internally and externally a first class cover and finish is achieved. For harsh environments, all nuts, bolts and washers shall be plated.

Door sealing materials shall be provided suitable for the specified site conditions. Doors shall be fitted with handles and locks. The doors shall be capable of being opened from within the panel without the aid of a key after they have been locked from the outside. Hinges shall be of the life-off type. Seals shall be continuous or with only one joint.

The bottom and/or top of all panels shall be sealed by means of removable gasketed steel gland plates and all necessary glands shall be supplied and fitted within the Contract.

Panels shall be suitably designed to permit future extension wherever appropriate or specified without the need to dismantle the existing panels. Panels shall be "top entry" types with respect to control cabling.

Each panel shall include rear access doors and door-operated interior lamp, and be clearly labeled with the circuit titled at front and rear, with an additional label inside the panel. Panels sections accommodating equipment at voltages higher than 110 V shall be partitioned off and the voltage clearly labeled. Each relay and electronic card within panels shall be identified by labels permanently attached to the panel and adjacent to the equipment concerned. Where instruments are terminated in a plug and socket type connection both the plug and the socket shall have permanently attached identifying labels.

Instrument and control devices shall be easily accessible and capable of being removed from the panels for maintenance purposes.

For suites of panels inter-panel bus wiring shall be routed through apertures in the sides of panels and not via external multi-core cabling between the panels.

All panels, whether individually mounted or forming part of a suit, shall incorporate a common internal copper earthing bar onto which all panel earth connections shall be

made. Suitable studs of holes to the Project Manager's approval shall be left at each end of the bar for connection to the main station earthing system.

Earth connection between adjacent panels shall be achieved by extending the bar through the panel sides and not by interconnecting external cabling.

Cubicles and cubicle doors shall be rigidly constructed such that, for example, door mounted emergency trip contacts can be set so that mal-operation will not be possible due to any vibrations or impacts as may reasonably be expected under normal working conditions.

1.30.2 Indicating Lamps

All new indicators shall have a minimum continuous burning guaranteed life of 10,000 hours, at their rated voltage.

The Indicating lamps must be LEDs only and cluster LEDs for important functions subject to approval of the Project Manager.

Indicators shall be easily replaceable from the front of the panel and shall be adequately ventilated. LED indicators shall operate at not less than 20mA and red LED indicators shall be of the high brightness types.

The lamps shall be clear and shall fit into a standard form of lamp holder. The rated lamp voltage should be ten percent in excess of the auxiliary supply voltage, whether AC or DC. Alternatively, low voltage lamps with series resistors will be acceptable, however resistors shall be dimensioned to avoid damage due to heat.

The lamp glasses shall comply with BS 1376 and BS 4099 or equivalent National Standard and shall be in standard colours, red, green, blue, white and amber. The colour shall be in the glass and not an applied coating and the different coloured glasses shall not be interchangeable. Transparent synthetic materials may be used instead of glass, provided such materials have fast colours and are completely suitable for use in tropical climates.

Normally energized indicating lamps, if employed, shall in general be energized from the station LVAC supply.

Lamps and relays incorporated in alarm facia equipment shall be arranged for normal operation from the station battery, subject to the approval of the Project Manager.

Lamp test facilities shall be provided so that all lamps on one panel can be tested simultaneously by operation of a common push-button. Where alarm facias are specified, all alarm and monitoring indications (apart from circuit-breaker and disconnecter position indications) shall be incorporated in the facia.

Where specified every circuit breaker panel shall be equipped with one red and one green indicator lamp, indicating respectively circuit closed and circuit open and an amber lamp for indicating 'auto-trip'. Where specified in the lines of mimic diagrams, indicating lamps may be of the three-lamp single-aspect type.

All lamps shall be renewable from the front of panels without the use of special tools. The variety of indicating lamps provided shall be rationalized to reduce maintenance and spares requirements.

1.30.3 Anti-Condensation Heaters

All switchboards, panels, cubicles, motor control Centre and the like shall incorporate electric heaters capable of providing movement of sufficient heated air to avoid condensation. The power supply to the heaters shall be manually switched by a two pole switch with red lamp. All heaters on multi-panel equipment shall be controlled from a single point. The related equipment shall be designed to accept the resulting heat input.

Bus wiring shall be incorporated in switchboards for supplying the heaters.

1.31 Panel Wiring and Terminal Boards

1.31.1 General

All electrical equipment mounted in or on switchgear, panels, kiosks, and desks, etc. shall have readily accessible connections and shall be wired to terminal blocks for the reception of external cabling.

All wiring shall be of adequate cross-sectional area to carry prospective short-circuit currents without risk of damage to conductors, insulation or joints.

All cabling shall be of type CR or CK to BS 6231 unless the design of the plant requires the cabling to withstand more onerous operating conditions in which case cabling shall be suitable for these conditions. The minimum cross section of wire shall be 4 sq.mm for all secondary wiring associated with current transformers of nominal secondary rating of 0.5 A or greater. The size of wiring for circuits other than CT secondary wiring shall be not less than 2.5 sq. mm. Cross-sectional area, save as permitted in the specification.

The minimum strand diameter of copper or tinned copper flexible conductors shall be 0.20 mm for flexible and the minimum cross-sectional area shall be 0.5 sq. mm for all cables. For wiring within panels on circuits not directly associated with circuit breaker protection and control, and having a continuous or intermittent, load current of less than 1 amp, the use of smaller line down to 0.25 sq. mm will be permitted subject to Project Manager's Approval.

Where an overall screen is used, this shall be metallic screen or low resistance tape, with drain wire as above.

Wiring shall be supported using an insulated system which allows easy access for fault finding and facilitates the rapid installation of additional cables.

Small wiring passing between compartments which may be separated for transport shall be taken in terminal blocks mounted near the top of each compartment, separately from those for external cable connections.

Both ends of every wire shall be fitted with ferrules of insulating material complying with BS 3858 or equivalent National Standard and engraved in black. The identification numbering system used for the ferrules shall be to the approval of the Project Manager.

Where new equipment must interface with existing equipment double ferruling shall be employed if the two numbering system are not compatible.

Connections to apparatus mounted on doors, or between points subject to relative movement, shall be made in cable type CK to BS 6231, arranged so that they are subjected to torsion rather than bending.

1.31.2 Identification of Cable Cores

Where a wire or multi-core cable passes from one piece of equipment to another, e.g. from a circuit breaker to a remote control panel, the Contractor shall ensure that the identity of the wire is apparent at both ends and intermediate marshalling points by the use of ferrules, which shall permit identification of the cable in accordance with the schematic diagrams. The ferruling system to be adopted shall be a composite marking method to IEC 391 and BS 3858 as appropriate, giving functional information on the purpose of the individual conductor plus markings at both-ends.

Should the Contractors normal practice be at variance with the requirements of this clause he may submit details of the scheme proposed for consideration by the Project Manager. The Project Manager is not obliged to accept the Contractor's proposal.

Each core of multi-pair wiring shall be identified by color and terminal block identification together with an identification tracer per bundle.

Permanent identification of all terminals, wires and terminal blocks shall be provided. Each individual terminal block shall have independent terminals for incoming and outgoing cabling.

1.31.3 Terminals and Terminal Boards

Terminal Assemblies shall be of the unit form suitable for mounting on a standard assembly rail, to give the required number of ways. The units shall be spring retained on the assembly rail. Each individual terminal block shall have independent terminals and outgoing cabling.

End barriers or shields shall be provided for open sided patterns.

It shall be possible to replace any unit in an assembly without dismantling adjacent units. Moulding shall be mechanically robust and withstand the maximum possible operating temperatures and torque which may be applied to terminal screw. All live parts shall be recessed in the moulding to prevent accidental contact.

Terminals shall be of the screw clamp type for lower current rating which compress the conductor or termination between two plates by means of a captive terminal screw. Contact pressure of screw clamp terminations shall be independent of each other. For higher current ratings bolted type terminals are permitted. Current carrying parts shall be non-ferrous and plated.

All terminals for "incoming" cabling shall have testing facilities, which permit the examination of the state of the circuit without disconnecting the associated cabling. Terminal blocks for current transformer secondary shall be fitted with shorting/disconnect facilities.

Terminal blocks for voltage transformers secondaries shall be isolatable.

Terminal blocks in telemetry marshalling cubicles shall be isolatable. The means of isolation shall be fixed and give visual identification of the status of the terminal.

Not more than 1 wire shall be connected to each terminal and cross-connection facilities shall be provided where numerous cores are to be connected together.

Each terminal block, and every individual terminal shall be identified. The terminal identification number shall be included on associated schematic and wiring diagrams.

The mounting rail may only be used to provide an earth connection, when firmly bonded to the earth bar and to be approved by the Project Manager.

The Contractor shall submit samples of the terminal blocks/mounting rail assemblies together with details of his proposed cabling/termination system to the Project Manager for approval.

Adjacent terminals to which wires of different voltage, polarity or phase are connected shall be separated by a protruding insulating barrier; this requirement also applies to terminals carrying wires of the same voltage but originating from different sources.

Wires shall be grounded on the terminal boards according to their functions. Terminal blocks for connections exceeding 110V shall be fitted with insulating covers.

Terminal blocks shall be mounted not less than 150 mm from the gland plates, and spaced not less than 100 mm apart, on the side of the enclosure.

Sufficient terminals shall be provided to permit all cores on multicore cables to be terminated. Terminals for spare cores shall be numbered and be located at such position as will provide the maximum length of spare core. At least 10% spare terminals shall be provided in all cases.

The tails of multi-core cables shall be bound and routed so that each tail may be traced without difficulty to its associated cable. All spare cores shall be made off to terminals.

When two lengths of screened cable are to be connected at a terminal block (i.e. junction box) a separate terminal shall be provided to maintain screen continuity.

Should the terminal block manufacturer recommend that specific types of terminal tools are used (eg parallel sided screw/drivers) the Contractor shall provide three sets of these at each sub-station site. In addition the Contractor shall provide 8 numbers, test leads of minimum 1500 mm length which can be inserted into the test terminals of the terminal blocks, at each sub-station. The test leads shall be capable of being 'jumpered' together for multi-instrument use.

The use of pre-formed factory tested cable connections to field mounted marshalling boxes shall be to the Project Manager's approval.

1.32 Cable Boxes and Glands

Electrical equipment supplied under this contract shall be fitted with all necessary cable boxes and glands which shall be complete with all required fittings. Boxes shall be of adequate proportions to

accommodate all cable fittings, including stress cones or other means of cable insulation grading, and designed in such a manner that they can be opened for inspection where appropriate without disturbing the gland plate of incoming cable.

Glands for termination of cables to outdoor equipment or indoor areas liable to water spray, hosing or flooding shall incorporate provision for sealing against ingress of moisture or dust, and shall comply with the requirements of BS 6121 for sealing.

Removable gasketed steel gland plates shall be provided for multi-core cables and shall be supported from the sides of the enclosures, as near to the floor or roof as possible while allowing adequate space both above and below the plate for manipulation of the cable and gland. Gland plates for marshalling boxes shall be in the form of removable gasketed steel plate, forming part of the underside of the box.

The terminals for 3 phase cables shall be clearly marked with the phase colours (approved designations) to enable the cables to be terminated in the correct sequence.

Filling and venting plugs where required, shall be positioned so as to avoid the possibility of air being trapped internally and adequate arrangements shall be made for expansion of compound etc. There shall be no possibility of oil entering the cable box from an associated oil filled compartment. Cable sealing ends shall be arranged to project at least 25mm above the gland plate to avoid moisture collecting in the crutch.

Any chamber which is to be compound filled shall be clean and dry and at such a temperature before filling that the compound does not solidify during the filling process. Filling orifices shall be sufficiently large to permit easy and rapid filling.

All cable boxes shall be designed to withstand the high voltage D.C. cable tests prescribed in BS 6346, BS 6480 and IEC 60055 as appropriate.

If applicable, cable boxes for paper-insulated cables shall be complete with universal tapered brass glands (insulated from the box in an approved manner and including an island layer for testing purposes).

Even single core cables are used, particularly for currents in excess of 500 A, adequate steps must be taken to minimize the effects of eddy currents in the gland and bushing-mounted plate.

Cable glands for extruded solid dielectric insulated cables (PVC, EPR, and XLPE) shall be of the compression type and as specified in BS 6121.

Approved glands shall be used on MICC cables

Glands for armored or screened cables above 240 sqmm shall be provided with an integral heavy duty earthing lug capable of carrying the full earth fault current for a period not less than 1 second without deterioration.

Cable lugs and terminations for the receipt of all power control and instrumentation cable cores shall be provided.

Cable boxes for the termination of elastomeric cables up in 33 kV nominal service voltage shall be designed and dimensioned to provide adequate insulation in air for cables. Clearance and creepage distances shall be adequate to withstand the specified alternating current voltages and impulse

voltages for service under the prevailing site conditions. The performance is to be met without the use of insulating 'boots' shrouds or any other material fitted over or between the cable terminations apart from permanently fitted barriers forming part of the switchgear or cable box.

Means shall be provided for preventing accumulation of dirt, dust, moisture, vermin or insects such as to maintain the anticipated life of the equipment. The Contractor shall ascertain the means by which elastomeric cables are to be terminated and shall provide such information or instructions as necessary to any other contractor or sub-contractor or to ensure compliance with this clause.

The cable crutch within a cable box or equipment panel shall be protected by the use of a heat-shrink plastic 'udder' placed over the conductors and crutch.

1.33 Joints and Gaskets

All joint faces are to be flat and parallel to the approval of the Project Manager and arranged to prevent the ingress of water or leakage of oil with a minimum of gasket surface exposed to the action of oil or air.

Oil-resisting synthetic rubber gaskets are not permissible, unless the degree of compression is accurately controlled. For gaskets of cork or similar, oil resisting synthetic rubber may be used as a bonding medium. No joints are allowed in gaskets.

1.34 Junction, Termination Marshalling Boxes, Operating Cubicles etc

All junctions, termination and marshalling boxes shall be of substantial sheet steel construction, having enclosure classification in accordance with the specification and fitted with external fixing lugs and finished in accordance with this Specification for cleaning, painting and finishing.

The boxes shall allow ample room for wiring, with particular regard to the deployment of wires from the point of entry.

Outdoor boxes shall have internal anti-condensation heaters and stay bars fitted to doors. Indoor boxes shall be designed such that any condensed water cannot affect the insulation of the terminal boards or cables. No cables shall be terminated into the top of outdoor boxes unless specifically approved by the Project Manager.

Each box shall be complete with suitably inscribed identification labels.

Any outdoor boxes, cubicles etc containing instruments or meters shall have glazing suitable to permit the visual examination of these.

Covers shall be arranged for padlocking and padlocks with keys shall be supplied. Cast iron boxes shall have bolted lids requiring the use of special keys or spanners for removal.

All boxes shall be provided with adequate earthing bars and terminals.

Notwithstanding information supplied by the Project Manager, the Contractor shall, as each box is completed or at intervals as requested by the Project Manager, supply to the Project Manager copies of accurate termination or destination charts showing the as-fitted arrangement of cables and cores in each box. The Contractor shall, following the Project Manager's approval, fit one plastic laminated copy of the appropriate chart to the interior of each box.

1.35 Conduit and Accessories

Conduit, accessories and trunking installation shall comply with the latest issue of the Institution of Electrical Engineers Regulations for the Electrical Equipment of Buildings, unless otherwise approved by the Project Manager. In addition installation shall also comply with all local electricity regulations.

Unless otherwise approved, all conduit and conduit fittings shall be galvanized, of heavy gauge steel, screwed, solid drawn or weld type complying with IEC 60423 and IEC 60614.

No conduit smaller than 19 mm outside diameter shall be used.

Standard circular boxes or machined face heavy-duty steel adaptable boxes with machined heavy type lids shall be used throughout. For outdoor mounting all boxes shall be galvanized, weatherproof and fitted with external fixing lugs.

Conduit terminations shall be fitted with brass bushes.

The use of running threads, solid elbows and solid tees will not be permitted.

Conduit ends shall be carefully reamed to remove burrs. Draw-in boxes shall be provided at intervals not exceeding 10m in straight-through runs.

Conduit runs shall be in either the vertical or horizontal direction unless otherwise approved and shall be arranged to minimize accumulation of moisture. Provision for drainage shall be made at the lowest points of each run.

Conduits shall be supported on heavy galvanized spacer saddles so as to stand off at least 6 mm from the fixing surface.

Provision shall be made for the support of internal conductors in instances where the length of the vertical run exceeds 5m.

All conduits run in any circuit are to be completed before any cables are pulled in.

Flexible metallic conduit shall be used where relative movement is required between the conduit and connected apparatus, and a separate copper connection provided to maintain earth continuity.

The maximum number of cables in any conduit shall be in accordance with the latest issue of the IEE Regulations for the Electrical Equipment of Buildings.

1.36 Trunking

Steel trunking etc. may be used for running numbers of insulated cables or wires in certain positions to the approval of the Project Manager. The trunking thickness shall not be less than 1.2 mm.

1.37 Push-Buttons and Separately Mounted Push-Button Stations

Push-buttons shall be shrouded or well recessed in their housings in such a way as to minimize the risk of inadvertent operation. The colour of push-buttons shall be black unless otherwise required by the Project Manager.

Push-button stations supplied as loose equipment shall be of the metal clad weatherproof type suitable for wall or bracket mounting. Each push-button station shall be clearly labeled showing the duty or drive to which it is applicable.

1.38 Drawings, Diagrams and Calculations

1.38.1 General

The term “drawing” shall also include diagrams, schedules, performance curves, and calculations etc., required for the comprehensive design of the works. The Contractor shall be responsible for the provision of all drawings required for the various stages of the contract. All drawings, apart from workshop drawings, shall be submitted to the Project Manager for his recommendation and final approval by the concerned committee of BREB, in accordance with an approved program. The Contractor shall ensure that drawings are submitted for approval in good time such that they may be approved within the specified period prior to the manufacture or construction commencing. Further adequate time must be allowed by the Contractor to permit any comments made by the Project Manager to be incorporated. Any works performed prior to approval of drawings by the concerned committee of BREB will be entirely at the Contractor’s own risk including any delays that may result from modifications being found to be necessary by the Project Manager.

The Contractor shall be fully responsible for obtaining any drawing or data of existing plant and installations that he requires in order to carry out the works, and shall also be responsible for verifying that any drawings of existing plant and installations are accurate. The Contractor shall provide suitable drafting and other staff on site that he requires investigating and producing any drawings that he requires of existing equipment and installations in order to carry out the works. Any cost associated with these requirements is deemed to be included in the contract price.

Where existing installations have been modified or extended the Contractor shall provide complete new sets of drawings. In this respect the Contractor shall provide drawings detailing both the existing and new works and shall not limit the scope of the drawings to the new works only.

5 (Five) sets of As-built drawings together with operation and maintenance manual of the equipment installed shall be submitted.

1.38.2 Format

Drawings are to be submitted for approval on paper prints, folded to A4 size with the project title block and drawing numbers fully visible.

All drawings are to be submitted on “A” series paper to ISO/5457. The maximum size of drawings shall be A1 except for site survey and layout drawings which may be submitted as A0 size sheets, if necessary, to accommodate details on a scale of 1:100. Single line diagrams and schematic drawings shall preferably be on a maximum sheet size of A2. All dimensional drawings shall be to the following scales and fully detailed.

1:1, 1:2, 1:5, 1:10 and factors of 10 thereof.