

Section 6 - Employer's Requirements

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1. Scope of Supply of Plant and Services

(As per volume 2 of Section -6)

2. Specifications

(As per volume 2 of Section -6)

3. Drawings

(As per volume 3 of Section -6)

4. Supplementary Information

5. Certificates

5.1 Form of Completion Certificate

Contract: [. . . .insert name of contract and contract identification details. . . .]

Date:

Certificate No.:

To: [. . . .insert name and address of contractor. . . .]

Dear Ladies and/or Gentlemen,

Pursuant to GCC Clause 24 (Completion of the Facilities) of the General Conditions of the Contract entered into between yourselves and the Employer dated [. . . .insert date. . . .], relating to the [. . . .brief description of the Facilities], we hereby notify you that the following part(s) of the Facilities was (were) complete on the date specified below, and that, in accordance with the terms of the Contract, the Employer hereby takes over the said part(s) of the Facilities, together with the responsibility for care and custody and the risk of loss thereof on the date mentioned below.

- 1. Description of the Facilities or part thereof: [. . . .description]
- 2. Date of Completion: [. . . .date]

However, you are required to complete the outstanding items listed in the attachment hereto as soon as practicable.

This letter does not relieve you of your obligation to complete the execution of the Facilities in accordance with the Contract nor of your obligations during the Defect Liability Period.

Very truly yours,

[. . . .Signature]

Project Manager

5.2 Form of Operational Acceptance Certificate

Contract: [. . . .insert name of contract and contract identification details.]

Date:

Certificate No.:

To: [. . . .insert name and address of contractor.]

Pursuant to GCC Subclause 25.3 (Operational Acceptance) of the General Conditions of the Contract entered into between yourselves and the Employer dated [. . .date. . .], relating to the [. . .brief description of the facilities. . .], we hereby notify you that the Functional Guarantees of the following part(s) of the Facilities were satisfactorily attained on the date specified below.

1. Description of the Facilities or part thereof: [. . .description . . .]
2. Date of Operational Acceptance: [. . .date . . .]

This letter does not relieve you of your obligation to complete the execution of the Facilities in accordance with the Contract nor of your obligations during the Defect Liability Period.

Very truly yours,

[. . .Signature . . .]

Project Manager

6. Change Orders

6.1 Change Order Procedure

- 6.1.1 General
- 6.1.2 Change Order Log
- 6.1.3 References for Changes

6.2. Change Order Forms

- 6.2.1 Request for Change Proposal
- 6.2.2 Estimate for Change Proposal
- 6.2.3 Acceptance of Estimate
- 6.2.4 Change Proposal
- 6.2.5 Change Order
- 6.2.6 Pending Agreement Change Order
- 6.2.7 Application for Change Proposal

6.1. Change Order Procedure

6.1.1 General

This section provides samples of procedures and forms for implementing changes in the Facilities during the performance of the Contract in accordance with GCC Clause 39 (Change in the Facilities) of the General Conditions.

6.1.2 Change Order Log

The Contractor shall keep an up-to-date Change Order Log to show the current status of Requests for Change and Changes authorized or pending. Entries of the Changes in the Change Order Log shall be made to ensure that the log is up-to-date. The Contractor shall attach a copy of the current Change Order Log in the monthly progress report to be submitted to the Employer.

6.1.3 References for Changes

- (1) Request for Change as referred to in GCC Clause 39 shall be serially numbered CR-X-nnn.
- (2) Estimate for Change Proposal as referred to in GCC Clause 39 shall be serially numbered CN-X-nnn.
- (3) Acceptance of Estimate as referred to in GCC Clause 39 shall be serially numbered CA-X-nnn.
- (4) Change Proposal as referred to in GCC Clause 39 shall be serially numbered CP-X-nnn.
- (5) Change Order as referred to in GCC Clause 39 shall be serially numbered CO-X-nnn.

Note:

- (a) Requests for Change issued from the Employer's Home Office and the Site representatives of the Employer shall have the following respective references:

Home Office	CR-H-nnn
Site	CR-S-nnn

- (b) The above number "nnn" is the same for Request for Change, Estimate for Change Proposal, Acceptance of Estimate, Change Proposal and Change Order.

6.2.2 Estimate for Change Proposal Form

[Contractor's letterhead]

To: [Employer's name and address]

Date:

Attention: [Name and title]

Contract Name: [Contract name]

Contract Number: [Contract number]

Dear Ladies and/or Gentlemen:

With reference to your Request for Change Proposal, we are pleased to notify you of the approximate cost to prepare the below-referenced Change Proposal in accordance with GCC Sub clause 39.2.1 of the General Conditions. We acknowledge that your agreement to the cost of preparing the Change Proposal, in accordance with GCC Sub clause 39.2.2, is required before estimating the cost for change work.

1. Title of Change: [Title]
2. Change Request No./Rev.: [Number]
3. Brief Description of Change: [Description]
4. Scheduled Impact of Change: [Description]
5. Cost for Preparation of Change Proposal: [insert costs, which shall be in the currencies of the contract]

(a) Engineering	(Amount)
(i) Engineer _____ hours (hrs) x _____ rate/hr = _____	
(ii) Draftsperson _____ hrs x _____ rate/hr = _____	
Sub-total _____ hrs	_____
Total Engineering Cost	_____
(b) Other Cost	_____
Total Cost (a) + (b)	_____

[Contractor's name]

[Signature]

[Name of signatory]

[Title of signatory]

6.2.3 Acceptance of Estimate Form

[*Employer's letterhead*]

To: [*Contractor's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

We hereby accept your Estimate for Change Proposal and agree that you should proceed with the preparation of the Change Proposal.

1. Title of Change: [*Title*]
2. Change Request No./Rev.: [*Request number/revision*]
3. Estimate for Change Proposal No./Rev.: [*Proposal number/revision*]
4. Acceptance of Estimate No./Rev.: [*Estimate number/revision*]
5. Brief Description of Change: [*Description*]
6. Other Terms and Conditions: In the event that we decide not to order the Change accepted, you shall be entitled to compensation for the cost of preparing the Change Proposal described in your Estimate for Change Proposal mentioned in para. 3 above in accordance with GCC Clause 39 of the General Conditions.

[*Employer's name*]

[*Signature*]

[*Name of signatory*]

[*Title of signatory*]

6.2.4 Change Proposal Form

[Contractor's letterhead]

To: [Employer's name and address]

Date:

Attention: [Name and title]

Contract Name: [Contract name]

Contract Number: [Contract number]

Dear Ladies and/or Gentlemen:

In response to your Request for Change Proposal No. [Number], we hereby submit our proposal as follows:

1. Title of Change: [Name]
2. Change Proposal No./Rev.: [Proposal number / revision]
3. Originator of Change: Employer: [Name] / Contractor: [Name]
4. Brief Description of Change: [Description]
5. Reasons for Change: [Reason]
6. Facilities and/or Item No. of Equipment related to the requested Change: [Facilities]
7. Reference drawings and/or technical documents for the requested Change:
[Drawing/Document No./Description]
8. Estimate of increase/decrease to the Contract Price resulting from the Change Proposal:

	Amount
[insert amounts in the currencies of the Contract]	
(a) Direct material	_____
(b) Major construction equipment	_____
(c) Direct field labour (Total hrs)	_____
(d) Subcontracts	_____
(e) Indirect material and labour	_____
(f) Site supervision	_____
(g) Head office technical staff salaries	
Process engineer _____ hrs @ _____ rate/hr	_____
Project engineer _____ hrs @ _____ rate/hr	_____
Equipment engineer _____ hrs @ _____ rate/hr	_____
Procurement _____ hrs @ _____ rate/hr	_____
Draftsperson _____ hrs @ _____ rate/hr	_____
Total _____ hrs	_____

- (h) Extraordinary costs (computer, travel, etc.) _____
- (i) Fee for general administration, % of Items _____
- (j) Taxes and customs duties _____
- Total lump sum cost of Change Proposal [Sum of items (a) to (j)]
- Cost to prepare Estimate for Change Proposal [Amount payable if Change is not accepted]

- 9. Additional time for Completion required due to Change Proposal
- 10. Effect on the Functional Guarantees
- 11. Effect on the other terms and conditions of the Contract
- 12. Validity of this Proposal: within [Number] days after receipt of this Proposal by the Employer
- 13. Other terms and conditions of this Change Proposal:
 - (a) You are requested to notify us of your acceptance, comments or rejection of this detailed Change Proposal within [Number] days from your receipt of this Proposal.
 - (b) The amount of any increase and/or decrease shall be taken into account in the adjustment of the Contract Price.
 - (c) Contractor's cost for preparation of this Change Proposal: [. . . insert amount. This cost shall be reimbursed by the employer in case of employer's withdrawal or rejection of this Change Proposal without default of the contractor in accordance with GCC Clause 39 of the General Conditions . . .]

[Contractor's name]
 [Signature]
 [Name of signatory]
 [Title of signatory]

6.2.6 Pending Agreement Change Order Form

[*Employer's letterhead*]

To: [*Contractor's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

We instruct you to carry out the work in the Change Order detailed below in accordance with GCC Clause 39 of the General Conditions.

1. Title of Change: [*Name*]
2. Employer's Request for Change Proposal No./Rev.: [*number/revision*] dated: [*date*]
3. Contractor's Change Proposal No./Rev.: [*number / revision*] dated: [*date*]
4. Brief Description of Change: [*Description*]
5. Facilities and/or Item No. of equipment related to the requested Change: [*Facilities*]
6. Reference Drawings and/or technical documents for the requested Change:
[*Drawing / Document No. / Description*]
7. Adjustment of Time for Completion:
8. Other change in the Contract terms:
9. Other terms and conditions:

[*Employer's name*]

[*Signature*]

[*Name of signatory*]

[*Title of signatory*]

6.2.7 Application for Change Proposal Form

[Contractor's letterhead]

To: [Employer's name and address]

Date:

Attention: [Name and title]

Contract Name: [Contract name]

Contract Number: [Contract number]

Dear Ladies and/or Gentlemen:

We hereby propose that the work mentioned below be treated as a Change in the Facilities.

1. Title of Change: [Name]
2. Application for Change Proposal No./Rev.: [Number / revision] dated: [Date]
3. Brief Description of Change: [Description]
4. Reasons for Change:
5. Order of Magnitude Estimation (amount in the currencies of the Contract): [Amount]
6. Scheduled Impact of Change:
7. Effect on Functional Guarantees, if any:
8. Appendix:

[Contractor's name]

[Signature]

[Name of signatory]

[Title of signatory]

7. Personnel Requirements

Using Form PER-1 and PER-2 in Section 4 (Bidding Forms), the Bidder must demonstrate that it has personnel who meet the following requirements:

Sr. No	SECTOR	QUALIFICATION	EXPERIENCE LEVEL	NUMBERS
1.	Chief Project Manager (Team Leader)	Graduate in electrical/mechanical engineering.	minimum 3 years as in-charge of similar works and minimum total experience of 15 years	1
2.	Chief Coordinator (Dy. Chief Project Manager)	Graduate in electrical/mechanical engineering.	having 2 year metro experience and minimum total experience of 10 years	2 (1 EACH FOR ROCS/ASS WORKS)
3	Design Engineers			
a.	ROCS Design Engineers	Graduate in concerned disciplines	10 years experience out of which 3 years in the underground metro rocs system design	1
b.	ASS Design Engineers		10 year's experience out of which 3 years in the underground metro ass system design	1
c.	SCADA Design Engineers		10 years experience out of which 3 years in traction SCADA system design.	1
4	Quality Assurance Specialist	Graduate in electrical/mechanical engineering.	10 years experience out of which 3 years in construction related activity.	1
5	Installation Engineer (ROCS)	* 1 team comprising of all necessary engineering and technical staff and supportive staff		
6	Installation Engineer (ASS)	*1 team comprising of all necessary engineering and technical staff and supportive staff		
7	Installation Engineer (SCADA)	*1 team comprising of all necessary engineering and technical staff and supportive staff		
8	Safety Staff	As per SHE Manual		

In case JMRC judges that the continuation of any person of the bidder including its subcontractor (s) is not in the interest of the project, a written notice will be given to the bidder who will promptly remove the person within a week. JMRC can withdraw the approval of such persons if continuation of the person is judged by the JMRC.

NOTE – Please submit the CV of above Key Personals (up to resident engineers) in the format prescribed in PER-2.

STAMP & SIGNATURE OF AUTHORIZED SIGNATORY

8. Equipment Requirements

Using Form EQU in Section 4 (Bidding Forms), the Bidder must demonstrate that it has the key equipment listed below:

No.	Equipment Type and Characteristics	Minimum Number Required
1	Bidder to specify the available machineries, tools, plants and testing equipments that will be available by them during execution of the works.	
2		
3		
4		
5		

9. Schedule of Key Dates

All number refer to weeks from Commencement Dates of the works

(A) Key dates for– Rigid OHE (ROCS) Works

Key Dates	Description	Key Date in Weeks Chand pole to Badi Chaupar Corridors
KD-1	Preliminary Design Submission	16
KD-2	Definitive Design Submission	24
KD-3	Submission of Preliminary Simulation Study	16
KD-4	Submission of Final Simulation Study	24
KD-5	Submission of Earthing and Bonding scheme along with detailed drawings based upon Simulation study.	30
KD-6	Submission of Detail Engineering and Submittal of Technical proposals of major equipment/vendors to Engineer for Approval along with technical parameters.	20
KD-7	Delivery of major material at Site e.g. Contact wire, Aluminum Rail, insulator, bracket, Section insulator, Tunnel Earth Wire, GIS Interrupters/ Circuit Breakers, Return Conductor, Earth Wire, SCADA Equipment etc	52
KD-8	Installation of Rigid Catenaries System in tunnel sections, Neutral sections and completion of Earthing & bonding	56
KD-9	Installation of all equipment at SP (Sectioning Post) and Sub Sectioning Post as per the Cost Centers	60
KD-10	Testing and Commissioning of Rigid Catenaries System (ROCS) in tunnel Sections and SP (Sectioning Post) and Sub Sectioning Post as per the Cost Centers	64
KD-11	Charging of the Sectioning Post & Rigid OCS (ROCS) for Trail Runs, Signaling & rolling stock testing.	66
KD-12	Submission of Report by Independent Agency for Verification (Auditing) of design and installation of ROCS.	74
KD-13	System Acceptance Test including Integrating Testing of Rigid OCS of Section and checking/ measuring parameters e.g. step and touch Voltage and Parameters obtained by Simulation Study.	80
KD-14	Taking-over Certificate	104

(B) Key dates for Auxiliary Substations (ASS) Works

Key Dates	Description	Key Date in Weeks Chand pole to Badi Chaupar Corridors
KD-1	Detail Engineering and Submittal of Technical proposals of major equipment to Engineer for Approval	20
KD-2	Submission of Working Drawings/ Shop Drawings	24
KD-3	Delivery of Major Equipment (33 KV panels, TR's, HT & LT cables, SCADA equipment etc) to Site	52
KD-4	Installation of Majority of ASS Equipment and commence system testing, SCADA testing.	60
KD-5	Commissioning of Auxiliary Sub Stations	64
KD-6	Charging of the Auxiliary power supply network for E&M supply extension and for Trail Runs, Signaling & rolling stock testing.	66
KD-7	Completion of acceptance test after integrated testing with SCADA System	74
KD-8	Taking over of the system	104

10. Statements of Deviations

Chapter Number	Clause Number	Details of Deviations	Remarks explaining reasons for deviations and why it may be considered by the employer	Confirming that price of withdrawal of each deviation/s is given in Financial Package (Yes/No)

1. We hereby confirm that the pricing for unconditional withdrawal of the above deviations has been given in the financial bid.
2. We hereby confirm that all implicit and explicit deviations, comments and remarks mentioned elsewhere in our proposal shall be treated as NULL and VOID and stand withdrawn.
3. We hereby confirm that but for the deviations noted in this, our offer is fully and truly compliant.

STAMP & SIGNATURE OF AUTHORIZED SIGNATORY

Note:

Where there is no deviation, the statement should be returned duly signed with an endorsement indicating 'No Deviations'. In case, Performa of deviations is not submitted or submitted as blank, it will be construed that the bidder has not proposed any deviations from bid documents and will provide all equipment as per specifications.

Pricing of Unqualified Withdrawal of
Conditions, Qualifications, Deviations, etc

(To be submitted with financial bid only)

Item	Condition, Qualification, Deviation, etc	Key date affected by each condition, qualification, deviation, etc.	Increase or Decrease for unqualified withdrawal of each conditions, qualification, deviation etc	
			<u>Foreign Currency</u>	<u>Indian Rupees</u>
Total				

Note: In completing this appendix, the Bidder shall show every key date that will be affected by each condition, qualification, deviation, etc., included in his Financial Package for the unqualified withdrawal of that condition, qualification, deviation, etc.

1. We hereby confirm that the pricing for unconditional withdrawal of the above deviations has been given in the financial bid.
2. We hereby confirm that all implicit and explicit deviations, comments and remarks mentioned elsewhere in our proposal shall be treated as NULL and VOID and stand withdrawn.
3. We hereby confirm that but for the deviations noted in this Statement of Deviation our offer is fully and truly compliant.

STAMP & SIGNATURE OF AUTHORIZED SIGNATORY

11. Electrical Contractor License

(To be enclosed for Bidder or the Licensed Electrical Contractor)

12. Outline Quality Plan

1. Bidder shall submit an Outline Quality Plan illustrating the intended means of compliance with of the Employer's Requirements and setting out in summary form an adequate basis for the development of the more detailed document required as per SCC. The Outline Quality Plan shall contain sufficient information to demonstrate clearly the proposed method of achieving the Bidder's quality objectives with regard to the Employer's Requirements.
2. Bidder shall establish and maintain a Quality Assurance System in design and construction procedures and the interfaces between them. This Quality Assurance system shall be applied without prejudice to, or without in any way limiting, any Quality Assurance Systems that the Bidder already maintains.
3. The Bidder shall submit as part of his Bid an Outline Quality Plan which shall contain sufficient information to demonstrate clearly the Bidder's proposals for achieving effective and efficient Quality Assurance System. The Outline Quality Plan should include an outline of the procedures and regulations to be developed and the mechanism by which they will be implemented for ensuring Quality as required.
4. Bidder may be requested by the Employer to amplify, explain or develop its Outline Quality Plan prior to the date of acceptance of its Bid and to provide more detail with a view to reaching provisional acceptance of such a plan.

13. Outline Safety, Health and Environment (SHE) Plan

1. Bidder shall submit with its Bid an Outline Safety, Health and Environment Plan which shall contain sufficient information to demonstrate clearly the Bidder's proposals for achieving effective and efficient safety, health & environment procedures. The Outline Safety, Health and Environment Plan should include an outline of the safety procedures and regulations to be developed and the mechanism by which they will be implemented for ensuring safety as required by the Employer's Requirements.
2. The Outline Safety, Health and Environment Plan shall be headed with a formal statement of policy in relation to safety, health & environment and shall be sufficiently informative to define the Bidder's safety plans and set out in summary an adequate basis for the development of the Site Safety, Health and Environment Plan to be submitted in accordance with the Employer's Requirements.
3. Bidder may be requested by the Employer in writing to amplify, explain or develop its Outline Safety, Health and Environment Plan prior to the date of acceptance of the Bid and to provide more details with a view to reaching provisional acceptance of such a plan.

14. Detail of foreign currency

(Bidder should submit the details regarding the type of foreign currency used in the Bill of Quantities with the technical proposal)

S.No.	Name of Currency	Remarks
1		
2		
3		

15. PROPOSAL FOR EQUIPMENT / SYSTEMS

Sl. No.	Name of the equipment/system	Minimum Number required	Name of vendor	Address of the vendor	Contact Details
1	25 kV Rigid OCS with all its components, fittings and fixtures				
2.	25kV cable straight joints				
3.	25kV cable termination kits				
4	Transition element				
5.	Contact Wire				
6.	Rigid OHE fittings				
7	27.5 kV GIS				
8	Measuring & Protection equipment.				
9	Batteries				
10	Insulators				
11	Lightning Arresters				
12	Circuit breakers/ Interrupters (33kV/25kV)				
13	Measuring & Protection equipments.				
14	XLPE/ FRLS Cables (33kV/ 25kV/ LT Cables/ Control Cables) and XLPE LSOH Cables				
15	Motorized Isolators.				
16	Manual Isolators.				
17	Auxiliary Transformer (33 kV/0.415 kV)				
18	UPS				
19	SCADA equipment.				
20	SCADA system				