भारत हेवी इलेक्ट्रिकल्स लिमिटेड
(भारत सरकार का उपक्रम)
BHARAT HEAVY ELECTRICALS LIMITED
(A Govt. of India Undertaking)

TCN - 02

Ref: PSER:SCT: LPT-C1105:TCN-02 Date: 15-05-2010

Sub	Tender change notice (TCN) 02.	
Job	**Geotechnical investigation & topographical survey for 53 MW COMBINED CYCLE POWER PLANT at BCPL, Lepetkata, Assam**.	
Ref	01	Tender no PSER:SCT:LPT-C1105:10.
	02	BHEL's NIT vide reference no PSER:SCT:LPT-C1105:10, dated 08-05-2010.
	03	BHEL's TCN-01, vide reference no PSER:SCT: LPT-C1105:TCN-01, dated 11-05-2010.
	04	Other references (if any).

With reference to above, following points & documents, relevant to tender, may please be noted and complied with while submitting offer.

1.0 In Volume- II, ***Sl. No. 22 - Permeability (Pump-Out) Test of 24.0 TECHNICAL SPECIFICATION is revised as Sl. No. 22 – In situ Permeability (Pump-in) with details as per Annexure – A.***

2.0 The tender document Volume-IIIA, Rev.0, Price Schedule (Absolute value) stands revised as Volume – III A,Rev.1 Price schedule (Absolute value).The **Volume III A, Rev.1, Price Schedule (Absolute Value)** as enclosed shall be considered for the above tender.

3.0 Revised no deviation certificate, Annexure-2 as enclosed to be submitted along with offer.

4.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

DGM (SCT)

Encl

1.0 Revised format of `No deviation certificate' as per Annexure-2.

2.0 Revised Volume IIIA, Rev.1, Price Schedule (Absolute Value)

3.0 Annexure -A to TCN-02.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)
POWER SECTOR EASTERN REGION, DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091
फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : 23211691

ANNEXURE - 2

FORMAT FOR NO DEVIATION CERTIFICATE
(To be submitted in the bidder's letter head)

BHARAT HEAVY ELECTRICALS LIMITED,
Power Sector - Eastern Region,
Plot no 9/1, DJ Block, Sector – II, Salt Lake City,
Kolkata – 700 091

Sub	No Deviation Certificate.	
Job	**Geotechnical investigation & topographical survey for 53 MW COMBINED CYCLE POWER PLANT at BCPL, Lepetkata, Assam.**	
Ref	01	Tender no PSER:SCT:LPT-C1105:10.
	02	BHEL's NIT vide reference no PSER:SCT:LPT-C1105:10, dated 08-05-2010.
	03	BHEL's TCN-01, vide reference no PSER:SCT: LPT-C1105:TCN-01, dated 11-05-2010.
	04	BHEL's TCN-02, vide reference no PSER:SCT: LPT-C1105:TCN-02, dated 15-05-2010.
	05	Other references (if any).

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website and in case of observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT and confirm our acceptance to reverse auctioning process and we hereby convey our unqualified acceptance to all terms and conditions as stipulated in the tender and NIT. We hereby confirm to unqualified compliance to technical specification together with other references as enumerated in above.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void. We confirm to have submitted offer strictly in accordance with tender instructions.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized representative of the bidder)

22.0 In- Situ Permeability (Pump-in) Test

Bore Hole Cleaning :

The bore hole shall be cleaned using suitable tools up to the depth of testing or sampling ensuring that there is minimum disturbance of soil at the bottom of the bore hole. The process of jetting through an open tube sampler shall not be permitted. In cohesive soils, the borehole may be cleaned using a bailer with a flap valve. Gentle circulation of drilling fluid shall be done when rotary mud circulation boring is adopted.

Pump-in-Test

Pump-in test shall be conducted in the bore hole/trial pit by allowing water to percolate into the soil. Choice of the method of testing shall depend on the soil permeability and prevailing ground water level.

Only clear water shall be used for conducting the test. Before conducting the test, the borehole shall be cleaned as specified above. Water shall be allowed to percolate through the test section for sufficient period of time to saturate the soil before starting the observation.

a) Constant Head Method (In Bore Hole)

This test shall be conducted in boreholes where soil has a high permeability. Water shall be allowed into the borehole through a metering system ensuring gravity flow at constant head so as to maintain a steady water level in the borehole. A reference mark shall be made at a convenient level which can be easily seen in the casing pipe to note down the fluctuations of water level. The fluctuations shall be counteracted by varying the quantity of water flowing into the borehole. The elevation of water shall be observed at every 5 minute interval. When three consecutive readings show constant value, the necessary observations such as flow rate, elevation of water surface above test depth, diameter of casing pipe etc shall be made and recorded as per the proforma recommended in IS: 5529, Part-1, Appendix-A.

b) Falling Head Method (In Bore Hole)

This method shall be adopted for soils of low permeability and which can stand without casing. The test section shall be sealed at the bottom of the borehole and a packer at the top of the test section. If the test has to be conducted at an intermediate section of a pre-bored hole then double packers shall be used. Access to the test section through the packer shall be by means of a pipe which shall extend above the ground level. Water shall be filled into the pipe up to the level marked just below the top of the pipe and water be allowed to drain into the test section. The water level in the pipe shall be recorded at regular intervals as mentioned in IS: 5529, Part-1, Appendix-B. The test shall be repeated till constant records of water level are achieved.

VOLUME-IIIA

(**BOQ CUM RATE SCHEDULE**)

NAME OF THE PROJECT : 53 MW COMBINED CYCLE POWER PLANT AT LEPETKATA, ASSAM

NAME OF THE TENDERER: _____

SUMMARY OF THE TENDERER'S PRICE

Total price as shown in schedule of items and rates/ prices

_____

Signature of the tenderer.

SIGNATURE OF THE BIDDER WITH SEAL

NOTES

1. Details of items shall be read in conjunction with the corresponding specifications, drawings and other tender terms.

2. The tenderer shall quote for finished items and shall provide for all necessary power, fuel, tool and plant, tackle, materials, transport of materials labour, supervision and maintenance till handing over, repairs, rectification etc. as per tender terms.

3. Quantities mentioned in the schedule of items depend upon the type of soil actually met with during execution and may vary to any extent. The quantities are indicated merely for the purpose of quoting rates. Payment shall be based on actual work done both in the field and laboratory. The contractor shall carry out all the works up to variation of 20% of the total contract value and all tendered rates shall remained firm within this limit.

4. Every page of schedule of items and rates/ prices, shall be signed by the tenderer.

SCHEDULE OF QUANTITIES

SL.No	Item	Approx Qty.	Unit	Rate in		Amount
				Figs. Rs.	Words.Rs	Rs.
1.	Mobilization of boring plant other in-situ test equipment etc.	L.S				
2.	Boring through all kinds of soil/soft rock including taking out undisturbed soil 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 CD copy and six hard copies).					
	a) Up to 30.0m depth from existing ground level.	24	Nos.			
	b) Extra per meter depth of boring beyond 30m.	10	Mts.			

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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.	5	Mts.			
	b) Coring in hard rock with diamond bit.	5	Mts.			
4.	Digging trial pits, taking undisturbed/disturbed soil samples and carrying out plate load tests, as per specification 5.0.0, at depth of .5m below existing ground level, including de- watering, if required and back filling after tests, using 600X600mm plates.	6	Nos.			
5.	Conducting cross hole survey to obtain dynamic soil properties, at various depths/layers.	3	Nos.			
6.	. Deleted.					
7.	Conducting Vane shear tests in clays as per IS: 4434 (Bottom of bore hole method).	24	Each			
8.	Conducting Electrical resistivity tests for evaluation of soil resistivity at different depths.	30	Each			
9.	Conducting Static cone penetration test	5	Nos.			

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10	Deleted	-	-			
11	Conducting In-situ permeability test (pump in method)	1	Each			
12	Conducting field CBR test	5	Nos.			
13	Deleted	-	-			
14	Soil sample Tests in approved laboratory.					
	a) Natural moisture content.	75	Each			
	b) Particle size analysis					
	i) Sieve.	75	Each			
	ii) Mechanical analysis (hydrometer).	75	Each			
	c) Index properties (liquid, plastic and shrinkage limits and plasticity index).	75	Each			
	d) Bulk and dry density.	50	Each			
	e) Specific gravity and void ratio test.	50	Each			
	f) Unconfined compression test.	60	Each			
	g) Triaxial tests					
	i) Undrained.	60	Each			
	iii) Drained.	60	Each			
	h) Direct shear test.	30	Each			
	i) Consolidation test (odometer).	15	Each			
	j) Specific gravity of rock.	60	Each			
	k) Crushing Strength of rock.					
	i) Soaked condition.	60	Each			
	ii) Unsoaked Condition.	60	Each			

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	l) Chemical analysis for i) Soil. ii) Subsoil water.	 30 30	 Each Each			
	m) Permeability Test(Constant Head)	15	Each			
	n) Differential free swell test.	30	Each			
	o) Cyclic Triaxial Test.	15	Each			
	p) CBR test i) Soaked ii) Un soaked	 20 20	 Each Each			
15.	Preparation and submission of soil report on Geo-Technical investigations.	L.S.				
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)	1	Km.			
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	3500	Sq. m			

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	originals etc all complete as per specification and instructions of the engineer-in- charge.					
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 b) Grid/reference pillar	1 20	Each Each			

Total Price in Rs.: _____

Total Price in word: _____

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