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

TCN - 01

Ref: PSER:SCT:BRM-B1327:TCN-01 Date: 17-04-2012

Sub	Tender change notice (TCN) 01.	
Job	(i) **PACKAGE-A:** Erection, testing, commissioning etc of Boiler & Auxiliaries, along with critical piping at 1x250 MW Unit#8 for 2x250 MW Extension project at Begusarai, Bihar. (ii) **PACKAGE-B:** Erection, testing, commissioning etc of Boiler & Auxiliaries, along with critical piping at 1x250 MW Unit#9 for 2x250 MW Extension project at Begusarai, Bihar.	
Ref	1.0	PSER:SCT:BRM-B1327:12
	2.0	BHEL's NIT, vide reference no PSER:SCT:BRM-B1327:2790, dated 13-04-2012.
	3.0	All other pertinent issues till date.

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

1.0 **'Technical Specification for LP piping'** as per attached Annexure-A
2.0 Revised `No deviation certificate' as per enclosed Annexure-2. Bidder shall submit no deviation certificate as per enclosed format only.
3.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HYEAVY ELECTRICALS LTD

ENGR(SCT)

Encl
1.0 As above.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)
POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091
फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : 23211691, 23211798, 23211796

TECHNICAL SPECIFICATION FOR LP PIPING

CLAUSE NO	DESCRIPTION
1.0	**BROAD SCOPE OF WORK**
1.1	This specification covers complete work of handling including arranging for issue of material, receipt from store/ yard, transportation to site, temporary storage prior to erection, erection & welding, dewatering during erection, protective coating (as applicable), final painting, testing at site and commissioning of CW/ LP piping and associated materials as mentioned in different sections of this tender for 2x250 MW Barauni Extension project.
1.2	It is not the intent of this specification to specify herein all the details of erection and commissioning. However, the system shall conform in all respects to high standards of quality and workmanship for performing the required duties in a manner acceptable to purchaser who will interpret the meaning of drawings and specifications and shall be entitled to reject any work or material, which in their judgment is not in full accordance herewith.
1.3	Unless otherwise specifically brought out, it will be presumed that the bidders' offer is strictly in line with this specification and no deviation will be allowed after the award of contract.
1.4	The general terms and condition, instructions to tenderer and other attachments referred to elsewhere are hereby made part of the tender. The bidder will be responsible and governed by all requirements stipulated hereinafter.
1.5	The omission of specific reference to any fabrication/ erection method, equipment or material necessary for proper & efficient working of the plant shall not relieve the bidder of the responsibility of providing such facilities to complete the work at quoted rates. Any mismatch/ defect found due to mistake in fabrication/ erection shall have to be rectified by the bidder free of cost. Inspection by BHEL/ customer does not relieve bidder of their responsibility of executing quality erection.
1.6	Following shall be bidder's responsibility and have to be provided within contract price.
1.7	Provision as required of all types of labour, supervisors, engineers, watch & ward, tools & tackles, calibrated IMTEs (Inspection, measuring and testing equipment) as specified and otherwise required for work, consumables for erection, testing and commissioning including material handling.
1.7.1	Proper out-turn as per BHEL plan and commitment.
1.7.2	Completion of work as per BHEL schedule.
1.7.3	Good quality and accurate workmanship for proper performance of the equipment.
1.7.4	Repair and rectification.
1.7.5	Preservation/ re-conservation of all components during storage/ erection/ commissioning till handing over.
1.7.6	All quality standards, tolerances, welding standards & other technical requirements shall be strictly adhered to. The Bidder shall fully apprise himself of the prevailing conditions at the proposed site, climatic conditions including monsoon pattern, soil conditions, local conditions and site specific parameters and shall include for all such conditions and contingent measures in the bid, including those which may not have been specifically brought out in the specifications.
1.8	All other points shall be as per the terms & conditions and specification along with aforesaid references together with amendments incorporated thereto.
2.0	**TECHNICAL SPECIFICATION**
2.1	This specification is mainly intended to cover the erection & commissioning of CW/ low pressure piping/ misc piping, which shall cover handling from storage, erection, testing, inspection, supply & application of burried protective coating, final painting, testing, servicing and commissioning of piping & fittings as covered in specification.
2.2	The work to be carried out under the scope of this specification shall broadly comprise of but not be limited to the following systems.
2.2.1	Package A mainly consists of following.
2.2.1.1	CW, ACW piping of unit # 8

2.2.1.2	Any common system piping under CW/ ACW
2.2.2	Package B mainly consists of CW, ACW piping of unit # 9.
2.2.3	The scheme of CW, ACW system is enclosed for ready reference (tender purpose only).
2.2.4	All CW, ACW piping system to be completed included all its drains and vents, impulse lines as applicable.
2.3	BHEL reserve the right to get executed any LP piping system work (permanent/ temporary/ contingency) through the contractor (not specifically mentioned in the tender) based on project requirement and payment shall be made as per applicable price schedule. However, no extra payment shall be made for dismantling of temporary/ contingent piping system
2.4	The welding of pipes at terminal points shall be under the scope of this package and required to be done by the vendor.
2.5	Final flange connection with equipments like oil coolers/ PHE/ self cleaning strainers/ gas coolers etc is to be done by the bidder. Gaskets if required replacement due to leakage/ damage during erection is to be replaced by the vendor free of cost including supply of the gasket of required specification. Terminal point for CW piping at condenser end will be butter fly valve.
2.6	During initial unit commissioning activities, ACW system availability thorugh temporary piping and valves may be required. Erection of the same is in the vendor scope. Payment will be made as per applicable erection rate. The piping, valves etc will be provided by BHEL free of cost. However dismantling of the piping, valve etc, its cleaning and edge preperation, for its reuse, if required, will have to done by the contractor without any extra claim.
2.7	All pipes including CW piping shall be supplied by BHEL in fabricated condition. Fittings like tees, reducers, elbows, manholes, mitre bends, flanges for CW piping shall be supplied by BHEL in fabricated condition. cutting of tees, elbows/ reducers to suit the pipe fitting/ erection as required for CW piping is to be done without any extra claim.
2.8	The contractor may have to carry out fabrication of mitre bends, tees, reducer of sizes NB 250 and above for LP piping systems (other than CW piping systems) - pipes will be supplied in running meters by BHEL free cost. Required number of mitre bends, tees to be fabricated by the LP piping erection contractor. Payment shall be made as per applicable item of price schedule.
2.9	CW pipes will be supplied with internal coating (except approx 200 mm on both ends). Details are indicated in BHEL Quality Plan, available at site.
2.10	Pipes for the LP piping systems (other than CW piping system) will be supplied without external painting.
2.11	Erection & welding, of all valves, misc fittings required to complete the system but not specifically mentioned in relevant annexure of tender is covered in the scope of contract and payment will be made as per applicable piping item of mechanical price schedule. All such materials will be supplied by BHEL. The erection activity of valve also includes cleaning, servicing and final painting of valves. All counter flanges, bolts, nuts, washer, gaskets etc shall be supplied by BHEL loose (free issue).
2.12	Commissioning assistance, post commissioning assistance and valve servicing till commercial handover of the plant to customer are included in the scope of work.
2.13	Calibration and commissioning of motor -actuated valves, pneumatic control valves, calibration of various measuring devices, including cabling is excluded from the scope of work.
2.14	Finished leveling, bed preparation by sand filling (including supply of sand) as per drawing and foxholes (cutting of earth below pipe joint) for welding will be in vendor scope. No seperate payment shall be made on account of finished leveling and sand filling for bed preparation and fox holes and the erection and commission rate as per price schedule of CW piping shall be inclusive of the same.
2.15	Any other connected material supply which is not covered in BOM but required to complete the system shall be erected by the vendor and payment in this case shall be made as per applicable item rate.
2.16	Minor modification of erected pipes shall be carried out by the contractor for which

	no extra claim shall be admissible. Any major rework required after completion of work, shall be carried out based on man-hours and the same shall be done by a special team/ gang without affecting the regular work. The record of extra man-hours in carrying out the re-work shall be maintained by the contractor which shall be duly verified and approved by the purchaser.
2.17	Quantities given in the relevant annexure and price schedule are indicative only. Actual supplies shall be made based on the drawings finally approved by customer.
2.19	Erection of all drains, vents, instrument tapping points with root valves, water traps etc. integral to the piping system shall be in the scope of contractor and site routing of drain, vent and miscellaneous small bore pipe shall be carried out as per direction of BHEL engineers.
2.20	For small bore piping, which is supplied in running length, electro-hydraulic pipe bending machines and pipe chamfering machine will be arranged and used at least to cater 3" schedule 160 pipes at site by the contractor.
2.21	Hanger and support/ anchors/ restraints, stubs for drains/ vents/ welded type thermowells, welding pressure connection, sockets, rain hood, cowls, aux structures for pipe supports etc for piping will be issued free as loose items. Erection, welding, painting etc of these items as per BHEL drawing is in the scope of contractor and payment for these items shall be made as per applicable item of price schedule. Seal welding of threaded thermowell with matching welding electrode is to be done by the vendor without any extra claim.
2.22	All pipe supports/ anchors coming on concrete floors/ walls are to be fixed with expansion/ rawl bolts with nuts. The same will be issued free to the bidder by BHEL.
2.23	Bidders to exercise utmost care while doing execution and commissioning work for this package so that no damage is caused to the existing plant at site. Any such damage will be back charged to bidder.
2.24	The puddle flange for grouting in TG hall and CW pump house wall shall be put in position in the wall by the contractor before casting of wall by BHEL civil contractor.
3.0	**PRECAUTIONS AGAINST FLOATATION**
3.1	When pipe line laid underground or above ground in a long narrow cutting gets submerged in water collected in the trench or cutting, it is subjected to an uplift pressure due to buoyancy and is likely to float if completely or partly empty. In the design of pipelines, provision is made to safeguard against floatation by providing sufficient over burden or by providing sufficient dead weight by means of blocks, etc. In case the works extend over one or more monsoon seasons, special care and precautions are necessary during the progress of work on this account. Contractors shall close pipe line, if required, by blank flanges well in time for the monsoon. The work of providing blocks, refilling the earth to the required level and compacting the same etc shall always be done as soon as the pipe line in the cutting has been laid.
3.2	The contractor shall see that the water shall not be allowed to accumulate in open trenches where work is in incomplete stage, precautionary works such as blank flanging the open ends of the pipe line and filling the pipe line with water etc. shall be taken as directed by the engineer. Such works shall be to the contractor's account and no separate payment will be made for the same.
3.3	Protection of pipeline against floatation during the contract period shall be the responsibility of the contractors. Should any section of the pipe line float due to their negligence etc. the entire cost of laying it again to the correct line and level shall be to the contractor's account.
4.0	**COATING & WRAPPING OF BURRIED PIPES**
4.1	This specification covers the supply of material, application, inspection, testing including supervision of coal tar protection tape.
4.2	CODES & STANDARDS
4.2.1	SSPC – SP1 & SP 10, steel structure painting council (SP-1 solvent cleaning and SP-10 near white blast cleaning).
4.2.2	NACE RP – 02–74, recommended practice, high voltage electrical inspection of pipeline coating prior to installation.
4.2.3	IS 15337:2003, coal tar based anticorrosion tape for protection of underground mild steel pipe lines – specification

4.3	COATING THICKNESS
	The wrapping & coating system shall consist of applying pre-wrapping solution on the cleaned surface followed by the application of anti-corrosion protection tape spirally or circumferentially on the surface keeping proper tension and maintaining good adhesion with an overlap of 12 – 13 mm. The minimum thickness of coating shall be 4.0 mm (two layer of 2 mm thick tape).
4.4	TECHNICAL REQUIREMENTS
4.4.1	The coating and wrapping operation shall include surface preparations, application of pre-wrapping solution (primer) and application of layer of anti-corrosion protection tape and necessary testing. The above operation shall be performed under the supervision of tape supplier/ qualified personnel of the contractor and performed by personnel skilled in the application of same type of pre-fabricated tapes.
4.4.2	Inspection of the coating and wrapping of the pipes shall be performed by qualified inspectors under supervision of tape supplier.
4.4.3	Specification of coal tar tape and field quality plan are enclosed and brand name is indicated in price schedule.
4.5	PRE-FABRICATED TAPE
	The pre-fabricated tape shall generally conform to the following specification.
4.5.1	Compound: Plasticised coal tar base.
4.5.2	Reinforcement: Synthetic substrate (FRP tissue reinforced with glass fibre).
4.5.3	Seperator: Plastic.
4.5.4	Thickness: Two coat of 2mm thickness + - 10% tolerance (minimum 4.0 mm + - 10% tolerance).
4.5.5	Min weight: 1.25 kg/ sqcm/ mm thickness.
4.5.6	Adhesion test: Should pass as per IS 15337:2003, Section 7.1.
4.5.7	Holiday test voltage: It should pass @ 15 KV (max) for 1 mm thickness.
4.5.8	Direct impact test: It should pass as per 15337:2003.
4.5.9	Insoluble content by % weight in petrol as per IS – 2796:1996: 95 % minimum.
4.6	BHEL/ customer reserve the right to inspect the material at supplier's works.
4.7	INSPECTION
	BHEL/ customer reserve the right to test the coating and any repair subsequently made to it. The testing shall be carried out prior to laying of pipes in the trench. Final acceptance of all coating and wrapping work shall be determined by owner's representative after completion of wrapping over the welding joints. Pipes which have been cleaned and primed or coated and wrapped without having been inspected and approved by owner's representative shall liable to be rejected.
4.8	HOLIDAY DETECTION
4.8.1	All coated and wrapped pipes subjected to test with an electric holiday detector as specified in Section 7.2 of IS:15337:2003.
4.8.2	The holiday detector shall be supplied, correctly operated and always maintained in good condition along with adequate supply of spare parts. Any delay caused by the incorrect functioning of the holiday detector will not be entertained.
4.8.3	The operating voltage of the detector shall be determined by NACE RP –02 – 74.
4.8.4	Any pipe having three (3) or more holidays shall be rejected. Similarly any pipe having any one holiday bigger than 0.1 sq mtr shall be rejected. Any defective places shall be plainly marked with chalk immediately after they are detected visually or by the holiday detector.
4.8.5	For pipe with pre-fabricated tape, the test voltage which the pipe should pass with holiday detector kit at voltage 15 KV for 4 mm thickness coating.
4.9	MEASURING COATING THICKNESS
4.9.1	All pipes shall be tested for thickness as per IS: 15337:2003.
4.9.2	Thickness shall be measured by pushing the point of an approved pit depth gauge or micro-tester through the coating and wrappers.
4.9.3	Specified minimum thickness shall be present both at the pipe or any other point.
4.10	GENERAL GUIDELINES FOR TESTING THE ADHESION OF THE COATING
	At least two tests a day shall be carried out on finished coating after 72 hours from completion of coating. The test shall be carried out as per Section 7.1 of IS: 15337: 2003. The areas where the coating has been removed for testing by the inspector

	shall be repaired by the contractor at his own expense.
4.11	Internal protective coating
4.11.1	All CW pipes will be issued to contractor in fabricated condition in tentatively 6 mtr to 12 mtr length and pipe internal shall be painted with primer and coal tar epoxy paint leaving a gap of approx 200 mm length at each end to provide for field welding. Internal coating of this gap section at site is in the scope of the contractor.
4.11.2	Application of Epoxy Resin based Red Oxide Primer followed by adequate no of finish coats of Coal Tar Epoxy paint to achieve dry film thickness as per approved, is to be applied at site by the contractor.
4.12	During laying of buried CW piping etc, contractor shall have to erect supporting structures etc for safeguarding existing RCC drains, cable trenches, CW piping, piping system and other installations. Contractor shall submit a scheme in this regard in advance for BHEL's approval. BHEL will supply necessary supporting structural steel in this regard and payment for execution by contractor shall be made as per applicable item price schedule.
5.0	**WELDING, HEAT TREATMENT & RADIOGRAPHY**
5.1	The pipes shall be welded strictly in conformity with the methods as indicated in the detailed drawing or as instructed by BHEL engineer. BHEL engineer will have the option to change the method to suit site conditions. All the prepared/ matched edges will have to be suitably protected to prevent rusting or foreign material ingression.
5.2	Welding of high tensile structural steel shall be done by using certified welders, who posses requisite certificate and who are approved by BHEL engineer.
5.3	All welders shall be tested and approved by BHEL engineer before they are actually engaged on the work even though they may posses the requisite certificates. BHEL reserves the right to reject any welder without assigning any reasons. The welder identification code as approved by the BHEL engineer shall be stamped by the welder on each joint done by them. The contractor will be responsible for the periodic renewal, re-testing of the welders as demanded by BHEL.
5.4	BHEL engineer is entitled to stop any contractor's welders from his work if his work is unsatisfactory for any technical reason or there is a high percentage of rejection of joints welded by him, which in the opinion of BHEL engineer, will, adversely affect the quality of welding. Even though the welder has earlier passed the tests it does not relieve the contractor from his contractual obligations, to check the performance of the welders.
5.5	All charges for testing of welders including destructive and non destructive tests, if conducted by BHEL or by the inspecting agency shall have to be borne by the contractor. Test material shall be supplied free by BHEL, but the welding electrodes shall have to be arranged by contractor at his cost.
5.6	All welded joints shall be subjected to acceptance by BHEL engineer/ customers. Contractor has to arrange for regular evaluation of radiographs without accumulation of any backlog.
5.7	Preheating and post-heating, if required, shall be treated as part of erection work and shall be performed by the contractor in accordance with the instructions of BHEL engineer.
5.8	All low hydrogen electrodes shall be baked and dried up to 350 deg C for an hour in an electric electrode drying oven and shall be kept at 150 deg C before they are used in erection work, and all welders including high pressure welders shall have a portable electrode drying oven at the work spot.
5.9	All butt joints of piping shall be carried out by arc welding only. All the electrodes of BHEL/ customer approved quality and make, required for the piping and structural works etc to be arranged by the vendor within his quoted price.
5.10	The technical particulars, specifications and other general details of work shall be in accordance with AWS 0.1.1.72, Clause 6.11 or ASME Section IV, V & IX or ANSI B 16.25 as specified by BHEL.
5.11	Contractor shall note that NDT requirement should be compiled as per approved welding schedule. Generally 10 % minimum radiography shall be done on the welding joints of various piping system followed by hydro test. However, percentage may be increased depending upon the quality of joints at the discretion of BHEL.

5.12	Low speed high contrast fine grain films (D-7 or equivalent) in 10 cm width only should be used for weld joint radiography. Film density shall be between 1.5 to 2.0.
5.13	All radiographs shall be free from mechanical, chemical or process marks to the extent they shall not confuse the radiographic image. Radiography should be taken only after removal of cleats etc by grinding from tubes wall for getting better image.
5.14	Penetrameter as per ASME/ ISO, shall be used for all exposures.
5.15	Lead numbers and letters (generally of 6 mm size) are to be used for identification of radiographs. Contract no, joint identification, source used, welders identification, SFD used are to be noted down in the paper cover of radiography. Load intensifying screens for front & back of the film shall be used as per instructions of BHEL engineer.
5.16	The weld joint is to be marked with permanent mark A, B, C, etc to identify the segments. For this, a low stress stamp shall be used to stamp the pipe on the down stream side of the weld. For multiple exposures on pipes, an overlap of about 25 mm of film shall be provided.
5.17	If the contractor does not carry out radiography work in time due to non-availability of film, chemicals, etc, BHEL may get the work done through some other agency at the risk and cost of the contractor.
5.18	All the radiographs shall be properly preserved in air-conditioned rooms and shall become the property of BHEL.
5.19	The defects as pointed out by BHEL engineer/ inspecting shall be rectified immediately to the satisfaction of engineer and re-radio graphed. The decision of engineer regarding acceptance or otherwise of the joint shall be final and binding on the contractor.
5.20	Radiography of joints shall be so planned after welding that the same is done either on the same day or next day of the welding to assess the performance of high pressure welders. If the performance of the welder is unsatisfactory, he shall be replaced, immediately.
5.21	The contractor shall also be equipped for carrying out other NDT, like liquid penetrant inspection, magnetic particle inspection and ultrasonic testing as & when required for work within the quoted rates.
5.22	In lieu of radiography, 100 % ultrasonic testing may be adopted suiting the job requirement. In case hydro test of CW piping cannot be conducted, contractor shall carry out 100 % DPT on back gousing and 100 % UT for CW pipe-line in substitute for radiography and hydro test with in the same quoted rate subject to approval of BHEL/ customer. In such case, payment due against completion of hydro test of CW piping as per item price schedule will be due after completion of this activity as detailed above further to certification of BHEL site engineer. Contractor must be equipped with state-of-art ultrasonic machine having recording facility. All the records shall be preserved and shall become the property of BHEL.
5.23	For carrying out ultrasonic testing of welded joints large size pipes, it will be necessary to prepare the surface by grinding to a smooth finish and contour as desired by BHEL engineer. The contractor's scope of work include such preparation and no extra charges are payable for this.
6.0	**CLEANING /HYDRO TESTING /PNEUMATIC TESTING OF PIPING SYSTEM**
6.1	The cleaning operation is in the scope of contractor and shall be carried out as per BHEL instruction mainly consisting of (a) Mechanical cleaning; (b) Air blasting (by rupture method); (c) Water flushing; (d) Steam blowing etc as per guidelines of BHEL engineers.
6.2	Hydro test of all CW piping/ LP piping is in the scope of contractor and shall be conducted as per BHEL instructions. Necessary Hand pump, filling hoses, gauges etc shall be arranged by the contractor at his own cost. Test pressure shall be as per BHEL drawing/ BHEL engineer instruction.
6.3	The contractor shall service, erect, dismantle and return temporary pipes for carrying out cleaning/ hydro test/ pneumatic test as required with no extra charges and no payment shall be paid on item rate for erection of temporary piping. All piping material, valves etc for temporary looping shall be issued to contractor free by BHEL.

7.0	**FIELD FINAL PAINTING (EXTERNAL SURFACE)**
7.1	The scope of work covers providing required manpower including supervision, providing all types of tools & plants including materials for scaffolding, consumables for scrapping, cleaning, ie surface preparation by removal of scales, flakes, rust, dirt, grease, oil and other foreign materials from the surface to be painted, mixing/ thinning of paint as per the requirement and application of primer and finish paint as per painting schedule & as specified herein and as per direction/ instruction of BHEL engineer on various piping system and its accessories as per scope of the work. The thinner, primer and finish paint of required specification/ make/ code/ colour shall be arranged by contractor within quoted rate.
7.2	Necessary scaffolding, required for painting of surfaces at various locations/ elevations shall be arranged by the contractor at their own cost. All the materials, required for scaffoldings shall be arranged by the contractor at their own cost.
7.3	The instructions of paint manufacturer/ BHEL's engineer shall be followed at all times. Colour code for paints, to be applied on surfaces of various equipment and system, shall be furnished during execution as per approval of DVC/BHEL.
7.4	CW pipes will be generally received with external surface in painted condition with primer coat and synthetic enamel finish paint. However, application of touch up primer and touch up finish paint in the worn out/ damaged/ welded portion is in the scope of the work as specified in the Quality Plan.
7.5	Coating thickness shall be measured by elcometer or other standard measuring device for measuring of finished film thickness of finished paint. If the thickness is found to be less than specified, the pipes shall be re-surfaced to bring the same to specified thickness.
7.6	Scope of painting is further broadly detailed below.
7.6.1	Refer clause no 4.11.1 of Volume-II: Internal coating of CW pipe end (200 mm length at each end) including supply of paints is included in the scope of this tender and to be executed as per QP
7.6.2	External field painting of over ground piping, supporting structures etc including supply of paints are included in the scope of this tender and to be executed as per QP (minimum one coat of red oxide zinc phosphate primer and two coats of synthetic enamel final paint to be applied as per approved colour & shed).
7.6.3	Paints shall be arranged by the bidder from approved supplier only.
7.6.4	Painting of SS piping is excluded from scope.
8.0	**PROCEDURE OF CIVIL WORK FOR BURRIED PIPE SHALL BE AS PER FOLLOWING.**
8.1	Necessary excavation for buried pipe, concrete bedding/ encasing and backfilling with earth/ sand are excluded from the scope of this tender.
8.2	BHEL will release excavated clear front for erection of buried pipe. Dewatering with all necessary arrangement, if required after handing over of excavated front, is included in the scope of this tender.
8.3	Finished leveling and 250 mm sand bed preparation including supply of sand as per drawing/ instruction of BHEL engineer are included in the scope of work.
8.4	Dewatering with all necessary arrangement required after handing over of excavated front is under the scope of bidder.
8.5	No separate payment shall be made on account of finished leveling, sand bed preparation including supply of sand, fox holes, dewatering, as detailed above. Bidder's quoted rates shall be inclusive of the same.
9.0	**OTHER**
9.1	It is clarified that commissioning assistance, post commissioning assistance, valve servicing, till trial run & handing over of the unit to customer, is included in scope of work.
9.2	It is clarified that all erectable gaskets, fasteners and other hardware shall be supplied by BHEL free of cost. However, temporary gasket, if required during testing, shall have to be provided by bidder. Bidder's quoted rates shall be inclusive of this.
9.3	It is clarified that in lieu of hydraulic test of CW piping, 100% ultrasonic test (UT) is also envisaged in line with clause no 5.22 of Volume-II.

9.4	Bidder shall note that there will be 2-cut for 45^{o} bend, 3-cut for 90^{o} bend and for other bends, job shall be executed as per direction of BHEL site engineer.
9.5	Bidder shall note that internal cleaning, internal painting , final painting (except for SS pipe) etc of CW/ LP piping system are included in scope of work.
9.6	Bidder shall note that fabrication of reducer is included in scope of work under relevant items of Volume-III. Bidder to refer revised Volume-III.
9.7	Bidder shall note that recordable UT machine shall be provided and used by the vendor and all records of UT shall be jointly signed & submitted to BHEL
9.8	Bidder shall note that water, including DM water, wherever required for hydraulic test, shall be supplied by BHEL.

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	(i) **PACKAGE-A:** Erection, testing, commissioning etc of Boiler & Auxiliaries, along with critical piping at 1x250 MW Unit#8 for 2x250 MW Extension project at Begusarai, Bihar. (ii) **PACKAGE-B:** Erection, testing, commissioning etc of Boiler & Auxiliaries, along with critical piping at 1x250 MW Unit#9 for 2x250 MW Extension project at Begusarai, Bihar.	
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	3.0	BHEL's TCN-01, vide reference no PSER:SCT:BRM-B1327:TCN-01, dated 17-04-2012.
	4.0	All other pertinent issues till date.

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/ issued by you and in case of such 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. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

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 in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

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