

TENDER SPECIFICATION

NO: BHE/PW/PUR/HONGI-GEO/1445

**GEO- TECHNICAL INVESTIGATION AND TOPOGRAPHICAL
SURVEY**

AT

**OIL & NATURAL GAS CORPORATION LTD (ONGC)
HAZIRA, GUJARAT**

VOLUME – II

PRICE BID SPECIFICATION



Bharat Heavy Electricals Limited

(A Government of India Undertaking)

Power Sector - Western Region

345-Kingsway, Nagpur-440001

TENDER SPECIFICATION

NO: BHE/PW/PUR/HONGI-GEO/1445

GEO- TECHNICAL INVESTIGATION AND TOPOGRAPHICAL SURVEY

AT

**OIL & NATURAL GAS CORPORATION LTD (ONGC)
HAZIRA, GUJARAT**

EARNEST MONEY DEPOSIT: Refer Notice Inviting Tender

LAST DATE FOR TENDER SUBMISSION: Refer Notice Inviting Tender

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING VOLUME-I AND VOLUME- II ARE ISSUED TO:

M/s.

.....

PLEASE NOTE:
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

AGM (Purchase)
Place: Nagpur
Date

GEO TECHNICAL INVESTIGATIONS & TOPOGRAPHICAL SURVEY OF 51 MW GAS BASED COMBINED CYCLE CAPTIVE POWER PLANT AT OIL & NATURAL GAS CORPORATION LTD (ONGC) HAZIRA , GUJARAT

S.N O	ITEM DESCRIPTION	UNIT	QTY	Unit Price In (Rs)	Unit Price in Words	Total Amount In Rs
SECTION-A GEO TECHNICAL INVESTIGATION						
1	Mobilization of boring rig, other in-situ test equipment etc.	LS	1			
2	Boring through all kinds of soil/soft rock including taking out undisturbed soil samples and water samples, maintaining necessary driving records of standard penetration test at various depths including back filling with sand and furnishing the necessary reports and data in the bore log form, to the Engineer. (One transparency and six copies each)					
	a) Up to 30.0m depth from existing ground level	Nos	26			
	b) Extra per meter depth of boring beyond 30m up to 35m	RM	130			
3	Making test bores by drilling through rock or terminating in the hard rock (in continuation of item 2 above) including taking out rock cores, as specified, maintaining necessary drilling record and submitting them in bore log form, to the Engineer, (one transparency & six copies each):					
	a) Coring in soft/weathered rock with TC bit.	Mts.	130			
	b) Coring in hard rock with diamond bit.	Mts.	26			
4	a) Digging trial pits, taking undisturbed/disturbed soil samples and carrying out plate load tests, as per specification 3.6.0, at depth of 2.5m below existing ground level, including de-watering, if required and back filling after tests, using 600X600mm plates.	Nos.	5			
	b) extra over every 1 m increase in depth.	M	5			
5	Conducting cross hole seismic survey to obtain dynamic soil properties, at various depths/ layers	Nos.	2			
6	Conducting Vane shear tests in clays as per IS: 4434 (Bottom of bore hole method).	Nos.	2			
7	Conducting Electrical resistivity tests for evaluation of soil resistivity at different depths.	Nos.	22			
8	Conducting Static cone penetration test	Nos.	4			
10	Conducting In-situ permeability test (pumping out)	Nos.	2			
11	Conducting field CBR test	Nos.	3			
12	Conducting field percolation test	Nos.	4			
13	Soil sample Tests in approved laboratory					
	a) Natural moisture content	Nos.	78			
	b) Particle size analysis					
	i) Sieve	Nos.	104			
	ii) Mechanical analysis (hydrometer)	Nos.	52			
	c) Index properties (liquid, plastic and shrinkage limits and plasticity index)	Nos.	52			
	d) Bulk and dry density	Nos.	52			
	e) Specific gravity and void ratio test	Nos.	52			
	f) Unconfined compression test	Nos.	52			
	g) Triaxial tests					
	i) Undrained	Nos.	52			
	iii) Drained	Nos.	52			
	h) Direct shear test	Nos.	26			

GEO TECHNICAL INVESTIGATIONS & TOPOGRAPHICAL SURVEY OF 51 MW GAS BASED COMBINED CYCLE CAPTIVE POWER PLANT AT OIL & NATURAL GAS CORPORATION LTD (ONGC) HAZIRA , GUJARAT

S.No	ITEM DESCRIPTION	UNIT	QTY	Unit Price In (Rs)	Unit Price in Words	Total Amount In Rs
	i) Consolidation test (odometer)	Nos.	26			
	j) Specific gravity of rock	Nos.	26			
	k) Crushing Strength of rock					
	i) Soaked condition	Nos.	13			
	ii) Unsoaked Condition	Nos.	13			
	l) Chemical analysis for					
	i) Soil	Nos.	13			
	ii) Subsoil water	Nos.	13			
	m) Differential free swell test	Nos.	16			
15	Preparation and submission of draft soil report on Geo-Technical investigations in three copies and final report in 5 hard copies and 2 soft copies on Cd after approval of draft report including all field records, laboratory test results, graphs, analysis of test results, photographs showing details of field tests/soil/rock samples/trial pits and recommendation etc all complete as per specification.	LS	1			
					Total Section-A	
	SECTION-B TOPOGRAPHICAL SURVEY					
16	Topographical Survey					
	a.) Carrying out bench mark from the nearest GTS bench mark or any other available source as approved by the engineer-in-charge to different locations in the project area including clearing of jungles and/or cutting trees and any other works required for completion of the said item etc all complete as per specification and instructions of the engineer-in-charge. (Construction of bench mark pillar to be paid separately)	KM	5			
	b.) Carrying out topographical survey of plant and allied areas showing all permanent & general features and detailed contour survey by taking spot levels at 25m interval, carrying out cross section of canal/nallah by taking spot levels at 5m interval or less including clearance of jungles and cutting of trees etc which are interfering with the survey works and any other field works necessary for the completion of the said item, preparation and submission of all plans (maps),reports, floppy and originals etc all complete as per specification and instructions of the	Sq M	18000			
	c.) Construction of bench mark pillar/reference pillar/grid pillar at different locations including clearing of jungles, excavation, supply of materials, pillar marking, backfilling, white washing, painting on MS plate etc all complete as per specification, drawings and instructions of the engineer-in-charge.					
	a) Bench mark pillar	Nos.	1			
	b) Grid/reference pillar	Nos.	6			
					TOTAL SECTION-B	
					GRAND TOTAL (SECTION-A+SECTION-B)	
					Total amount in Words	