

1.1.0 INTRODUCTION & INTENT OF SPECIFICATION

1.1.1 BHEL is executing on turnkey basis the following substation packages:

- (a) **220/20kV New Substation at Charikar, Afghanistan.**
- (b) **220/20kV New Substation at Doshi, Afghanistan**

1.1.2 The Customer is **Powergrid Corporation of India Limited (PGCIL)**. This project is being constructed for **Ministry of Energy and Water (MEW), Islamic Republic of Afghanistan.**

1.1.3 BHEL intends to off-load the complete **Civil Works associated with the above project on a back-to-back basis** to the bidder whose offer is found to be most competitive.

1.2.0 SCOPE OF WORK

1.2.1 The scope of work shall cover, **in complete conformity to the PGCIL specification, on a back to back basis**, the following, for both the substations:

A. Design & drawing.

- 1. Civil design & detailed engineering of various works **except** the following:
 - (a) Design/drawing of beams, towers & equipment support structures for which the design/drawings shall be done by BHEL. The loads on foundations shall be provided to the successful bidder for design/drawing of foundations).
 - (b) Works for which standard drawings are provided by Customer (PGCIL)

B. Materials.

- 1. Supply of cement, reinforcement steel, structural steel and all other materials for the civil construction works.

C. Construction Works.

- 1 Soil Investigation.
- 2 Foundation of transformers alongwith jacking pad, foundation bolts, rail track and fire resistance wall between transformers.
- 3 Foundation for lattice & pipe structures and equipments including DG Set.
- 4 Foundation for lighting poles, bay marshalling box, panels and control cubicles of equipment wherever required.
- 5 Antiweed treatment, PCC and stone spreading of substation area.
- 6 Permanent water supply for control room building.
- 7 Building for store (50sqm) with roof steel truss and 0.9mm thick CGI sheeting.
- 8 Foundation for 100kVA auxiliary LT transformer.
- 9 Control room building cum administrative building and switchgear hall with RCC sloping roof.
- 10 Alignment of approach road from highway to sites.

- 11 Borewell and distribution network for water supply.
- 12 Cable trenches along with covers and sump pits (As per PGCIL drawings)
- 13 Cable trench crossings with roads, rail tracks, culverts etc. (As per PGCIL drawings)
- 14 All roads including approach road from nearest existing road (As per PGCIL drawings)
- 15 Substation site leveling (As per enclosed spot level and leveling drawing)
- 16 Complete drainage system in the substation area (Section details as per PGCIL drawings)
- 17 Substation boundary wall, fencing, gates and security room (As per PGCIL drawings)
- 18 Other miscellaneous works as required for project.

The works to be performed in the above constructions include preparation of bar bending schedules, based on the drawings released for construction and getting the same approved by the Engineer-in-charge plus the execution of the work including providing of all labor, supervision, materials, scaffolding, power, fuel, construction equipments, tools and plants, supplies, transportation, all incidental items necessary for successful completion of the work including contractor's supervision and in strict accordance with the drawings and specifications and with inspection and testing standards. The nature of work shall generally involve excavation in all type of soil including dewatering, shoring, strutting, and filling under and around structures, backfilling with available excavated earth around completed structures and cable trenches with covers, road crossing of trenches, disposal of surplus soil, concreting including reinforcement and formwork, providing necessary steel embedments and other inserts, roadwork, drainage work, fencing & gravel/stone spreading, building works including all finishing, etc., all complete as per detailed specification, drawings and directions of Engineer-in-charge.

D. Other Works.

Provision and maintenance of all temporary site construction building, facilities, office, storage, personnel accommodation facilities, transportation, water & power distribution and all other materials and services which may be required by legal dispositions, all labour and constructional equipment, management and supervisory staff to construct and commission the works.

1.3.0 SPECIFIC TECHNICAL REQUIREMENT

- 1.3.1 The specific technical requirements for the execution of civil works shall be as per PGCIL Specifications & drawings/CPWD Specifications. In case of any conflict between these, PGCIL Specifications & drawings shall prevail.

1.4.0 BILL OF QUANTITIES

- 1.4.1** The quantities indicated in the Price Schedules are indicative and can vary to any extent. Contractor shall not be entitled for any claim for any such variation in the quantities.
- 1.4.2** The provision of price schedules, specifications and drawings shall be read in conjunction with each other and in case of conflict amongst them, the clarification shall be obtained from the Engineer-in-charge whose decision shall be final and binding.