

THE ISLAMIC REPUBLIC OF PAKISTAN

DETAILED DESIGN STUDY

ON

WEST WHARF

THERMAL POWER PLANT PROJECT

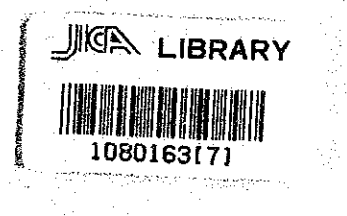
FINAL REPORT-II

LOT IIB (VOLUME 1)

JANUARY 1990

JAPAN INTERNATIONAL COOPERATION AGENCY

MPN
CR(3)
90-7(1/2)



THE ISLAMIC REPUBLIC OF PAKISTAN

DETAILED DESIGN STUDY

ON

WEST WHARF

THERMAL POWER PLANT PROJECT

FINAL REPORT-II

LOT IIB (VOLUME 1)

20648

JANUARY 1990

JAPAN INTERNATIONAL COOPERATION AGENCY

国際協力事業団

20644

KARACHI ELECTRIC POWER SUPPLY CORPORATION LTD.

WEST WHARF THERMAL POWER STATION UNITS 1 AND 2

LOT I: POWER PLANT FACILITIES

SUMMARY OF CONTENTS

LOT IIB VOL 1-1

SUMMARY OF CONTENTS

LOT I: POWER PLANT FACILITIES

	Symbol Mark
VOLUME 1	
SECTION I : INSTRUCTIONS TO TENDERERS	IT
SECTION II : TENDER AND APPENDICES	FTA, etc.
SECTION III : GENERAL CONDITIONS OF CONTRACT	CC
SECTION IV : CONDITIONS OF PARTICULAR APPLICATIONS	PA
VOLUME 2 TENDERER'S DATA SHEETS	
SECTION I : POWER PLANT UNIT	DU
SECTION II : STEAM GENERATOR AND AUXILIARY EQUIPMENT	DB
SECTION III : STEAM TURBINE AND AUXILIARY EQUIPMENT	DT
SECTION IV : COMMON AUXILIARY EQUIPMENT	DC, DCA
SECTION V : GENERATOR AND ELECTRICAL EQUIPMENT	DE, DEA
SECTION VI : PLANT COMPUTER SYSTEM	DP
SECTION VII : SCHEDULE OF CONTRACTOR'S REPRESENTATIVES, MANUFACTURER'S SPECIALISTS, ERECTION SPECIALISTS, TECHNICIANS, ERECTION WORKERS AND LABOURS, AND TECHNICAL ADVISORS FOR POWER PLANT EQUIPMENT	SC
SECTION VIII : ERECTION EQUIPMENT AND TOOL LIST	ET
VOLUME 3 TECHNICAL SPECIFICATIONS	
PART I : TECHNICAL GENERAL CONDITIONS	
SECTION I : TECHNICAL GENERAL CONDITIONS	TC
SECTION II : DESIGN STANDARDS	DS

Symbol
Mark

VOLUME 4

PART II : POWER PLANT EQUIPMENT

SECTION I	: GENERAL SPECIFICATIONS	GL
SECTION II	: STEAM GENERATOR AND AUXILIARY EQUIPMENT	B
SECTION III	: TURBINE AND AUXILIARY EQUIPMENT	T
SECTION IV	: COMMON AUXILIARY EQUIPMENT	C
SECTION V	: GENERATOR AND ELECTRICAL EQUIPMENT	E
SECTION VI	: PLANT COMPUTER SYSTEM	P

VOLUME 5

PART III : ARCHITECTURAL, STRUCTURAL AND CIVIL WORKS

SECTION I	: GENERAL SPECIFICATIONS	GS
SECTION II	: TECHNICAL SPECIFICATIONS	TS

VOLUME 6

DRAWINGS FOR TENDERING

KARACHI ELECTRIC POWER SUPPLY CORPORATION LTD.

WEST WHARF THERMAL POWER STATION UNITS 1 AND 2

LOT IIA: SUBSTATIONS AND RELATED FACILITIES

SUMMARY OF CONTENTS

SUMMARY OF CONTENTS

LOT IIA: SUBSTATIONS AND RELATED FACILITIES

Symbol
Mark

VOLUME 1

SECTION I	:	INSTRUCTIONS TO TENDERERS	IT
SECTION II	:	TENDER AND APPENDICES	FT, DE
SECTION III	:	GENERAL CONDITIONS OF CONTRACT	CC
SECTION IV	:	CONDITIONS OF PARTICULAR APPLICATIONS	PA

VOLUME 2

PART I	:	TECHNICAL GENERAL CONDITIONS	TC
PART II : SUBSTATION AND RELATED FACILITIES			
SECTION I	:	SUBSTATION AND GRIDSTATION FACILITIES	ES
SECTION II	:	220 kv UNDER GROUND CABLES	UG
PART III : ARCHITECTURAL AND CIVIL WORKS			
SECTION I	:	GENERAL SPECIFICATIONS	GS
SECTION II	:	TECHNICAL SPECIFICATIONS	TS

VOLUME 3 DRAWINGS FOR TENDERING

KARACHI ELECTRIC POWER SUPPLY CORPORATION LTD.

WEST WHARF THERMAL POWER STATION UNITS 1 AND 2

LOT IIB: TRANSMISSION LINE AND RELATED FACILITIES

SUMMARY OF CONTENTS

0

0

9-1

SUMMARY OF CONTENTS

LOT IIB: TRANSMISSION LINE AND RELATED FACILITIES

Symbol
Mark

VOLUME 1

SECTION I	: INSTRUCTION TO TENDERERS	IT
SECTION II	: TENDER AND APPENDICES	FTA,DJ,etc.
SECTION III	: GENERAL CONDITIONS OF CONTRACT	CC
SECTION IV	: CONDITIONS OF PARTICULAR APPLICATIONS	PA

VOLUME 2

SECTION I	: TECHNICAL GENERAL CONDITIONS	TC
SECTION II	: TECHNICAL SPECIFICATIONS	TR
SECTION III	: DRAWINGS FOR TENDERING	

1-7

KARACHI ELECTRIC POWER SUPPLY CORPORATION LTD.
WEST WHARF THERMAL POWER STATION UNITS 1 AND 2

LOT III: DISMANTLING WORKS

SUMMARY OF CONTENTS

SUMMARY OF CONTENTS

LOT III: DISMANTLING WORKS

	Symbol Mark
SECTION I : INSTRUCTIONS TO TENDERERS	A0, A1
SECTION II : TENDER FORM AND EXHIBITS	A2
SECTION III : GENERAL CONDITIONS OF CONTRACT	A3
SECTION IV : SCHEDULE OF PRICES	A4
SECTION V : TECHNICAL GENERAL CONDITIONS	TC
SECTION VI : TECHNICAL SPECIFICATION FOR MECHANICAL AND ELECTRICAL PART	TS
SECTION VII : TECHNICAL SPECIFICATION FOR CIVIL AND ARCHITECTURE	TA
SECTION VIII : DRAWINGS FOR TENDERING	

8-1

VOLUME 1

SECTION I

INSTRUCTIONS TO TENDERERS

01-1

SECTION I: INSTRUCTIONS TO TENDERERS

	PAGE
IT.1 INVITATION	IT-1
IT.1.1 INTRODUCTION	IT-1
IT.1.2 INVITATION FOR TENDERS	IT-2
IT.1.3 AVAILABILITY OF TENDERING DOCUMENTS	IT-3
IT.2 SOURCE OF FUNDS (TENTATIVE)	IT-8
IT.3 QUALIFICATION OF TENDERERS	IT-10
IT.4 ALTERNATIVE TENDER	IT-12
IT.4.1 ALTERNATIVE TENDER	IT-12
IT.4.2 DETAILS OF OFFER AND DEPARTURES FROM THE SPECIFICATIONS	IT-12
IT.5 TENDER BOND	IT-14
IT.6 TENDERING PERIOD	IT-15
IT.6.1 TENDER OPENING	IT-16
IT.7 PRICES	IT-16
IT.7.1 EQUIPMENT/MATERIAL AND TRANSPORTATION	IT-16
IT.7.2 INSURANCE	IT-19
IT.7.3 UNIT RATE FOR CIVIL WORKS	IT-20
IT.8 PROGRESS SCHEDULE	IT-22
IT.9 PRELIMINARY EXAMINATION OF TENDERS	IT-23
IT.10 CONTRACT	IT-25
IT.10.1 CONTRACT DOCUMENTS	IT-25
IT.10.2 CURRENCY CONVERSION RATES	IT-27
IT.11 EVALUATION CRITERIA AND COMPARISON OF TENDERS	IT-27
IT.12 ACCEPTANCE OF TENDERS	IT-28

SECTION I. INSTRUCTIONS TO TENDERERS

IT.1. INVITATION

IT.1.1 INTRODUCTION

The Karachi Electric Supply Corporation Limited, hereafter referred to as KESC or the Owner, invites experienced firms to submit Tenders for design, manufactures, supply, delivery, storage at the site, erection, field tests and commissioning, equipment and material for two circuits of 220 kV transmission line of approximate 24 km length, including two circuits of approximate 1 km 132 kV line on composite towers.

The said overhead transmission lines starts from the No. 1 tower, which will be constructed near the Fishery Harbour in Karachi City, where the No. 1 tower of the 66 kV transmission line exists, and terminates at the Baldia Grid Station.

The route of the transmission line(s) extends from the No. 1 tower via the coastal route up to near the Mauripur Grid Station. It then travels along the periphery of the Pakistan Air Force Base and terminates at the Baldia Grid Station.

The No. 1 through No. 4 towers, composit towers, shall be provided the said 132 kV lines.

These Instructions to Tenderers are intended to provide guidance in the preparation of Tenders. However, failure to comply with these instructions may render the Tender nonresponsive and liable to be rejected, unless otherwise stated.

The periods named in these Instructions to Tenderers shall be consecutive calendar days, except that, if a due date falls on a local holiday, the due date will be the next working day.

IT.1.2 INVITATION FOR TENDERS

The final Tender (see Clause IT.1.3, (3)) will be received via registered mail, or delivered personally by local time on or before _____ to the following address of the Owner:

The Karachi Electric Supply Corporation Ltd.

Aimai House

Abdullah Haroon Road,

P.O. Box No. 7197,

Karachi-3, Pakistan.

Attention: Project Engineer,

West Wharf Thermal Power Station Project

Units 1 and 2

One (1) original and two (2) identical copies of the final Tender shall be delivered by the Tenderer to the Owner. One (1) copy to the Engineer by hand or mail before Tender-opening, at the following address and Tender submitted shall be enclosed in a sealed envelope clearly marked as follows:

SEALED TENDER FOR EQUIPMENT, MATERIAL AND SERVICES 200 MW each
West Wharf Thermal Power Station Units 1 and 2 for the Karachi
Electric Supply Corporation Ltd.

NOT TO BE OPENED BEFORE A.M. -----

Package Number _____ of _____

Submitted by _____

Name and Address
of
The Engineer

If a Tender is sent by registered mail, the inner sealed envelope shall be enclosed in an outer envelope suitable for mailing.

IT.1.3 AVAILABILITY OF TENDERING DOCUMENTS

(1) Purchase of Tendering Documents

A complete package of Tendering Documents for this Contract consisting of three (3) sets of two (2) volumes each, may be obtained from Owner's Office upon payment of Rs.7,500.00.

One (1) set or more if required additionally can be obtained upon payment of Rs.1,500.00 for each set.

(2) Tender Documents

Each of the set of Tendering Documents will consist of the following volumes:

VOLUME 1

Section I - Instruction to Tenderer

Section II - Tender and Appendices

7/1-1

Appendices

Form of Tender

Appendix A - Schedule of Prices

Appendix B - Form of Tender Bond

Appendix C - Special Stipulations

Appendix D - Receipt of Addenda

Appendix E - List for Goods Imported from Outside of
Eligible Source Countries

Appendix F - Delivery and Construction Schedule

Appendix G - Departures from or Qualifications to the
Tender Documents (as required)

Appendix H - Management Procedures

Appendix I - Tenderer's Data Sheets

Appendix J - Mandatory and Recommended Spare Parts

Section III - General Conditions of Contract

Exhibits

A Form of Contract Agreement

B Form of Performance Bond

C-1 Undertaking by Contractor for Issuance of
Provisional Taking Over

C-2 Provisional Taking Over

D Affidavit of Contractor

E Final Completion Certificate

F Release of Lien

G Form of Bank Guarantee for Advance Payment

Section IV - Particular Applications

VOLUME 2

Section V - Technical General Conditions

Section VI - Technical Specifications

Section VII - Drawings for Tendering

(3) Tender Requirements

In preparing the Tenders, the Tenderers shall observe the following requirements:

- Tenders shall be prepared on the prescribed Form of Tender, Schedules, Data Sheets, Tenderer's Qualification informations and Tender Bond without any alterations. All entries on the ORIGINAL set shall be typewritten or in clearly legible BLOCK CAPITALS. All entries in the Tender Form Schedules, Data Sheets, Tender's Qualifications and Tender Bond shall be in English language. SI or metric unit system shall be used in the Data Sheets. The ORIGINAL shall be signed by an authorized person in the space provided therefor. The COPIES shall be reproduced from the ORIGINAL.

The final Tender as submitted by the Tenderer to the Owner shall consist of:

- (a) One (1) original proposal of the Volumes 1 to 2 each page duly stamped and initialled and two copies of the completed-sheets volumes as described above.
- (b) One (1) copy of each item duly completed to the Engineer.
- (c) A copy of the Tender Bond or certified cheque attached

9/-1

to each copy of the Tender, alongwith the original.

- (d) A copy of power of attorney, if Tender Form is executed by a person other than President, partner or owner of Tenderer's company, attached to copy of Tender, alongwith the original.

In the event of a Tender being submitted by a consortium, one member of the consortium shall be designated as the Coordinator or leader and this member shall be the point of contact for the Owner/Engineer. All members of the Consortium shall duly execute the Contract if the Consortium is the successful Tenderer.

In order to minimize coordination and communication problems during the Tender preparation and evaluation periods, the Tenderer is cautioned to observe the following instructions. Failure to comply may result in rejection of the Tender except stated otherwise.

- (a) All Specification Data Sheets must be typed/hand-written for each item called for. If, for the Tenderer's equipment, a particular item is not applicable or required, the letters NA (not applicable) or NR (not required) shall be typed in the space provided.
- (b) Tenderer must state any deviation from material or other standards specified. In the case American/BS material standards called for in the technical

Specifications are required to be filled in by the Tenderer, comparable European, Japanese standards or other national standards may be cited by the Tenderer in filling the technical Specifications Data Sheets. A separate list of proposed standards shall then be attached to the Tender indicating the appropriate standards proposed by the Tenderer, stating in each case the comparable standards specified.

(c) Any explanation desired by the Tenderer regarding the meaning or interpretation of the Tendering Documents must be requested in writing and addressed to the office of the Owner with copies to Engineer. If any explanation or interpretation is necessary, it will be issued in the form of a numbered Addendum which will formally supplement or revise the Tendering Documents and be issued to all Tenderer's. Any written request must be sent early enough, at least four (4) weeks before Tender due date, to allow sufficient time for the Addendum to reach all Tenderers before submission of their Tenders. The receipt of every addendum issued during the bidding period must be acknowledged in the space provided in the tender form and also by letter or cable received before the Tender due time. Oral explanations or instructions given during the Tendering period will not be binding.

(4) Tenderer will be himself responsible for ensuring that his

Tender is received in accordance with the instructions stated in. A late Tender will not be considered even if it becomes late as a result of circumstances beyond the Tenderer's control.

IT.2. SOURCE OF FUNDS (TENTATIVE)

The financing source for this project has not been decided yet.

Therefore, this clause will be finalized after a favorable funding arrangement has been settled.

This clause will be incorporated, together with the necessary instructions for applying the fund for the project, by considering relevant regulations and instructions based upon the particulars related to the funding agency.

IT.2. SOURCE OF FUNDS (TENTATIVE)

(To be filled in at a later date)

etc /

IT.2. SOURCE OF FUNDS (TENTATIVE)

(To be filled in at a later date)

(End of clause)

IT.3. QUALIFICATION OF TENDERERS

- (1) Tenders are only invited from firms (individual) or joint-venture) who are prepared to submit complete and comprehensive tenders for the whole of the supply, erection and other works included in these documents. Tenderers must have previously successfully completed contracts of similar magnitude and complexity.

Tenderers must also prove and provide evidence to the fact that they have adequate administration, technical and site staff to complete the project by the required dates in accordance with the Tender Documents. Documentary evidence of tenderers experience on previous similar contracts must accompany the Tender.

Tenderers shall also submit proof of their financial capacity to undertake the contract.

- (2) Tenderer and Manufacturers shall have recognized experience in the execution of projects of similar characteristics to the work specified and the plant in the project shall have been put in successful and continuous operation for at least five (5) years in the tropical zone countries in order to demonstrate thoroughly their dependability and suitability for this type of transmission line.

All equipment and materials shall be manufactured by companies which have at least ten (10) years previous experience in the design and manufacture of equipment and/or material of comparative type or more capacity and operating conditions, unless specified otherwise in the Technical Specification.

- (3) Any tender not complying with the above items (1) and (2) shall be rejected and not evaluated.
- (4) The designer/manufacturer/erector/civil contractor being a consortium/joint venture shall arrange its internal agreement to execute the work. Such evidence shall be submitted with the Tender.
- (5) The Tenderer/manufacturer shall have a "Quality Assurance" organization and programme to ensure that appropriate standards of equipment reliability are attained.

Such organization and programme shall be submitted with the Tenders.

- (6) If any portion of the Works or equipment is to be supplied or imported from the countries other than Tenderer's/manufacturer's country, the Tenderer/manufacturer shall submit with his Tender the list of such equipment or parts, country of origin and their price included in his Tender.
- (7) The Tenderer, shall be able to provide, technical services in Pakistan for supervisors and servicemen required by the specifications and the supporting documents in this regard be included in the Tender.
- (8) The above stated requirement are a minimum and the Owner reserves the right to request the submittal of additional information (if required).
- (9) The Owner reserves the right to reject the Proposal of any Tenderer without assigning any reasons.
- (10) The Tenderer/manufacturer shall not provide equipment/ material and other facilities which have some outstanding claims from some other clients.
- (11) All qualification and information asked for shall be completed and forwarded with the Tender.

IT.4. ALTERNATIVE TENDER

IT.4.1 ALTERNATIVE TENDERS

Each Tenderer must submit a Tender (called "Base Tender") exactly in accordance with the Tender Documents. At the Tenderer's option,

alternative Tender(s) may be submitted for equipment which will give the same or better guaranteed performance than the equipment specified in the Base Tender, at the same or reduced costs.

If the Tenderer elects to submit alternative Tender(s), complete information shall be given on such alternative equipment including all technical specification data sheets and tender forms in the pricing section duly completed.

Alternative Tender(s) will probably have auxiliary requirements differing from the Base Tender. However, in selecting auxiliaries for alternative Tender(s), design margins shall not be less than those specified for the Base Tender.

IT.4.2 DETAILS OF OFFER AND DEPARTURES FROM THE SPECIFICATIONS

If the Tenderer wishes to vary or amend parts of the Specification as an alternative, he shall complete the corresponding Schedule of "Appendix G - Departures from or Qualifications to the Tender Documents Associated with Alternative Tender" - as provided herein and he must refer to the Part, Clause and Section of the Specifications which the Tender proposes to vary or amend. In such case the Tenderer shall provide a statement of his reasons for proposing such alternatives, modifications or qualifications.

Notwithstanding any description, drawings, or illustrations which may be submitted with the Tender, only those departures or variations as listed will be considered and apart from these it will be deemed that the Tenderer complies entirely with the

requirements of the Specifications.

IT.5. TENDER BOND

- (a) The Tenderer must accompany his Tender with a Tender Bond (see Exhibit-A) or certified cheque drawn on a bank of international repute payable to the order of the Owner, in an amount equal to two (2) percent of the Tender's firm bid price as mentioned in Appendix-B Form of Tender Bond.
- (b) The Tender Bond or certified cheque will be acceptable in the currency of the country of the Owner or in the currency of the country in which the Tender originates.
- (c) The Tender Bond or certified cheque of all unsuccessful Tenderer will be returned after the issuance of the award of Contract to a successful Tenderer, within 195 days from the Tender opening date.
- (d) Each successful Tenderer shall be required to keep his tender bond or certified cheque valid until he activates his Performance Bond.
- (e) Should a successful Tenderer fails or refuses to execute final Contracts and/or to furnish a Performance Bond satisfactory to the Owner within forty-five (45) days after execution of the Contract the Tenderer will be considered to have abandoned his Tender and the amount of the Tender Bond or certified cheque delivered with the Tender shall thereupon be due and owing to the Owner as liquidated damages and shall be encashed for such

failure or refusal. The Owner may thereupon award the Contract to any other Tenderer. In addition, the Tenderer will be blacklisted by the Owner. The term "successful Tenderer" shall then be deemed to mean the Tenderer whose Tenderer is thereafter accepted.

- (f) A bond of a foreign bank shall be counter-guaranteed by a Scheduled Bank of Pakistan.
- (g) If alternative Tender(s) are submitted, the Tender Bond must be for the Tender of highest value.
- (h) Awards will be made within 195 days after Tender opening date. However, upon request by the Owner to extend the validity period, Tenderer may extend the validity of the offer without changing of the offered price.
- (i) Should a Tenderer withdraw his Tender or declare it invalid within 195 days after the Tender-opening, the Tenderer will be considered to have abandoned his Tender and the amount of the Tender Bonds or certified cheques delivered with the Tender shall thereupon be due and owing to the Owner as liquidated damages.

IT.6. TENDERING PERIOD

The Tendering period will be three (3) months.

Tenderer are responsible for despatching their Tenders in such time as to allow ample margin for timely delivery personally or by

95-1

registered mail. No Tender will be received after Tender due date and time, regardless of the cause of delay. Any Tender modification sent by cable or telex will not be accepted unless written confirmation, executed by the same authorized person as in the original Tender, is received prior to the Tender due time.

IT.6.1 TENDER OPENING

All Tenders will be opened publicly by the Owner at the date and time at Karachi address given in Clause IT.1 above. The amounts of each Tender will be read aloud and recorded.

IT.7. PRICES

IT.7.1 EQUIPMENT/MATERIAL AND TRANSPORTATION

(1) Material/Equipment

The Tenderer shall quote firm equipment and material prices on the basis of F.O.B. port of export in column (a) of Schedule of Prices Appendix A such prices shall include the followings:

- (a) Design, manufacture, factory testing, export packing, and all shipping costs incurred in placing the equipment on board the vessel.
- (b) Provision of clear on board bills of lading.
- (c) Responsibility for any loss or damage until the equipment and materials have been placed on board the vessel.
- (d) The cost of export taxes, fees or charges levied on

exporting goods in the country of origin.

- (e) Certificate of origin, consular invoices (if required) or any other documents issued in the country of shipment.

(2) Marine Transportation

The Tenderer shall quote maximum or ceiling price(s) for marine transportation from port of shipment to the port in Pakistan, in Appendix A, Column (b). Such prices shall include all marine transportation costs for ocean freight, heavy lift charges incurred by the vessel, fees, other charges, etc. including supervision and responsibility for any loss or damage while unloading, storing and trimming all major equipment on board the inland carrier.

It is understood that in the event that marine transportation costs are less than the ceiling prices quoted by the Tenderer, any savings therefrom shall accrue to the Owner. Any marine transportation costs in excess of those quoted shall be borne by the Contractor. Such saving or excess in marine transportation costs shall be on the basis of all equipment and material as a whole and not on the basis of each item.

(3) Inland Transportation

Inland transportation from the Port of Karachi (Pakistan) to the Project storage area. All Plant equipment and materials shall be the responsibility of the Contractor and all charges occurring therefrom including fees and charges for loading unloading, clearing and forwarding expenses shall be borne by

800-1

the Contractor.

Loading and transportation from the project storage area and unloading at Site, issue of all receiving and damaged reports, storage and subsequent handling of the Plant equipment and materials shall be the responsibility of the Contractor.

(4) Indigenous Equipment and Material

The quoted prices for the local materials should include all costs, including transportation, loading, unloading, overheads and all duties and taxes except reimbursible charges, such as, excise duty, sales taxes and surcharges if any leviable on the finished goods and octroi charges, which shall be reimbursed to the Contractor on the basis of actual costs and submittal of original receipts and documents.

(5) Erection and Commissioning

The Tenderer shall also quote price(s) for installation and commissioning of the Plant equipment and materials at the Project Site. Such prices shall include unloading at site, handling to designated point of site, storage, checking and verifying all shipments received against shipping documents, submission of receiving reports and damage reports (when applicable), handling from site, storage to point of final installation, installation and erection including all construction, inspection, training of Owner, personnel at Site, initial performance tests, and responsibility for operation and maintenance of equipment until acceptance by the

Owner. The cost and local transportation of any indigenous equipment and material and insurance for the transportation shall also be included under this category. All other charges not specifically mentioned herein but necessary for the completion of the Works shall also be included under this category.

(6) Spare Parts

The Tenderer shall also quote prices for mandatory and recommended spare parts in accordance with the instructions given in Appendix J hereof.

All prices quoted shall be firm during the entire period of execution of Contract and no escalation on any account will be allowed.

IT.7.2 INSURANCE

The Tenderer shall quote the price(s) for insurance cover from Ex-works to the Site for all equipment and material including erection/commissioning for the Project, and responsibility for all loss or damages while loading, unloading, storing, and trimming on board or on inland carrier. The insurance cover shall be taken from National Insurance Corporation of Pakistan or a Japanese insurance company, and shall obtain prior approval from the Owner after the Contract signing for use of the Company.

Insurance cover shall be obtained by Contractor for the equipment, material and personnels loss or damages during the erection/

commissioning activities.

Marine insurance shall be quoted in the column (c) and other insurances shall be included in the respective column of the Appendix A.

IT.7.3 UNIT RATE FOR CIVIL WORKS

Unit rate of each job item for Civil Works in the Schedule of Prices shall include the all necessary costs required to perform and complete the work as listed below, but not limited to the followings.

- (1) Direct cost
 - . Main, subsidiary and consumable materials equipment
 - . Labor cost
 - . Rent and purchase of constructional equipment and instrument including assembling, disassembling and transportation cost of the equipment
 - . Transportation fees and expenses for various materials and equipment including ocean freight
 - . Fuel expenses
 - . Royalty
 - . Cost of material and labor for temporary work
- (2) Common cost
 - . Cost of material and labor for temporary

facilities

- . Cost of Safety equipment and facility
- . Rent of area for the material storage, constructional equipment and temporary facilities etc.
- . Cost of personnel expence related to safety
- . Expenses of common constructional equipment

(3) Site administration cost

- . Site personnel Expense
- . Welfare expense
- . Insurance for employee's accident
- . Other expenses such as communication expense, social expense and others

(4) General administration cost

- . Business expenses of the main and branch offices

(5) Insurance

- . Legal insurance expense in accordance with the laws
- . Insurance for property damage under construction
- . Insurance for property damage during shipping
- . Other insurances

1-32

(6) Tax . All kinds of taxes

Variable prices will be applicable for civil works only and the contract price shall be adjusted according to the formula in clause 10 of Section IV "Particular Applications".

IT.8. PROGRESS SCHEDULE

Tentative project implementation Schedules are attached in Vol. 2 as part of the Tender Documents. These tentative schedules show the completion dates of the individual stages as desired by the Owner and the estimated delivery and erection times that will be required to meet these completion dates.

The Tenderer shall furnish his implementation schedule(s) showing the times for manufacture, shipment from Warehouse to Site, erection, preliminary testing, initial startup, trial operation and performance testing for the equipment provided in his Tender. Schedule(s) shall be generally in accordance with the tentative schedules attached hereto, using the same symbols for convenience in making evaluations. Furthermore, the Tender shall show in the implementation schedule the readiness of electrical, mechanical and civil works, which will give access to interface works to be performed by the Contractor himself or by some other Contractor.

Since power is so urgently needed in Karachi, such schedules will be a major consideration in evaluation of each Tender and the Tenderer shall submit his best guaranteed completion date(s) and the guaranteed readiness for connection dates.

IT.9. PRELIMINARY EXAMINATION OF TENDERS

No Tenderer will be permitted to alter his Tender after it has been opened, but clarifications not changing the substance of the Tender will be accepted. The Owner may ask any Tenderer for clarifications but any change suggested by the Tenderer in the substance of his original Tender will not be accepted.

Tenders will be reviewed to determine their responsiveness to the requirements of the Tendering Documents. A responsive Tender is one which complies with all the terms and conditions of the bidding documents without material modification. A material modification is one which effects the prices, quantity, quality, delivery, installation or commissioning dates of the equipment or materials or which limits in any way the responsibilities, duties or liabilities of the Tenderer or any rights of the Owner as defined in the tendering documents. The Owner may waive off any minor informality in the Tender which does not constitute a material modification.

Only Tenderers fulfilling the requirements of eligibility and offering Tenders substantially responsive to the requirements of the Tendering Documents will be shortlisted in the following manner:

- (1) Eligibility and Qualifications of all Tenderers/Manufacturers will be checked to determine the conformance as specified in Clause IT.3 hereof.
- (2) All eligible Tenders will be examined to determine whether

they are substantially responsive to the Tender Documents i.e. whether (i) Tenders have been properly signed (ii) Tender bond and all required guarantees and sureties have been provided, and are valid and in good order (iii) prices quoted are fixed i.e. non-escalable, during the performance of the Contract (iv) the Tenders meet the technical criteria detailed in the Technical Provisions and (v) the Tender are otherwise generally in order.

(3) Guaranteed Performance and Output of the Equipment offered, as indicated by the Tenderer will also be taken into account.

(4) Tender will not be shortlisted if:

(i) it is determined as not conforming with the specified eligibility requirements.

(ii) it is determined as not substantially responsive.

(iii) it indicates Commercial Operation Period more than 12 weeks later than the specified period of the Commercial Operation in the Tendering Documents.

A Tender determined as substantially non-responsive will not subsequently be made responsive by the Tenderer by correction of the non-conformity.

Discrepancies that do not essentially affect the substance of the Tender, such as arithmetical errors do not normally result in the rejection of the Tender but are clarified with the Tender.

(5) Alternative Tender if any, will be considered only if they comply with Clause IT.4, Alternative Tender, hereof and, will be examined in the similar manner.

The Owner reserves the right to waive minor irregularities or errors in any Tender, if it appears to the Owner that such irregularities or errors were made inadvertently. Any such irregularities or errors so waived must be corrected in the Tender in which they occur prior to the execution of the Contract which may be awarded thereon.

The Owner may limit the number of shortlisted Tenders to a maximum of (3) for detailed evaluation on the basis of initial evaluated ranking.

IT.10. CONTRACT

The Contract when executed, shall be deemed to include the entire Agreement between the parties thereto, and the Contractor shall not claim any modification thereof resulting from any representation or promise made at any time by any officer, agent or employee of the Owner or his representative or by any other person.

The Tenderer shall visit the offices of the Owner/Engineer, if called to do so, for the purpose of discussing and clarifying his Tender so that the Tender-evaluation is completed as soon as possible. The Tenderer may bring with him other concerned persons to assist him in the discussions.

All expenses in connection with the said visits and discussions

shall be borne by the Tenderer.

Date of Award of Contract shall be the date of issuance of Notice of Award. However, the Contract shall become effective on the date of Notification of approval of the Contract by the funding agency.

IT.10.1 CONTRACT DOCUMENTS

The Contract shall consist of articles setting forth the basic understanding between Owner and the Contractor and incorporating but not limited to the following:

- (1) Tendering Documents consisting of Instructions to Tenderers, Tender Form as completed and submitted by the Contractor as part of his Tender and accepted by the Owner, General Conditions of Contract, the Technical Specifications with Data Sheets as completed and submitted by the Tenderer as part of his Tender, and the Drawings.
- (2) Implementation schedule(s) giving Contract completion dates and dates for readiness for interface works.
- (3) Where applicable and accepted by the Owner in writing the deviations from the Tendering Documents.

The Contractor's customary Tender and Contractor's contract forms shall not be accepted as a part of the Contract Documents.

IT.10.2 CURRENCY CONVERSION RATES

For the purpose of comparison of Tenders, each Tender price shall be valued in terms of the Pakistani rupee. The rate of exchange be used for such evaluation shall be the selling rate officially prescribed by the State Bank of Pakistan and prevailing on the Tender date (i.e. date of Bid opening), (unless there should be a change in the value of the currencies before the award is made. In the later case, the exchange rates prevailing at the time of the decision to notify the award to the successful Tenderer, shall be used.)

IT.11. EVALUATION CRITERIA AND COMPARISON OF TENDERS

- 1) The Owner will evaluate and compare the Tenders determined to be substantially responsive, pursuant to Clause IT.9 hereof.
- 2) Adjusted Tender Price shall include Tender Price and Tender adjustments as given below:
 - a) Tender Price will be increased at the rate of 0.1 % of the Tender Price per day for each calendar day of completion later than the specified day of completion.
 - b) Credit shall be given for the purpose of evaluation at the rate of 0.05 % of the Tender Price for each calendar day of completion up to a maximum limit of 2.5 % of the Tender Price.
 - c) Deficiencies in the Tender
 - d) Deviations from the specifications

82-1

e) Correction of errors

f) Recommended spare parts will not be evaluated as part of the Tender Price

IT.12 ACCEPTANCE OF TENDERS

The Owner does not bind himself to award the Contract to the lowest or any Tenderer.

However, the Contract will be normally awarded to the lowest evaluated responsive qualified Tenderer. A "responsive" Tender is one that complies with all the terms and conditions in the Tender Documents without material deviation or modification. A material deviation or modification is one which affects in any way the price, quality, scope, or completion date of construction, services or which limits in any way any responsibilities, duties, or liabilities of the Contractor or any rights of the Owner or as any of the foregoing have been specified or defined in the Tender Documents. Tenderers may not modify nonresponsive Tenders after opening in order to make them responsive. However, the Owner may request a Tenderer to clarify its Tender as long as no material modification is made.

The Owner reserves the right to reject any or all Tenders and to waive minor informalities if it appears in the Owner's best interest to do so.

Tenderers are requested not to contact the Owner on any matter relating to the Tender, from the time of the opening to the time

the Contract is awarded, except to respond to inquiries by the Owner.

Any effort by a Tenderer to influence the Owner in the Tender evaluation, Tender comparison or contract award decisions may result in the rejection of his Tender. Once the Owner has arrived at a decision regarding the award of the Contract, he will notify promptly the successful Tenderer in writing by issuing "Notice of Award". The successful Tenderer will be required to send to Owner's Chief Engineer Project and Civil (P & C), in writing the acceptance of the same notice, within ten (10) days of the date of receipt of such notice, A representative or representatives with proper power of attorney for the purpose of executing the Contract in the form set out in the Contract Documents with such alterations or additions thereto as may be required to adopt to the circumstances of the Tender shall be dispatched to the Owners office after receipt of such notice.

Failure on the part of the successful Tenderer to provide a Performance Bond in accordance with the Conditions of Contract and/or to enter into a Contract with the Owner shall be sufficient grounds for the annulment of the award and in the event of such annulment the Tender guarantee of the successful Tenderer shall be retained by and become payable to the Owner. The award may then be made to another Tenderer, or the Owner may call for the submission of new Tenders.

All recipients of the Tender Documents (whether they submit a Tender or not) shall treat the details of the Tender Documents as

private and confidential.

Any Tender which does not conform to the foregoing instructions may be rejected.

SECTION II

TENDER AND APPENDICES

1-42

SECTION II: TENDER AND APPENDICES

APPENDICES

FORM OF TENDER

APPENDIX A - SCHEDULE OF PRICES

APPENDIX B - FORM OF TENDER BOND

APPENDIX C - SPECIAL STIPULATIONS

APPENDIX D - RECEIPT OF ADDENDA

APPENDIX E - NOT USED

APPENDIX F - DELIVERY AND CONSTRUCTION SCHEDULE

APPENDIX G - DEPARTURES FROM OR QUALIFICATIONS TO THE TENDER

DOCUMENTS (AS REQUIRED)

APPENDIX H - MANAGEMENT PROCEDURES

APPENDIX I - TENDER'S DATA SHEETS

APPENDIX J - MANDATORY AND RECOMMENDED SPARE PARTS

Tenderer's Name

APPENDIX A

SCHEDULE OF PRICES

1. Summary of Prices

ITEM NO.	DESCRIPTION	UNIT	QUAN-TITY	AMOUNT	
				F. C.	PAK. RS.
1	Preceding Work	L.S.	1		
2	Foundation	L.S.	1		
3	Tower Erection (Case 1)	L.S.	1		
4	Stringing Work	L.S.	1		
5	Other Work	L.S.	1		
6	Tools and Equipment	L.S.	1		
7	Tower Test	L.S.	1		
8	Test and Commissioning	L.S.	1		
	Grand Total (Case 1)				
3'	Tower Erection (Case 2)	L.S.	1		
	Grand Total (Case 2)				

Note:

F. C. : Foreign Currency in Origin Country of Contractor

Case 1: In case of anti-weather steel

Case 2: In case of normal steel

7-44

**APPENDIX A
SCHEDULE OF PRICES FOR LOT II-B
FIRM-PRICE CONCEPT**

TENDER/CONTRACT NO.

SHEET NO.
APPENDIX A ()

Note:
F.C. : Foreign Currency in
Origin Country of Contractor

TENDERER'S NAME:

ITEM OR EQUIPMENT		(a) EQUIPMENT & MATERIAL F.O.B	(b) MAX. MARINE TRANSPORT	(c) MARINE INSURANCE	(d) INLAND TRANSPORT	(e) INDIGENOUS EQUIPMENT & MATERIAL	(f) ERECTION AND COM- MISSIONING		(g) TOTAL UNIT PRICE (a+b+c+d+e+f)		(h) QUAN- TITY	UNIT	AMOUNT (g x h)	
ITEM NO.	DESCRIPTION	F.C.	F.C.	F.C.	PAK.RS.	PAK.RS.	F.C.	PAK.RS.	F.C.	PAK.RS.			F.C.	PAK.RS.
1.	Preceding Work												()	()
1.1	Check Survey										23.8	km		
1.2	Soil Investigation										900	m		
1.3	Clearing Work										1	lot		
1.4	Dismantling Work										1	lot		

**APPENDIX A
SCHEDULE OF PRICES FOR LOT II-B
FIRM-PRICE CONCEPT**

TENDER/CONTRACT NO.

SHEET NO.
APPENDIX A ()

Note:
F.C. : Foreign Currency in
Origin Country of Contractor

TENDERER'S NAME:

ITEM NO.	ITEM OR EQUIPMENT DESCRIPTION	(a)	(b)	(c)	(d)	(e)	(f)		(g)		(h)	UNIT	AMOUNT (g x h)	
		EQUIPMENT & MATERIAL F.O.B	MAX. MARINE TRANSPORT	MARINE INSURANCE	INLAND TRANSPORT	INDIGENOUS EQUIPMENT & MATERIAL	ERECTION AND COM- MISSIONING	F.C.	PAK. RS.	F.C.	PAK. RS.		QUAN- TITY	F.C.
2.	Foundation												()	()
2.1	Foundation													
	AS-D										18	each		
	AS-C										30	"		
	A-D										16	"		
	A-S										1	"		
	A-R										1	"		
	AL-S										2	"		
	AL-R										1	"		
	B-C										4	"		
	C-D										3	"		
	C-C										2	"		
	D-D										2	"		
	D-C										3	"		
	DR-D										4	"		
	DR-C										1	"		
	A4-S										2	"		
	D4-S										1	"		
	DR4-S										1	"		
2.2	Earthing Device										368	set		
2.3	Counter Poise										2000	m		

**APPENDIX A
SCHEDULE OF PRICES FOR LOT II-B
FIRM-PRICE CONCEPT**

TENDER/CONTRACT NO.

SHEET NO.
APPENDIX A ()

Note;
F.C. : Foreign Currency in
Origin Country of Contractor

TENDERER'S NAME:

ITEM NO.	ITEM OR EQUIPMENT DESCRIPTION	(a)	(b)	(c)	(d)	(e)	(f)		(g)		(h)	UNIT	AMOUNT (g x h)	
		EQUIPMENT & MATERIAL F.O.B	MAX. MARINE TRANSPORT	MARINE INSURANCE	INLAND TRANSPORT	INDIGENOUS EQUIPMENT & MATERIAL	ERECTION AND COM- MISSIONING	F.C.	PAK.RS.	TOTAL UNIT PRICE (a+b+c+d+e+f)			QUAN- TITY	F.C.
3.	Tower Erection (Case 1)												()	()
	AS + 0										48	each		
	A - 3										3	"		
	+ 0										8	"		
	+ 1.5										2	"		
	+ 3										2	"		
	+ 4.5										1	"		
	+ 12										2	"		
	AL + 0										1	"		
	+ 6										1	"		
	+ 7.5										1	"		
	B - 6										4	"		
	C + 0										4	"		
	+ 12										1	"		
	D - 3										5	"		
	DR - 6										1	"		
	- 3										1	"		
	+ 0										3	"		
	A4 - 3										1	"		
	+ 0										1	"		
	D4 - 3										1	"		
	DR4 - 3										1	"		

APPENDIX A
SCHEDULE OF PRICES FOR LOT II-B
FIRM-PRICE CONCEPT

TENDER/CONTRACT NO.

SHEET NO.
 APPENDIX A ()

Note:
 F.C. : Foreign Currency in
 Origin Country of Contractor

TENDERER'S NAME:

ITEM NO.	ITEM OR EQUIPMENT DESCRIPTION	(a)	(b)	(c)	(d)	(e)	(f)		(g)		(h)	UNIT	AMOUNT (g x h)	
		EQUIPMENT & MATERIAL F.O.B F.C.	MAX. MARINE TRANSPORT F.C.	MARINE INSURANCE F.C.	INLAND TRANSPORT PAK.RS.	INDIGENOUS EQUIPMENT & MATERIAL PAK.RS.	ERECTION AND COM- MISSIONING F.C.	PAK.RS.	TOTAL UNIT PRICE (a+b+c+d+e+f) F.C.	PAK.RS.	QUAN- TITY		F.C.	PAK.RS.
4.	Stringing Work												()	()
4.1	Conductor													
	ACSR/AS 330mm ²										293	km		
	ACSR/AS 680mm ²										6	"		
	OPGW 190/90 mm ²										52	"		
4.2	Insulator String w/Clamp													
	For 220 kV													
	V-Suspension										426	set		
	Double Tension										240	"		
	Single Tension										12	"		
	Single Tension Inverted										12	"		
	Jumper Support										60	"		
	For 132 kV													
	Single Suspension										12	set		
	Double Tension										18	"		
	Jumper Support										6	"		
	Tie Down										12	"		
4.3	Clamp for OPGW 190/90 mm ²													
	Suspension Clamp										132	set		
	Tension Clamp										108	"		

87-1

APPENDIX A
SCHEDULE OF PRICES FOR LOT II-B
FIRM-PRICE CONCEPT

Note:
F.C. : Foreign Currency in
Origin Country of Contractor

TENDER/CONTRACT NO.

SHEET NO.
APPENDIX A ()

TENDERER'S NAME:

ITEM NO.	DESCRIPTION	(a)	(b)	(c)	(d)	(e)	(f)		(g)		QUAN- TITY	UNIT	AMOUNT (g x h)	
		EQUIPMENT & MATERIAL F.O.B	MAX. MARINE TRANSPORT	MARINE INSURANCE	INLAND TRANSPORT	INDIGENOUS EQUIPMENT & MATERIAL	ERECTION AND COM- MISSIONING		TOTAL UNIT PRICE (a+b+c+d+e+f)				F.C.	PAK.RS.
		F.C.	F.C.	F.C.	PAK.RS.	PAK.RS.	F.C.	PAK.RS.	F.C.	PAK.RS.			F.C.	PAK.RS.
4.4	Sleeves													
	For ACSR/AS 330 mm ²													
	Mid Span Joint										144	pcs		
	Repare Sleeve						—	—			10	"		
	T Sleeve										6	"		
	For ACSR/AS 680 mm ²													
	Repare Sleeve						—	—			2	"		
4.5	Accessories for Conductor													
	Damper 14 lb										2184	pcs		
	Damper 18 lb										72	"		
	Damper 12 lb										620	"		
	Spacer for ACSR/AS 330 mm ²										2500	"		
4.6	Joint Box etc. for OPGW													
	Joint Box										24	set		
	Terminal Box										4	"		
	Earthing/Fixing Clamp										14	set/ tower		
5.	Other Work													
	Danger Plate										184	set		
	Number Plate										184	"		
	Anti Climbing Device										92	"		

87-1

**APPENDIX A
SCHEDULE OF PRICES FOR LOT II-B
FIRM-PRICE CONCEPT**

Note:
F.C. : Foreign Currency in
Origin Country of Contractor

TENDER/CONTRACT NO.

SHEET NO.
APPENDIX A ()

TENDERER'S NAME:

ITEM NO.	ITEM OR EQUIPMENT DESCRIPTION	(a)	(b)	(c)	(d)	(e)	(f)		(g)		(h)		AMOUNT (g x h)	
		EQUIPMENT & MATERIAL F.O.B	MAX. MARINE TRANSPORT F.C.	MARINE INSURANCE F.C.	INLAND TRANSPORT PAK.RS.	INDIGENOUS EQUIPMENT & MATERIAL PAK.RS.	ERECTION AND COM- MISSIONING F.C.	PAK.RS.	TOTAL UNIT PRICE (a+b+c+d+e+f) F.C.	PAK.RS.	QUAN- TITY	UNIT	F.C.	PAK.RS.
6.	Tools and Equipment												()	()
6.1	Stub Setting Template													
	for AS										4	set		
	for A, AL										2	"		
	for B, C										1	"		
	for D, DR, D4, DR4										1	"		
	for A4										1	"		
6.2	Stringing Block for OPGW										14	each		
6.3	Splicing Equipment for OPGW													
	Splicing Machine										1	set		
	Tube Heater										1	"		
	Cutting Tool										2	each		
	Jacket Stripper										2	"		
6.4	Measuring Equipment for OPGW													
	LD Light Source										1	set		
	Optical Power Mater										2	"		
	Fiber Analyzer										1	"		
	Optical Path Cord										2	"		
7.	Tower Test													
	Type AS + 0										1	each		
	Type C + 0										1	"		

APPENDIX A SCHEDULE OF PRICES FOR LOT II-B FIRM-PRICE CONCEPT										TENDER/CONTRACT NO.		SHEET NO. APPENDIX A ()					
Note: F.C. : Foreign Currency in Origin Country of Contractor										TENDERER'S NAME:							
										ITEM OR EQUIPMENT		(a) EQUIPMENT & MATERIAL F.O.B	(b) MAX. MARINE TRANSPORT F.C.	(c) MARINE INSURANCE F.C.	(d) INLAND TRANSPORT PAK.RS.	(e) INDIGENOUS EQUIPMENT & MATERIAL PAK.RS.	(f) ERECTION AND COM- MISSIONING F.C. PAK.RS.
ITEM NO.	DESCRIPTION	F.C.	F.C.	F.C.	PAK.RS.	PAK.RS.	F.C.	PAK.RS.	F.C.	PAK.RS.			F.C.	PAK.RS.			
8.	Test and Commissioning										1	lot	()	()			
	Tower Test (Option)																
	Type A + 0										1	each					
	Type AL + 0										1	"					
	Type B - 6										1	"					
	Type D - 3										1	"					
	Type DR + 0										1	"					
	Type A4 + 0										1	"					
	Type D4 - 3										1	"					
	Type DR4 - 3										1	"					

APPENDIX A
SCHEDULE OF PRICES FOR LOT II-B
FIRM-PRICE CONCEPT

Note:
 F.C. : Foreign Currency in
 Origin Country of Contractor

TENDER/CONTRACT NO.

SHEET NO.
 APPENDIX A ()

TENDERER'S NAME:

ITEM NO.	ITEM OR EQUIPMENT DESCRIPTION	(a)	(b)	(c)	(d)	(e)	(f)		(g)		(h)	UNIT	AMOUNT (g x h)	
		EQUIPMENT & MATERIAL F.O.B	MAX. MARINE TRANSPORT F.C.	MARINE INSURANCE F.C.	INLAND TRANSPORT PAK.RS.	INDIGENOUS EQUIPMENT & MATERIAL PAK.RS.	ERECTION AND COM- MISSIONING F.C.	PAK.RS.	TOTAL UNIT PRICE (a+b+c+d+e+f) F.C.	PAK.RS.	QUAN- TITY		F.C.	PAK.RS.
3.	Tower Erection (Case 2)												()	()
	AS + 0										48	each		
	A - 3										3	"		
	+ 0										8	"		
	+ 1.5										2	"		
	+ 3										2	"		
	+ 4.5										1	"		
	+ 12										2	"		
	AL + 0										1	"		
	+ 6										1	"		
	+ 7.5										1	"		
	B - 6										4	"		
	C + 0										4	"		
	+ 12										1	"		
	D - 3										5	"		
	DR - 6										1	"		
	- 3										1	"		
	+ 0										3	"		
	A4 - 3										1	"		
	+ 0										1	"		
	D4 - 3										1	"		
	DR4 - 3										1	"		

Note;
 F.C. : Foreign Currency in
 Origin Country of Contractor

APPENDIX A SCHEDULE OF PRICES FOR LOT II-B - ADDITIONAL UNIT PRICE -		TENDER/CONTRACT No.		SHEET No. APPENDIX A()
ITEM OR EQUIPMENT		ERECTION AND COMMISSIONING		REMARKS
ITEM No.	DESCRIPTION	F.C.	PAK.RS.	
AD.1	Excavation of 1m ³ normal ground (Silty Cray)			
AD.2	Excavation of 1m ³ normal ground (Fine Sand)			
AD.3	Excavation of 1m ³ normal ground (Sand with Fine Gravel)			
AD.4	Excavation of 1m ³ rocky ground			
AD.5	Concrete of 1m ³ (210kg/cm ²)			
AD.6	Reinforcement-bar i/c bending			
AD.7	Backfilling with excavated material			
AD.8	Cast-in-place concrete pile (457mmx15m)			
AD.9	Cast-in-place concrete pile (558mmx15m)			
AD.10	Cast-in-place concrete pile (914mmx15m)			

1-5

(Tenderer's Name)

APPENDIX B

FORM OF TENDER BOND

BOND Executed on _____

Name of Surety and Address _____

Name of Principal (Tenderer) and Address _____

Panel Sum of Bond (Express in words and figures) _____

Date of Bid _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bid and at the request of the said Principal (Tenderer) we, the Surety above-named are held and firmly bound onto the Karachi Electric Supply Corporation Limited (hereinafter called the Owner) in the sum stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Tenderer has submitted the accompanying Bid dated _____ for Contract No. _____ for the Supply and Erection, of _____ for the West Wharf Thermal Power Plant Project Units No.1 and No. 2, Lot-IIB for the said Owner.

45-1

(Tenderer's Name)

WHEREAS, the Owner has required as a condition for considering said Tender that the Tenderer deposit with the Owner either a certified cheque or Cashier's cheque or banker's draft in the amount of _____
_____ (Rs. _____
_____ or in lieu thereof furnish a Bid Bond or Guarantee in like amount from a Scheduled Bank of Pakistan (or in case of a foreign Bank under-written by a Scheduled Bank of Pakistan).

Conditioned as under:

- (1) that the Bid Bond or Guarantee shall remain valid for not less than _____ days following the date set for opening of Bids regardless of the validity period of the Bid itself; and
- (2) that the Bid Bond or Guarantees of unsuccessful Tenderers will be returned by the Owner upon award of the Contract; and
- (3) that in event of failure of the successful Tenderer to execute the proposed Contract Agreement for such Works and furnish the required Performance Bond, the entire said sum be paid immediately to the said Owner as liquidated damages and not as penalty for the successful Tenderer's failure to perform.

NOW, THEREFORE, if the successful Tenderer shall, within the period specified therefor, on the attached prescribed form presented to him for signatures, enter into a formal Contract with the said Owner in accordance with his Bid as accepted and furnish within (45) days of his being requested to do so, a Performance Bond with good and sufficient surety, as may be required, upon the form prescribed by the said

(Tenderer's Name)

Owner for the faithful Performance and the proper fulfillment of said Contract, or in the event of withdrawal of said Bid within the time specified then this obligation shall be void and of no effect, but otherwise to remain in full force and effect.

PROVIDED THAT the Surety shall forthwith pay the Owner the sum of _____ (Rs. _____) upon first written demand of the Owner, notice of which shall be sent by the Owner by the registered post duly addressed to the Surety at its address given above.

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

1-56

(Tenderer's Name)

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

SURETY

WITNESS

1. _____

Corporate Secretary (seal)

2. _____

1. Signature _____

2. Name _____

3. Title _____

Corporate Surety (Seal)

1-57

(Tenderer's Name)

APPENDIX C

SPECIAL STIPULATIONS

For ease of reference, certain information and Special Stipulations applicable to the Contract are set forth herein.

	<u>Clause or Condi-</u> <u>tions of contract</u>	
1. Amount of Tender Bond	IT-5 of Instructions to Tenderers (Section-I) Volume-1	
2. Time for completion	Appendix F	Within 22 months from date of commencement
3. Amount of Performance Bond	CC. 17 General of conditions of Contract (Section III), Volume 1	20 percent of the Contract Price, reducing the percentages as the Works progress.
4. Guarantee Period	CC. 19 of Section III, Volume 1	12 months after provisional Taking Over.
5. Insurance:		
i) Works and Contractor's equipment	CC. 36 of Section III, Volume 1	Full replacement value of works.
ii) Third party	CC. 36 of Section III	for each incident.
6. Time of Commencement	Form of Agreement	Immediately upon the Contractor's receipt from the Owner of a written order to proceed

85-1

(Tenderer's Name)

7. Liquidated damages:

- | | | |
|------------------------|---------------------------------|---|
| i) Delay in completion | CC. 54 of Section III, Volume 1 | 0.1% of the Contract Price for each and every day including holidays, of delay subject to maximum of 10% of the Contract Price. |
| ii) Early completion | IT. 11 of Section I, Volume 1 | Credit shall be given for the purpose of evaluation at rate of 0.05% for each calendar day of earlier completion up to a maximum limit of 2.5% of Tender Price. |

65-1
1-59

(Tenderer's Name)

8. Exchange Rate: IT. 10.2 of Section Itemize stipulated
I, Volume I. exchange rates as
follows:

Unit of Currency Equivalent Pakistan Rupee

09-1

(Tenderer's Name)

APPENDIX D
RECEIPT OF ADDENDA

Tenderers shall acknowledge receipt of each addendum by listing hereunder each addendum received.

Receipt of the following addenda are acknowledged.

Addendum numbered _____ dated _____
_____ dated _____
_____ dated _____
_____ dated _____
_____ dated _____
_____ dated _____

Signed

Date

Company Stamp

19-61

(Tenderer's Name)

APPENDIX F

DELIVERY AND CONSTRUCTION SCHEDULE

<u>Milestone</u>	<u>Delivery/Completion from Date of Owner's Order to proceed</u>
o Contractor's Data and Drawings Specified in PA.4.6 (2)	within 6 months
o Other Data and Drawings	
o Shipment of Plant Equipment and Materials at FOB Port of Export	
o Arrival of Plant Equipment and Materials at Karachi Port	2 months from the date of delivery FOB port of export
o Delivery of Plant Equipment and Materials at Job Site	
o Installation Complete Start Preoperational Test	
o Performance and Acceptance Test	21 months

1-62

(Tenderer's Name)

APPENDIX G

DEPARTURES FROM OR QUALIFICATIONS TO TENDER DOCUMENTS

The Tender shall specify below, in detail, all deviations from the Tender Document (additional sheets shall be included suffixed (a), (b), (c), etc. should the space provided be inadequate). Any entry shall be referenced to the Tender Documents Part No. and Clause No. to which they refer.

The Tender shall be deemed to be compliant in all respects with the content and intent of the Tender Documents except in respect of deviations and exceptions listed hereunder. The Tender shall sign under seal as indicated hereunder to confirm that in all matters, except as detailed in this Form, the Tender submitted is in accordance in all respects with the Tender Documents.

The Tender shall initial on all sheets and complete this Form by signing under seal as indicated.

(Tenderer's Name)

We, the Tenderer do hereby
certify that the Tender submitted is in full compliance with the Tender
Document except for the deviations listed herein.

We further certify that any other deviations or exceptions identified
or detected prior to or during the execution of the Contract for the
Works will be corrected by the Tenderer/Contractor to comply with the
requirements of the Tender Documents and Contract Documents without any
increase in the price for the Works and without any delay in the
execution of the Contract.

Signed

Date

Seal of Tenderer

719-1

(Tenderer's Name)

APPENDIX H

MANAGEMENT PROCEDURES

APPENDIX I

TENDERER'S DATA SHEETS

Tenderer's Data Sheet

(Tenderer's name)

DESCRIPTION	UNIT	REQUIRED	PROPOSED & GUARANTEED
1. CONDUCTOR			
1.1 ACSR/AS 330 mm ²			
<u>Compostie wire</u>			
Construction			
Al	pc./mm	26/4.0	
AS	pc./mm	7/3.1	
Sectional area			
Al	mm ²	326.8	
AS	mm ²	52.84	
Total	mm ²	379.6	
Overall diameter	mm	25.3	
Weight per km	kg	1,239	
Minimum ultimate tensile strength	kg	10,950	
DC resistance at 20°C	Ω/km	0.0835	
Modulus of elasticity	kg/mm ²	7,450	
Coefficient of linear expansion	x10 ⁻⁶ /°C	20.3	
Direction of outermost layer		Right (Z)	
Length in one drum	m		
Approx. gross weight of one drum	kg		
Dimension of drum (diameter x width)	mm x mm		

1-67

Tenderer's Data Sheet

(Tenderer's name)

DESCRIPTION	UNIT	REQUIRED	PROPOSED & GUARANTEED
<u>Aluminum wire</u>			
Diameter	mm	4.0	
Minimum tensile strength	kg/mm ²	16.17	
Minimum elongation in 250 mm	%	1.9	
Minimum conductivity at 20°C	%	61	
<u>Aluminum clad steel core wire</u>			
Diameter	mm	3.1	
Minimum tensile strength	kg/mm ²	130	
Minimum elongation in 250 mm	%	1.5	
Minimum conductivity at 20°C	%	23	
Minimum stress at 1% extension	kg/mm ²	110	
Minimum number of twisting before stranding	times	20	

89-168

Tenderer's Data Sheet

(Tenderer's name)

DESCRIPTION	UNIT	REQUIRED	PROPOSED & GUARANTEED
1.2 ACSR/AS 680 mm ²			
<u>Composite wire</u>			
Construction			
Al	pc./mm	54/4.0	
AS	pc./mm	7/4.0	
Sectional area			
Al	mm ²	678.8	
AS	mm ²	87.99	
Total	mm ²	766.8	
Overall diameter	mm	36.0	
Weight per km	kg	2,446	
Minimum ultimate tensile strength	kg	20,180	
DC resistance at 20°C	Ω/km	0.0408	
Modulus of elasticity	kg/mm ²	7,250	
Coefficient of linear expansion	x10 ⁻⁶ /°C	20.3	
Direction of outermost layer		Right (Z)	
Length in one drum	m		
Approx. gross weight of one drum	kg		
Dimension of drum (diameter x width)	mm x mm		

1-69

Tenderer's Data Sheet

(Tenderer's name)

DESCRIPTION	UNIT	REQUIRED	PROPOSED & GUARANTEED
<u>Aluminum wire</u>			
Diameter	mm	4.0	
Minimum tensile strength	kg/mm ²	16.17	
Minimum elongation in 250 mm	%	1.9	
Minimum conductivity at 20°C	%	61	
<u>Aluminum clad steel core wire</u>			
Diameter	mm	4.0	
Minimum tensile strength	kg/mm ²	130	
Minimum elongation in 250 mm	%	1.5	
Minimum conductivity at 20°C	%	23	
Minimum stress at 1% extension	kg/mm ²	110	
Minimum number of twisting before stranding	times	20	

1-70

Tenderer's Data Sheet

(Tenderer's name)

DESCRIPTION	UNIT	REQUIRED	PROPOSED & GUARANTEED
2. GROUND WIRE			
OPGW 190/90 mm ²			
<u>Composite wire</u>			
Construction			
HAL	pc./mm	12/4.47	
AS	pc./mm	7/4.0	
OP unit	pc./mm	1/5.2	
Sectional area			
HAL	mm ²	188.32	
AS	mm ²	87.96	
Aluminum tube	mm ²	7.31	
Total	mm ²	283.59	
Overall diameter	mm	22.2	
Weight per km	kg	1,136	
Minimum ultimate tensile strength	kg	10,500	
DC resistance at 20°C	Ω /km	0.129	
Modulus of elasticity	kg/mm ²	9,400	
Coefficient of linear expansion	x10 ⁻⁶ /°C	17.6	
Tension that can be applied without optical or mechanical degradation	ZUTS		
Max. allowable temperature			
Continuous	°C	150	
for one sec.	°C	300	
System fault current	KA x sec.	40 x 1	
Length in one drum	m		

1-71

Tenderer's Data Sheet

(Tenderer's name)

DESCRIPTION	UNIT	REQUIRED	PROPOSED & GUARANTEED
Approx. gross weight of one drum	kg		
Dimension of drum (diameter x width)	mm x mm		
<u>Aluminum wire</u>			
Diameter	mm	4.47	
Minimum tensile strength	kg/mm ²	16.17	
Minimum elongation in 250 mm	%	1.9	
Minimum conductivity at 20°C	%	61	
<u>Aluminum-clad steel wire</u>			
Diameter	mm	4.0	
Minimum tensile strength	kg/mm ²	116	
Minimum elongation in 250 mm	%	1.5	
Minimum conductivity at 20°C	%	20.3	
Minimum stress at 1% extension	kg/mm ²	105	
Minimum number of twisting before stranding	times	20	
<u>OP unit</u>			
Diameter over aluminum tube	mm	5.7	
Optical fiber type		Single Mode	
Number of optical fiber		5	
Optical attenuation at wave length 1.3 μm	dB/km	Max 0.5	
<u>Fiber diameter</u>			
Mode field diameter	μm	10	
Cladding	μm	125	
Over heat resistant jacket	μm	700	

1-72

Tenderer's Data Sheet

(Tenderer's name)

DESCRIPTION	UNIT	REQUIRED	PROPOSED & GUARANTEED
Chromatic dispersion coefficient at 1.3 μm wave length	PS/km.nm	Max. 5	
Cut off wave length	μm	1.1 - 1.3	
Optical loss variation in the temperature range -20 $^{\circ}\text{C}$ + 150 $^{\circ}\text{C}$	dB/km	\pm 0.05	

Tenderer's Data Sheet

(Tenderer's name)

DESCRIPTION	UNIT	REQUIRED	PROPOSED & GUARANTEED
3. INSULATOR			
3.1 Insulator Disc			
Type			Fog type suspension
Material of insulator			Porcelain
Colour of graze			Brown
Type of ball and socket			IEC 16 mmA
Disc diameter	mm	254	
Spacing	mm	146	
Leakage distance	mm	432	
Power frequency puncture voltage	kV	130	
Electromechanical failing load	kg	12,000	
Flash-over voltage			
Dry (50 Hz)	kV	95	
Wet (50 Hz)	kV	55	
Impulse (1 x 49 s) positive	kV	135	
Impulse (1 x 40 s) negative	kV	145	
Withstand voltage			
Power frequency	kV	45	
Impulse	kV	125	
Puncture voltage	kV	130	
Net weight	kg		

7/2

Tenderer's Data Sheet

(Tenderer's name)

DESCRIPTION	UNIT	REQUIRED	PROPOSED & GUARANTEED
3.2 220 kV V Suspension String			
No. of discs per set	pc.	22 x 2	
Electromechanical failing load/set	kg	12,000	
Withstand voltage			
Power frequency (wet)	kV	500	
Impulse	kV	1,705	
Flashover voltage			
Impulse positive	kV	2,010	
Impulse negative	kV	2,010	
Arcing horn gap	mm	3,034	
Overall leakage distance	mm	9,504	
Vertical length when installed	mm	2,913	
Net weight of one set	kg		

1-75

Tenderer's Data Sheet

DESCRIPTION	UNIT	(Tenderer's name)	
		REQUIRED	PROPOSED & GUARANTEED
3.3 220 kV Single Tension String			
No. of discs per set	pc.	23 x 1	
Electromechanical falling load	kg	12,000	
Withstand voltage			
Power frequency (wet)	kV	515	
Impulse	kV	1,775	
Flashover voltage			
Impulse positive	kV	2,090	
Impulse negative	kV	2,095	
Arcing horn gap	mm	3,180	
Overall leakage distance	mm	9,936	
Total length	mm	3,844	
Net weight of one set	kg		

1-76

Tenderer's Data Sheet

DESCRIPTION	UNIT	(Tenderer's name)	
		REQUIRED	PROPOSED & GUARANTEED
3.4 220 kV Double Tension String			
No. of discs per set	pc.	23 x 2	
Electromechanical failing load	kg	24,000	
Withstand voltage			
Power frequency (wet)	kV	515	
Impulse	kV	1,775	
Flashover voltage			
Impulse positive	kV	2,090	
Impulse negative	kV	2,095	
Arcing horn gap	mm	3,180	
Overall leakage distance	mm	9,936	
Total length	mm	4,052	
Net weight of one set	kg		

1-77

Tenderer's Data Sheet

(Tenderer's name)

DESCRIPTION	UNIT	REQUIRED	PROPOSED & GUARANTEED
3.5 220 kV Jumper Support String			
No. of discs per set	pc.	22 x 1	
Electromechanical failing load	kg	12,000	
Withstand voltage			
Power frequency (wet)	kV	500	
Impulse	kV	1,705	
Flashover voltage			
Impulse positive	kV	2,010	
Impulse negative	kV	2,010	
Arcing horn gap	mm	3,034	
Overall leakage distance	mm	9,504	
Vertical length when installed	mm	3,804	
Net weight of one set	kg		

82-1

Tenderer's Data Sheet

(Tenderer's name)

DESCRIPTION	UNIT	REQUIRED	PROPOSED & GUARANTEED
3.6 132 kV Single Suspension String			
No. of discs per set	pc.	14 x 1	
Electromechanical failing load	kg	12,000	
Withstand voltage			
Power frequency (wet)	kV	360	
Impulse	kV	1,115	
Flashover voltage			
Impulse positive	kV	1,345	
Impulse negative	kV	1,310	
Arcing horn gap	mm	1,866	
Overall leakage distance	mm	6,048	
Vertical length when installed	mm	2,499	
Net weight of one set	kg		

1-77

Tenderer's Data Sheet

(Tenderer's name)

DESCRIPTION	UNIT	REQUIRED	PROPOSED & GUARANTEED
3.7 132 kV Single Tension String			
No. of discs per set	pc.	15 x 1	
Electromechanical failing load	kg	12,000	
Withstand voltage			
Power frequency (wet)	kV	380	
Impulse	kV	1,190	
Flashover voltage			
Impulse positive	kV	1,430	
Impulse negative	kV	1,400	
Arcing horn gap	mm	2,012	
Overall leakage distance	mm	6,480	
Total length	mm	2,615	
Net weight of one set	kg		

08-1

Tenderer's Data Sheet

(Tenderer's name)

DESCRIPTION	UNIT	REQUIRED	PROPOSED & GUARANTEED
3.8 132 kV Double Tension String			
No. of discs per set	pc.	15 x 2	
Electromechanical failing load	kg	24,000	
Withstand voltage			
Power frequency (wet)	kV	380	
Impulse	kV	1,190	
Flashover voltage			
Impulse positive	kV	1,430	
Impulse negative	kV	1,400	
Arcing horn gap	mm	2,012	
Overall leakage distance	mm	6,480	
Total length	mm	2,824	
Net weight of one set	kg		

28-1

Tenderer's Data Sheet

(Tenderer's name)

4. MATERIALS FOR SUPPORT

4.1 Anti-weather steel

Materials	Yield point	Tensile strength	Shearing strength	Bearing strength	Mini. elongation in 200 mm
(Tower members)					
L45 x 4 --- L100 x 10					
More than L120 x 8					
if any					
(Bolts and nuts)					
M - 16					
M - 20					
M - 24					
M - 30					
if any					

Formula of buckling strength

Main legs and main members
in cross arm

Bracing and other members

Tenderer's Data Sheet

(Tenderer's name)

4.2 Ordinary Steel

	Materials	Yield point	Tensile strength	Shearing strength	Bearing strength	Mini. elongation in 200 mm
(Tower members)						
L45 x 4 --- L100 x 10						
More than L120 x 8						
others if any						
(Bolts and nuts)						
M - 16						
M - 20						
M - 24						
M - 30						
others if any						

Formula of buckling strength

Main legs and main members in cross arm

Bracing and other members

Tenderer's Data Sheet

(Tenderer's name)

4.3 Ingredient of Anti-weather Steel Proposed

100-

APPENDIX J
SCHEDULE OF PRICES FOR LOT II-B
FIRM-PRICE CONCEPT

TENDER/CONTRACT NO.

SHEET NO.
 APPENDIX J ()

Note:
 F.C. : Foreign Currency in
 Origin Country of Contractor

TENDERER'S NAME:

ITEM NO.	ITEM OR EQUIPMENT DESCRIPTION	(a)	(b)	(c)	(d)	(e)	(f)		(g)		(h)	UNIT	AMOUNT (g x h)	
		EQUIPMENT & MATERIAL F.O.B F.C.	MAX. MARINE TRANSPORT F.C.	MARINE INSURANCE F.C.	INLAND TRANSPORT PAK.RS.	INDIGENOUS EQUIPMENT & MATERIAL PAK.RS.	ERECTION AND COM- MISSIONING F.C.	PAK.RS.	TOTAL UNIT PRICE (a+b+c+d+e+f) F.C.	PAK.RS.	QUAN- TITY		F.C.	PAK.RS.
	MANDATORY SPARE PARTS													
1.	Tower													
	Type AS + 0										1	each		
	Type A + 0										1	"		
2.	Galvanized and Painted Steel Angle													
	L45 x 45 x 4										50	pcs.		
	L50 x 50 x 4										50	"		
	L60 x 60 x 5										20	"		
	L70 x 70 x 6										20	"		
	L75 x 75 x 6										20	"		
	L80 x 80 x 6										20	"		
	L90 x 90 x 7										10	"		
	L90 x 90 x 10										10	"		
	L100 x 100 x 10										10	"		
	L120 x 120 x 8										10	"		
	L130 x 130 x 12										10	"		
	L150 x 150 x 12										10	"		
	L175 x 175 x 12										5	"		
	L200 x 200 x 15										5	"		
	L200 x 200 x 20										5	"		
	L250 x 250 x 25										5	"		

1-26

APPENDIX J
SCHEDULE OF PRICES FOR LOT II-B
FIRM-PRICE CONCEPT

Note:
 F.C. : Foreign Currency in
 Origin Country of Contractor

TENDER/CONTRACT NO.

SHEET NO.
 APPENDIX J ()

TENDERER'S NAME:

ITEM NO.	ITEM OR EQUIPMENT DESCRIPTION	(a)	(b)	(c)	(d)	(e)	(f)		(g)		(h)	AMOUNT (g x h)		
		EQUIPMENT & MATERIAL F.O.B F.C.	MAX. MARINE TRANSPORT F.C.	MARINE INSURANCE F.C.	INLAND TRANSPORT PAK.RS.	INDIGENOUS EQUIPMENT & MATERIAL PAK.RS.	ERECTION AND COM- MISSIONING F.C.	PAK.RS.	TOTAL UNIT PRICE (a+b+c+d+e+f) F.C.	PAK.RS.	QUAN- TITY	UNIT	F.C.	PAK.RS.
3.	Paint													
	Roval Paint										100	kg		
	Phosphatizing Under Coat										200	"		
	Phosphatizing Final Coat										100	"		
4.	Insulator String Set with Clamps and Armor Rods for ACSR/AS 330 mm ²													
	V-Suspension Set										12	set		
	Double Tension Set										6	"		
	Single Tension Set										1	"		
	Insulator Disk										300	pcs		
5.	Clamp for OPGW 190/90 mm ²													
	Suspension Set w/Armor Rods										4	set		
	Tension Set										3	"		
	Earthing/Fixing Clamp										1	set/ tpwer		
6.	Accessories for Conductor													
	Spacer for ACSR/AS 330										100	pcs		
	Vibration Damper for ACSR/AS 330mm ²										70	pcs		
	for OPGW 190/90 mm ²										20	"		
7.	Others													
	Number Plate										6	set		
	Danger Plate										6	"		

28-1

SECTION III

GENERAL CONDITIONS OF CONTRACT

62-1-29

SECTION III: GENERAL CONDITIONS OF CONTRACT

	PAGE
CC.1	DEFINITIONS CC-1
CC.2	ENGINEER AND ENGINEER'S REPRESENTATIVE CC-4
CC.2.1	ENGINEER'S DUTIES CC-4
CC.2.2	ENGINEER'S POWER TO DELEGATE TO ENGINEER'S REPRESENTATIVE CC-4
CC.2.3	DUTIES AND POWERS OF ENGINEER'S REPRESENTATIVE CC-5
CC.2.4	EMERGENCY POWERS OF ENGINEER'S REPRESENTATIVE CC-5
CC.3	EXAMINATION OF SITE CC-6
CC.4	LAWS, RULES AND REGULATIONS CC-6
CC.5	LOCAL AUTHORITIES CC-7
CC.6	PATENTS CC-7
CC.7	CONTRACT AGREEMENT CC-7
CC.7.1	CONTRACT AGREEMENT CC-7
CC.7.2	COMPLIANCE WITH CONTRACT CC-7
CC.8	PERSONNEL TAXES AND DUTIES CC-8
CC.9	INCOME TAX CC-8
CC.10	IMPORT DUTIES, IMPORT PERMITS AND CONSULAR FEES CC-9
CC.11	PERMITS AND FEES CC-11
CC.12	TRANSPORTATION INSURANCE CC-11
CC.13	SUBCONTRACTORS CC-12
CC.14	CHANGES CC-12
CC.15	COORDINATION WITH OTHER CONTRACTORS CC-13
CC.16	ASSIGNMENTS CC-15
CC.17	PERFORMANCE BOND CC-15
CC.18	GUARANTEE FOR MATERIAL, WORKMANSHIP AND PERFORMANCE CC-16

1-90

	PAGE
CC.18.1	GUARANTEE FOR MATERIAL, WORKMANSHIP AND PERFORMANCE CC-16
CC.18.2	DEFECTS AFTER TAKING OVER CC-18
CC.19	PERIOD AND EXTENT OF GUARANTEE CC-21
CC.20	QUALITY OF EQUIPMENT/WORKMANSHIP CC-22
CC.21	INDIGENOUS EQUIPMENT AND MATERIAL CC-23
CC.22	PACKING AND MARKING CC-23
CC.23	UNLOADING AND STORAGE AT SITE CC-24
CC.24	SUPERINTENDENCE CC-25
CC.25	QUALIFICATION OF EMPLOYEES CC-26
CC.26	LABOUR CC-26
CC.27	SAFETY FOR WORKMEN AND PUBLIC CC-26
CC.28	UNEMPLOYMENT COMPENSATION CC-28
CC.29	FIRST AID AND MEDICAL SUPERVISION CC-28
CC.30	CARE OF FINISHED WORK CC-29
CC.31	CLEARANCE OF SITE CC-29
CC.32	MONTHLY PROGRESS REPORTS AND PHOTOGRAPHS CC-30
CC.33	SUITABLE APPLIANCES CC-31
CC.34	RESPONSIBILITY OF CONTRACTOR CC-32
CC.35	COMPLETENESS OF SUPPLY CC-33
CC.36	DAMAGES AND INSURANCE CC-33
CC.37	FORCE MAJEURE CC-35
CC.38	NOT USED CC-36
CC.39	NEGLIGENCE AND DEFAULT CC-37
CC.40	REJECTION AND INTERIM OPERATION CC-38
CC.41	WORK UNDER PROTEST CC-40

1-71

	PAGE
CC.42	WITHHOLDING PAYMENT CC-40
CC.43	PAYMENT DEDUCTIONS CC-41
CC.44	FINAL PAYMENT DOCUMENTS CC-42
CC.45	ARBITRATION CC-42
CC.46	CONTRACT VARIATIONS CC-43
CC.47	LIENS CC-44
CC.48	INTERPRETATION CC-44
CC.49	COORDINATION MEETINGS CC-45
CC.50	LANGUAGE CC-46
CC.51	INSPECTION, TESTING AND REJECTION CC-46
CC.52	STARTUP, TRIAL OPERATION AND PERFORMANCE TEST CC-49
CC.52.1	GENERAL CC-49
CC.52.2	TRIAL OPERATION AND PERFORMANCE TEST CC-51
CC.53	PERFORMANCE GUARANTEES AND LIQUIDATED DAMAGES CC-53
CC.54	LIQUIDATED DAMAGES, DELAY IN COMPLETION CC-53
CC.55	LIABILITY, LIABILITIES, INDEMNITIES FOR ACCIDENTS AND DAMAGES CC-54
CC.56	LIMITATIONS OF CONTRACTOR'S LIABILITY CC-58
CC.57	PROVISIONAL TAKING OVER CC-58
CC.58	FINAL COMPLETION CERTIFICATE CC-60
CC.59	TERMS OF PAYMENT CC-61
CC.60	MODE OF PAYMENT CC-65
CC.61	COST ACCOUNT BREAKDOWN CC-66
CC.62	SHIPPING PAPERS CC-66
CC.63	RECEIVING AND/OR DAMAGE REPORTS CC-67
CC.64	MISCELLANEOUS DOCUMENTS DISTRIBUTION CC-68
CC.65	EXTENSION OF TIME FOR COMPLETION CC-69

1-92

SECTION III. GENERAL CONDITIONS OF CONTRACT

CC.1. DEFINITIONS

In the Contract, the following words and expressions shall have the meaning herein assigned to them unless the context otherwise requires:

(a) The "Owner" means:

Karachi Electric Supply Corporation Limited (KESC) who has called for tenders to design, provide and execute the Works and who will employ the Contractor and the legal successors in title to the Owner and shall include the Owner's legal personal representatives.

(b) The "Engineer" means:

Name and address of the Engineer

or other person

for the time being or from time to time duly appointed in writing by the Owner to act as Engineer for the purposes of the Contract and includes such other person (if any) to whom the Engineer's authority may have been lawfully delegated pursuant to the Contract.

(c) "Contractor" means the Tenderer whose Tender has been accepted by the Owner and includes the Contractor's legal personal representatives, successors and permitted assigns.

(d) "Contract Agreement" means the document referred to in Clause CC.7.1 hereof.

(e) "Tender Documents" are the legal and technical documents which

1-193

SECTION III. GENERAL CONDITIONS OF CONTRACT

CC.1. DEFINITIONS

In the Contract, the following words and expressions shall have the meaning herein assigned to them unless the context otherwise requires:

- (a) The "Owner" means: Karachi Electric Supply Corporation Limited (KESC) who has called for tenders to design, provide and execute the Works and who will employ the Contractor and the legal successors in title to the Owner and shall include the Owner's legal personal representatives.
- (b) The "Engineer" means: Tokyo Electric Power Services Co., Ltd. (TEPSCO) No. 1-4, Uchisaiwaicho 2-chome, Chiyoda-ku, Tokyo 100, Japan or other person for the time being or from time to time duly appointed in writing by the Owner to act as Engineer for the purposes of the Contract and includes such other person (if any) to whom the Engineer's authority may have been lawfully delegated pursuant to the Contract.
- (c) "Contractor" means the Tenderer whose Tender has been accepted by the Owner and includes the Contractor's legal personal representatives, successors and permitted assigns.
- (d) "Contract Agreement" means the document referred to in Clause CC.7.1 hereof.
- (e) "Tender Documents" are the legal and technical documents which

constitute the basis for the Tender.

- (f) "Tender" means the offering of the Tender in response to the Tender Documents.
- (g) "Tenderer" means the person, partnership, company, corporation or consortium that submits a Tender.
- (h) "Equipment" means and includes machinery, apparatus, materials, articles, spare parts and things of all kind to be provided under the Contract, which, when accepted, will become the property of the Owner.
- (i) "Project" means the 220 kV Overhead Transmission Line from terminal point of underground cable to the Baldia Grid Station with 132 kV line on composite towers in some portion.
- (j) "Subcontractor" means the person or firm or company to whom any part of the Works has or will be sublet by the Contractor with the written approval of the Owner and sub-contractor's legal representatives, successors, or assignees as approved by the Owner.
- (k) "Manufacturer" means the person or party who will design and/or manufacture the Equipment as specified, complete or in part required under the Contract.
- (l) "Specifications" or "Specified" means the requirements of the Documents and modifications thereof made under Clause CC.14 hereof.
- (m) Where the words "directed", "required", "permitted" "approved", "accepted", or similar terms are used, the "direction", "request",

etc. shall be understood to mean "by the Owner" and/or "by the Engineer".

- (n) The words "indicated or shown" shall be understood to mean "on the drawings", "on the diagrams" or on any other document.
- (o) "Works" means and includes all equipment to be provided and work to be done by the Contractor under the Contract.
- (p) "Site", or "Project Site", means the place or places named in the documents and include, where applicable, the lands and buildings upon which the Works are to be executed.
- (q) "Day", "week", "month" means calendar day, calendar week, or calendar month respectively.
- (r) Words implying the singular only shall also include the plural and vice versa where the context so requires.
- (s) The term "person" shall include firm, company, corporation, and consortium.
- (t) "Provisional Taking Over" means that fabrication, construction, tests and adjustment have been satisfactory completed and works taken over pursuant to Clause CC.57.

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

CC.2. ENGINEER AND ENGINEER'S REPRESENTATIVE

CC.2.1 ENGINEER'S DUTIES

The Engineer shall carry out such duties in issuing decisions, certificates and orders as are specified in the Contract.

CC.2.2 ENGINEER'S POWER TO DELEGATE TO ENGINEER'S REPRESENTATIVE

The Engineer may from time to time in writing delegate to the Engineer's Representative any of the power, discretions, functions and/or authorities vested in him and he may at any time revoke any such delegation. The Engineer shall furnish to the Contractor a copy of such written delegations of powers and authorities and also of any revocation thereof. No such delegation or revocation have effect until a copy thereof has been delivered to the Contractor.

Any written decision, instruction or approval given by the Engineer's Representative to the Contractor in accordance with the terms of such delegation (but not otherwise) shall bind the Contractor and the Owner as though it had been given by the Engineer provided always that:

- (1) any failure of the Engineer's Representative to disapprove any Equipment work or materials or workmanship shall not prejudice the power of the Engineer thereafter to disapprove such equipment work or materials or workmanship and to reject the Equipment, work or materials or workmanship as not acceptable and to order the rectification thereof in accordance with these Conditions;
- (2) if the Contractor shall be dissatisfied by reason of any decision

of the Engineer's Representative he shall be entitled to refer the matter to the Engineer who will thereupon confirm, reverse or vary such decision.

CC.2.3 DUTIES AND POWERS OF ENGINEER'S REPRESENTATIVE

The Engineer's Representative shall be responsible to the Engineer and his duties are to watch and supervise the works, and to examine and supervise testing of any Equipment or materials to be used or workmanship employed in connection with the Works. The Engineer's Representative shall have no authority to relieve the Contractor of any of his duties or obligations under the Contract nor to make any Variation Order nor except as expressly provided in the Contract, to order any work involving delay in completion or any extra payment to the Contractor by the Owner.

CC.2.4 EMERGENCY POWERS OF ENGINEER'S REPRESENTATIVE

Notwithstanding the provisions of Clause CC.2.3 hereof if in the opinion of the Engineer's Representative an emergency occurs at the Site affecting the safety of life or the Works or of adjoining property, he may direct the Contractor, his servants and agents at the Site to carry out all such work or to do all such things as may be necessary in the opinion of the Engineer's Representative to abate or reduce the risk. The Contractor, his servants and agents at the Site shall forthwith comply without appeal with any such direction of the Engineer's Representative. The Engineer shall determine the amount (if any) of extra payment to which the Contractor may be entitled in accordance with

the Contract in respect of work done or anything done pursuant to the provisions of this Clause.

CC.3. EXAMINATION OF SITE

The Contractor shall be deemed to have carefully examined the Contract Documents, the Site and the existing installation as applicable to have satisfied himself as to the nature and character of the Works to be executed and other relevant matters and details. Any information received from the Owner or Engineer shall not in any way relieve the Contractor from his responsibility for supplying equipment and material and executing the Works in terms of the Contract Documents, including all details and incidental work and supply of all accessories or apparatus which may not have been specifically mentioned in the Contract Documents but are necessary for ensuring a complete installation and safe and efficient working of the Project.

CC.4. LAWS, RULES AND REGULATIONS

The laws, rules and regulations of the Government of Pakistan and all other governmental authorities having jurisdiction over the Works of the Project shall govern with the same force and effect as if written herein. Where such laws, rules and regulations conflict with the Contract, the more stringent requirements, as interpreted by the Engineer, shall govern. Should such conflicts require changes in the Contract, the Contractor shall promptly notify the Engineer. The Contractor shall remove and replace free of cost to Owner's all those Works which do not meet the requirements of the said laws, rules and

regulations.

CC.5. LOCAL AUTHORITIES

The Owner will serve all notices and obtain assents, wayleaves and permissions required in connection with by-laws of any local or other authority having jurisdiction on this matter.

CC.6. PATENTS

The Contractor shall provide for and pay all royalties and licence fees, and shall save the Owner and the Engineer harmless from loss or annoyance on account of suits or claims of any kind for violation or infringement of any letters patent, or patent rights, by the Contractor or anyone directly or indirectly employed by him, or by reason of the use by him or them of any part, machine, manufacture or composition a matter in connection with the Works furnished, in violation or infringement of such letters or rights.

CC.7. CONTRACT AGREEMENT

CC.7.1 CONTRACT AGREEMENT

The Contractor shall when called upon so to do enter into and execute a Contract Agreement (to be prepared at the cost of the Owner) in the form annexed with such modifications as may be necessary.

CC.7.2 COMPLIANCE WITH CONTRACT

Equipment, materials and services shall be complete in all respects and

86-1

in strict accordance with the Contract. The Contractor shall comply with the codes and standards specified in the Contract Documents which shall be the latest revisions of international standards/codes.

CC.8. PERSONNEL TAXES AND DUTIES

The Contractor or his employees shall pay all personal income or other taxes due in Pakistan for personnel employed by the Contractor for supervising the erection work included in the Contract. The personal taxes of the Contractor's employees and duties on goods imported by the Contractor or his employees shall be the responsibility of the employee and/or the Contractor. These taxes and duties shall be payable in Pakistani Rupees. The Contractor shall obtain at his own cost, work permits from competent authorities to enable any foreign personnel to work in Pakistan. The Contractor shall be responsible for all formalities in connection with passports, obtaining visas, police permits, and expenses for customs duties related to personal goods of foreign personnel employed on the Project. However, the Owner will, if requested, assist the Contractor in obtaining visas and work permits.

CC.9. INCOME TAX

The Contractor shall be responsible for all Contractor's corporate or Company income tax payable in Pakistan. The income tax if payable in Pakistan will be local currency costs. Normally income tax is paid out of profit and shall be payable in Pakistani Rupees.

CC.10. IMPORT DUTIES, IMPORT PERMITS AND CONSULAR FEES

Import duties, sales tax, surcharges, import permit fee, Octroi and other charges applicable on import of equipment and material will be the responsibility of and will be paid for by the Owner for all items covered under Category "a" below. The Contractor shall pay the import duties, sales tax, surcharges, import permit fee, Octroi, and other charges associated with import of equipment and materials shown under Categories "b" and "c". The Owner will be liable to pay import duties, permit fee sales tax and other charges on C&F value of the contracted amount. Import duties on equipment and material in excess of the contracted C&F value, consigned under "No-Charge" invoicing shall be payable by the Contractor.

Category-a

All equipment and material imported by the Contractor for the Project which, when accepted, will become the property of the Owner.

Category-b

All equipment and material which is the property of the Contractor necessary to be used at the Site in order to properly carry out the Works, and which ultimately will be exported on completion of the Project.

Category-c

All equipment and material which is the property of the Contractor,

101-1

necessary to be used at the Site in order to properly perform the work, and which ultimately will be sold on completion of the Project.

The rate of import duty, sales tax, etc. on categories "b" & "c" above will be the applicable rates at the time of import into Pakistan and shall be paid in full by the Contractor at such time. The Contractor shall also arrange for all import permits and pay any incidental clearance expenses required although the Owner will assist in obtaining the permits if so requested by the Contractor. At the time of export, a certain amount of duty will be refunded to the Contractor in accordance with Custom's Rules.

Government permit for sale for Category "c" shall be obtained by the Contractor. The Owner will have first option to purchase these items.

A "No-Charge" invoice is required by the customs authorities giving the cost and freight price of each consignment involved so that the correct import duty can be assessed.

No Pakistan consular fees are involved in connection with the Project. All import permits for Category "a" above will be obtained by the Owner. Upon arrival of each consignment of such imported equipment and materials under Category "a" the Owner will arrange with his clearing agent for the clearance therefor. All formalities in this respect will be performed by the Owner who will bear all incidental clearance expenses as may be required.

A Contractor's representative shall also be constantly associated with the clearing agent to verify and confirm the imported equipment and material and the relevant documents.

CC.11. PERMITS AND FEES

Unless otherwise provided in the Contract, the Contractor shall obtain and pay for all permits and other documents necessary to complete the Works, and these permits/certificates and documents shall be delivered to the Engineer and they will become the property of the Owner.

CC.12. TRANSPORTATION INSURANCE

- (a) The Contractor shall obtain an all risk insurance for marine and inland transportation (in Pakistan and abroad) including coverage for customs duties (totalling 150% of C&F value) without war risk to cover all loss and damage from Contractor's (manufacturer's) warehouse to Site for imported material and equipment.
- (b) The Contractor shall from time to time when so requested by the Engineer's Representatives, produce the policy and receipts for the premiums.
- (c) All insurance policies for individual consignment shall be valid for ninety (90) days after the receipt of material at Site, enabling thorough checking for loss and damage.
- (d) All formalities in connection with processing of insurance claims shall be the sole responsibility of the Contractor.
- (e) Should a loss be sustained, the Contractor shall replace or repair any loss or damage free of cost and complete the Works in accordance with the Contract on a priority basis without awaiting settlement of insurance claim(s).

(f) For the inland transportation of indigenous equipment and materials, the Contractor shall arrange and pay for transportation insurance with National Insurance Corporation of Pakistan which shall cover all risks, i.e. fire, flood, theft, damage due to exposure, breakages, loss in transit, or through riots, strikes, civil commotion, etc. from the manufacturer's plant warehouse up to the Site, plus ninety (90) days of storage after arrival of each consignment at Site. The insured value of each consignment shall be such as to ensure replacements being obtained free of cost to the Owner at the Site. Such values shall be subject to the approval of the Owner.

CC.13. SUBCONTRACTORS

Except where otherwise provided by the Contract, the Contractor shall not appoint any sub-contractor for any part of the Works without the prior written consent of the Engineer.

The Contractor is obliged to keep his subcontractor fully informed as to the contents and requirements of these documents.

CC.14. CHANGES

(a) The Owner reserves the right during the progress of the Works to make any changes, additions or omissions that he may desire and the same shall be executed by the Contractor without impairing the Contract. The value of any such changes will be agreed upon in writing before the changed work is started, and will be added to or deducted from the Contract Price. The Contractor shall submit to

the Engineer, for checking and approval, the rate analysis giving the value of labour, material, overheads and profit, involved in each change, with the time required to make such change.

- (b) No claim for changes or additions will be allowed unless the same is ordered in writing by the Engineer, at a cost to be agreed upon and stated in the order. No claim will be allowed for loss of prospective profits on any cancelled portion of the Works.

CC.15. COORDINATION WITH OTHER CONTRACTORS

- (a) The Owner reserves the right to let other contracts in connection with the Works. The Contractor shall afford such other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work simultaneously with his own and shall properly connect and coordinate his work with theirs.
- (b) Two (2) black and white prints of all drawings and documents prepared by the Engineer or other contractors on the basis of drawings documents and information as furnished by the Contractor in accordance with the Contract Documents will be sent to the Contractor for counter-checking and confirmation.

The Contractor shall promptly, but not later than 7 days check such drawings and documents for compliance with the requirements of his equipment and his interests and shall return one (1) print with his examination endorsement and/or comments to the Engineer.

The Contractor shall immediately inform the Engineer of any discrepancies, errors or omissions in the drawings and documents

1-105

furnished to him under this Clause.

On failure to meet these requirements the Contractor shall be liable for any resulting damage and expenditure.

(c) The Contractor shall cooperate with the contractors of other related equipment in the mutual exchange of all necessary drawings, dimensions, templates, gauges, data and other information required to ensure the complete and proper design and manufacture of all connecting or related parts. No extra compensation shall be claimed by the Contractor because of any modifications required to accommodate the equipment of other contractors unless otherwise specifically provided herein, and all adjustments shall be made between the respective contractors without extra cost to the Owner. The Owner and Engineer shall receive 3 copy of all correspondence between contractors.

(d) Should the occasion arise that the Contractor believes that the other contractor has failed or may fail to supply any requested information related to the equipment, and that lack of such information will affect his contractual obligations, then he shall seek the Engineer's assistance to have such information provided.

(e) If any part of the Contractor's work depends upon the proper execution or results of the work of any other contractor, the Contractor shall inspect and promptly report in writing to the Engineer any defects in the other contractor's work that render it unsuitable for proper execution or results. His failure to so inspect and report shall constitute an acceptance of the other

901-1

contractor's work as fit and proper for the execution of his work, except as to defects which may develop in the other contractor's work after the execution of his work.

- (f) To ensure the proper execution of his subsequent work, the Contractor shall examine/measure work already in place and shall at once report to the Engineer any discrepancy between the executed work and the drawings.

CC.16. ASSIGNMENTS

The Contractor shall not assign or sublet this Contract in whole or in part without the written consent of the Owner. The approval of any assignment or subcontract by the Owner will not relieve the Contractor from responsibility for such assigned or sublet work in the event that it is not satisfactorily performed by the subcontractor.

CC.17. PERFORMANCE BOND

- (a) The Contractor shall within forty-five (45) days from the date of the issuance of Notice of Award of the Contract, furnish at his cost one Performance Bond in a sum of 20% of the total Contract Price i.e. (20% of the value of foreign currency portion of the Contract Price in foreign currency and 20% of the value of local currency portion of the Contract Price in local currency) as a guarantee for the due and faithful performance of the Contract. Such guarantee shall be binding notwithstanding any variations, alterations or extensions of time that may be given or agreed upon. Said Performance Bond from a foreign bank shall be counter-

101-1

guaranteed by a scheduled bank of Pakistan and the Bond shall be in a form acceptable to the Owner.

- (b) The Performance Bond shall be according to Exhibit-B.
- (c) No claim shall be entertained against the Owner on account of interest on security deposits.
- (d) The Performance Bond, bank guarantee or any other guarantee shall be indemnified in favour of the Owner and it shall be valid for a period of 12 months after Provisional Taking Over of the Plant or up to the end of Guarantee Period as given in Clause CC.19, whichever is later.

CC.18. GUARANTEE FOR MATERIAL, WORKMANSHIP AND PERFORMANCE

CC.18.1 GUARANTEE FOR MATERIAL, WORKMANSHIP AND PERFORMANCE

- (a) The Contractor shall guarantee that the materials and workmanship incorporated into the work are new and the best of their respective kinds for the service intended and that all items will be free from inherent defects in design, workmanship and materials, and that all equipment in its several parts will operate successfully at all capacities up to and including the maximum specified load, specified noise levels, heating, stressing of parts, wear and vibration, and that an ample factor of safety is included in every design.
- (b) Manufacturer's equipment warranties, if they exceed the period of the Contract guarantees as defined in these documents, shall be

801-1

transferred to the Owner at the end of the Contract guarantee period.

(c) Guarantees, when required by the Specifications, shall be furnished by the Contractor upon forms approved by the Engineer and shall be signed by both the Contractor and the subcontractor whose work is involved.

(d) The Contractor's liability shall not be limited only to the replacement of any defective part or equipment that may develop in the equipment or material of his own work or manufacture or those of his subcontractor under proper use and arising solely from faulty design, materials, or workmanship during the guarantee period but he shall also be responsible for replacement, erection and commissioning of such equipment/material which is damaged due to any mishap caused as a result of defective materials/equipment or inadequate workmanship of the Contractor.

Replacement of the defective parts or equipment as mentioned shall be effected provided always that such defective parts are not repairable at the Site, are not essential in the meantime in commercial use of the equipment, and are properly returned to the Contractor's factory unless otherwise arranged.

(e) All replacements shall be made free of cost including without limitation on transportation costs, custom duties, sales taxes etc.) at the Site by the Contractor and the return of the defective parts to the Contractor's factory shall be the Contractor's responsibility and shall be made at his expense. The Owner will,

however, render such assistance as necessary to expedite the same. In the case of defective parts not repairable at the Site but essential in the meantime for the commercial use of the equipment, the Contractor shall replace free of cost at the Site the said defective parts. The defective parts shall not be removed from the site before the arrival of the replacement parts.

CC.18.2 DEFECTS AFTER TAKING OVER

- (a) As soon as the Works have been completed in accordance with the Contract including successful continuous uninterrupted operation of thirty (30) days and performance tests, except in minor respects that do not affect their use for the purpose, the Owner will issue a certificate counter signed by the Engineer, herein called a "Provisional Taking-Over Certificate", in which he will certify the date on which the Works have been so completed and the Owner shall be deemed to have taken over the Works on the date so certified, but the issue of a Provisional Taking-Over Certificate shall not operate as an admission that the Works have been completed in every respect.

The Contractor shall be responsible for making good with all possible speed any defect in or damage to any portion of the Works which may appear or occur during the period starting from the Provisional Taking Over of that portion and up to the end of the twelve (12) months maintenance

period and which arises either:

- i) From defective materials, workmanship, or design (other than a design made, furnished, or specified by the Owner and for which the Contractor has disclaimed in writing within a reasonable time after receipt of the Owner's instruction), or
- ii) From any act or omission of the Contractor's Works or omitted during the said period

(b) If any such defects shall appear or damage occur, the Owner and the Engineer shall inform the Contractor thereof stating in writing the nature of the defect or damage. If the Contractor replaces or renews any portion of the Works, the provisions of this clause shall apply to the portion of the Works so replaced or renewed until the expiration of twelve (12) months from the date of such replacement or renewal.

(c) The period of twelve (12) months mentioned in subclause a) and b) of this Clause shall be extended by a period equal to the period during which the Works or that portion thereof in which a defect to which this clause applies has developed cannot be used by reason of that defect.

(d) If any such defect or damage is not remedied within a reasonable time, the Owner may proceed to do the Work at the Contractor's risk and expense, but without prejudice

to any other rights which the Owner may have against the Contractor in respect of the failure of the Contractor to remedy such defects.

(e) If the replacements or renewals are of such a character as may affect the efficiency of the Works, or any portion thereof, the Owner may within one (1) month of such replacement or renewal give to the Contractor notice in writing requiring that tests on completion be made, in which case such tests shall be carried out as provided in these documents, the cost of the test shall be borne by the Contractor.

(f) These conditions of Contract shall apply to all inspections, adjustments, replacements, and renewals and to all tests occasioned thereby, carried out by the Contractor pursuant to this Clause.

(g) Until the Final Completion Certificate shall have been issued, the Contractor shall have the right of access, at all reasonable working hours, at his own risk and expense, by himself or his duly authorized representatives whose names shall have previously been communicated in writing to the Owner/Engineer, to all parts of the Works for the purpose of inspecting the working thereof and to records of the working and performance thereof and for the purpose of inspecting the same and taking notes therefrom. Subject to the Owner's and the Engineer's approval, which shall not be

unreasonably withheld, the Contractor may at his own risk and expense make any tests which he considers desirable.

(h) If the Owner or the Engineer certifies that any defects which have shown themselves within the maintenance period are of such a nature as to require the Contractor's skilled attention, the Contractor shall send to the Site supervisory staff in such numbers and for such periods as may be necessary to remedy such defects in a timely manner.

(i) Any spare parts furnished by the Contractor in connection with the Works under the Contract or by addition thereto shall be guaranteed to be free of manufacturing defects and shall upon any failure occurring within twelve (12) months, from their incorporation into the Works, be replaced without cost to the Owner subject to a limit of forty-eight (48) months from the date of shipment.

CC.19. PERIOD AND EXTENT OF GUARANTEE

(a) The Period of Guarantee on all equipment, materials and workmanship shall be 12 months starting from the effective date of Provisional Taking Over by the Engineer or as expressly stated elsewhere in the Contract Documents, including Clause CC.18.2 hereof.

(b) If during the Guarantee Period the services of the Contractor's personnel are required for the rectification or replacement of any defective part of the work due to defective material, design or

workmanship, such services shall be made available by the Contractor without charge to the Owner.

- (c) In addition to the general guarantees stated in Clause CC.18 and this Clause the Contractor shall comply with the performance and other special guarantees described in the technical Specifications of the Contract.

CC.20. QUALITY OF EQUIPMENT/WORKMANSHIP

- (a) All equipment and all material shall be manufactured by companies which have had at least ten years previous experience in the design and manufacture of equipment and/or material of comparable type, capacity and operating conditions.
- (b) Where the requirements of the Specifications make any material proprietary or non-obtainable, the Engineer reserve the right to waive any portion or portions of it as required to obtain the intent of the technical Specifications.
- (c) When a manufacturer's product is specified by name, or equivalent, it will be in the sole judgement of the Engineer to accept any product which is offered as equal to that specified.
- (d) Contract shall be based on the equipment and materials specified, and any request to substitute any alternative items shall be stated and completed in accordance with Clause IT.4 of Section I and the amount to be added or deducted shall be given in the Contractor's Data Sheet. Any request for substitution after the award of the Contract shall not be allowed. However, in special circumstances

it will be the Owner/Engineer's discretion to consider the request of the Contractor.

CC.21. INDIGENOUS EQUIPMENT AND MATERIAL

So far as may be consistent with his obligations under the Contract and considerations of economy and efficiency, the Contractor shall make the maximum possible use of materials supplies and equipment indigenous to or produced in Pakistan and the services available in Pakistan or operated by Pakistan.

CC.22. PACKING AND MARKING

(a) All equipment and materials, together with the applicable instruction book, packing list and special site storage instruction, shall be carefully boxed, crated or otherwise adequately protected for overseas shipment. Flanges, studs, and exposed machine-finished surfaces shall be thoroughly greased and protected before shipment. Any equipment that will be damaged by water or high humidity shall be encased in water-tight and/or air-tight, rugged containers; suitable desiccants shall be placed inside each air-tight container to ensure a low-humidity atmosphere therein. For additional requirements on packing see Clause 6 of the Section IV.

(b) Each separate package of material (and each component within a package); item of equipment, fixture, box, crate or other shipping enclosure shall be marked and tagged in the English language with the following information:

- (1) Owner's Contract number and Engineer's technical specification number.
- (2) Engineer's item number for all equipment or other contents.
- (3) Contractor's job and item reference number, if any.

Marking shall be by means of block letters not less than 1/2" high stencilled on the box, crate or package with black paint in an easily read location. When stencilling is not possible, the information shall be marked on a durable metal tag which shall be securely wired to the equipment, package and each component within a package.

- (c) A typical example of marking will be indicated by the Engineer later.

CC.23. UNLOADING AND STORAGE AT SITE

- (a) The Contractor shall unload all imported equipment and materials at the site from trucks and trailers and indigenous items from delivery vehicles as the case may be in accordance with Clause PA.5.
- (b) Storage methods shall be such as to cause minimum inconvenience to others and shall be arranged to facilitate inspection.
- (c) All equipment and materials storage shall comply with the requirements of Clause PA.11. or be to the approval of the Engineer.
- (d) All packing boxes, containers (but not shipping containers)