

**Corrigendum 1 dated Aug 24, 2019 to Tender Specification BHEL PSSR SCT 1838**

**Corrigendum 1 dated Aug 24, 2019 to Tender Specification BHEL PSSR SCT 1838** for the works of Handling at Site Stores / Storage yard, Transportation to Site of Work, Erection, Testing and Commissioning of Cooling Water Piping, Part of ACW piping including supply and application of painting, coating and wrapping, PU/Glass flake coating as applicable at 2X660MW Udangudi Supercritical Thermal Power Project at Tuticorin District, Tamil Nadu.

**A. Due date Extension**

<b>Sr. No.</b>	<b>Published</b>	<b>Existing</b>			<b>Revised as</b>		
1	Techno commercial bid <b>Volume – I Book - I</b> Notice Inviting Tender (NIT) Clause 1.0 (v) and Clause 1.0 (vi)	1.0 (v)	Due Date & Time of Offer Submission	Date: August 26, 2019 Time : 15:00 Hrs	1.0(v)	Due Date & Time of Offer Submission	Date : September 03, 2019 Time : 15:00 Hrs
		1.0(vi)	Opening of Tender	Date: August 26, 2019 Time : 15:30 Hrs	1.0(vi)	Opening of Tender	Date : September 03, 2019 Time : 15:30 Hrs

**B. Text Change In VOLUME II PRICE BID**

<b>As published in SCT 1838 VOLUME II PRICE BID Page no. 6</b>	<b>To be read as</b>
<b><u>Part C: Format to quote Total Amount</u></b>	<b>Part C: Bill of Quantity</b>

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**C. Some of the bidders had raised queries in the published tender specification. The Clarifications issued by BHEL are furnished below:**

<b><u>Sl. No</u></b>	<b><u>Ref. clause</u></b>	<b><u>Existing provision</u></b>	<b><u>Bidder's query</u></b>	<b><u>BHEL's clarification</u></b>
1.	Techno commercial bid Volume – I Book - I Technical Conditions of Contract (TCC) 1.4.1	75 MT Crane – 2 Nos. to be mobilised by Contractor	Even with 2 Nos. 75T crane not possible to erect the CW header piping (3832X16 mm 10M length) weight approx.15T per piece other than the nearest header where the crane is positioned. Hence modify this clause to One 75 Ton Crane from start to completion and second crane as and when required for erection.	Clause 1.4.1 change as 150 MT Crawler crane - 1 No (The crane shall be made available from start of work till the completion of erection and welding of all joints including supports) Accordingly, TCC clause 1.5.1 changed as below: In case of requirement of cranes <b>above 150T</b> due to specific site conditions, the same will be provided by BHEL at free of charges. In this regard decision of BHEL Engineer is final

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2.	Techno commercial bid Volume – I Book - I TCC 1.10.4.24	Number of utility points (Service / plant air, service / plant water, service / washing steam, inert gas (N <sub>2</sub> ) etc., shall be indicated in the P & I diagram. Contractor to locate the utility points as advised by site engineer and shall route the piping to these points as per site conditions, and shall submit as built layout with 'BILL OF MATERIAL' to BHEL for approval	Not relevant to this contract please confirm	Clause 1.10.4.24 is not applicable for this contract
3.	Techno commercial bid Volume – I Book - I TCC 1.12.5 to 11	Grouting of the equipment	Not relevant to this contract please confirm	Clause 1.12.5 to 1.12.11 is applicable - Tender conditions prevails
4.	Techno commercial bid Volume – I Book - I TCC 1.15.16 to 18	Heat Treatment	Max Pipe thickness is 18 MM. Pre heating and post weld heat treatment not applicable to this tender. Please conform	Bidder to follow the EWS provided during erection at site.

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5.	Techno commercial bid Volume – I Book - I TCC 1.15.21 & EWS	The term “T-Joints” used in the Erection Welding Schedule means the weld joint where Long seam weld & Cir-seam weld meets. Such T-joints shall be 100% radiographed	All field have long seam and circular seam welding meeting. Does your explanation means that all field joints have to be 100% radiographed. In which case your requirement is 100% radiography. Kindly clarify	Bidder to follow the EWS provided during erection at site.
6.	Techno commercial bid Volume – I Book - I TCC 1.15.34 & EWS	All the field welded joints are to be 100% Ultrasonic tested. UST machine with recording facility to be arranged by the contractor		Bidder to follow the EWS provided during erection at site.
7.	Techno commercial bid Volume – I Book - I TCC Chapter XIX	Coating and Wrapping	Please confirm thickness of wrapping	Wrapping & Coating to be done as per attached customer specification below for Page 5 to Page 6.

All other conditions of the tender specification remain unchanged.

Bidders are requested to consider this corrigendum as part of tender specification and quote accordingly.

-Sd-

Shailendra Kumar  
Senior Engineer / Subcontracts



During excavation if some obstacle is met with, same shall be reported to the Owner and dealt with as instructed by him.

The Contractor shall dewater, shore or do whatever might be required to excavate the trench, install the pipe in it and backfill the trench, in accordance with the specifications. Dewatering shall be done in advance of the laying of the pipe to allow adequate inspection of padding of the bottom if required and dewatering shall be continued throughout during laying of the pipe and backfilling of the trench.

In muddy/slushy ground, the bed shall be provided with a layer of a sand or lean concrete as directed by the Owner.

The trench shall follow the gradient of pipeline as specified in the drawing. The Contractor shall keep the trench in good condition, until the pipe is laid and tested. All materials to shore the trench in order to prevent caving are to be furnished and removed by the Contractor.

In case pipe is lowered in caved trench and back-filled before being inspected by the Owner, the Contractor shall re-excavate the trench for inspection and backfill it.

### 8.2.0 Sand bedding:-

Sand bedding of adequate thickness with fine sand to be provided as per AWWA M11

### 8.3.0 Corrosion Protection Tape coating

#### Materials

All underground steel pipes shall be protected with external corrosion Protection Tape.

Coating shall be coal tar based tape coating materials confirming to AWWA C203. Tape shall be coal tar component supported on fabric of organic / inorganic fibres. The fibre shall be thoroughly coated and completely covered on both sides with coal tar component. The tape shall be supplied in standard width and rolls shall be wound on hollow cores of standard diameter. The material shall have enough mechanical strength and dimension stability. As far as possible the fabric shall be thin, flexible, uniform and composed of glass fibres in an open structure bonded with a suitable inert material compatible with coal tar.

The primer shall be a coal-tar or suitable resin product. The primer shall consist of chlorinated rubber synthetic plasticizer and solvents. These primers shall be suitably compounded to produce a liquid coating which may be applied by brushing or spraying and which shall produce effective bond between the metal and subsequent coating of coal tar tape. Primer should not contain benzol or other toxic and/or highly volatile solvents, added pigments or inert fillers or other substances and shall show no tendency to settle out in containers.

Where the soil is corrosive in nature, Cathodic protection shall be given. If soil resistivity is greater than 5000 ohm-cm, cathodic protection is generally not required

#### Application Procedure

#### Cleaning, blasting and protection after blasting

Before the metal is blast cleaned, all oil and grease on the surfaces shall be thoroughly removed by flushing with a suitable solvent (such as xylene or 1,1,1 trichloroethane) and wiping with clean rags. The use of dirty or oily rags or dirty solvent shall not be permitted. All foreign matter not removable by blast cleaning shall be removed by suitable means. Blast cleaning operations shall remove all rust, scale and other impurities from the surface, exposing base material, presenting a greyish matte appearance. Slight shadows, strata or discoloration caused by rust stains or mill scale oxides need not be removed. Blasted



surfaces that rust before a priming coat has been applied shall be cleaned of all rust by buffing or wire brushing, or shall be reblasted. Adequate air separators shall be used to effectively remove all oil and free moisture from the air supply to the blaster.

After being cleaned, the pipe shall be protected from and be maintained free of oil, grease and dirt that might fall on the pipe before it has received its coal tar tape. During blast cleaning, any pipe found to show pits shall be set aside immediately, pending examination by the Owner for acceptance, reconditioning or rejection.

#### **Priming and Application of coal tar tape**

All blasted surfaces shall be primed immediately following blasting and cleaning. The surfaces be dry at the time the primer is applied and no primer shall be applied during rain unless the pipe to be primed is protected from the weather by suitable housing.

The use of coal tar primer that has become fouled with foreign substance or has thickened through evaporation of the solvent oil shall not be permitted. The application of primer shall be hand brushing, spraying or other suitable means and shall be in accordance with instructions for application, as supplied by the manufacturer. The apparatus to be used for application of the primer shall be acceptable to the Owner. Spray gun apparatus to be used shall include a mechanically agitated pressure pot and an air separator that shall remove all oil and free moisture from the air supply.

After application, the primer coat shall be uniform and free from floods, runs, sags, drips, holidays or bare spots. Any bare spots or holidays shall be recoated with an additional application of primer. All runs, sags, floods or drips shall be removed by scraping and cleaning, and the cleaned area shall be retouched or remedied by reblasting and repriming. Suitable measures shall be taken to protect the wet primer from contact with rain, fog, mist, spray, dust or other foreign matter until completely hardened and tape applied.

The minimum and maximum drying times of the primer or the period between application of primer and application of coal tar tape, shall be in accordance with instructions issued by the manufacturer.

If the coal tar tape is not applied within the allowed maximum time after priming, the pipe shall be reprimed with an additional light coat of primer or the entire prime coat shall be removed by reblasting and the pipe reprimed.

The cleaning and priming operation may be carried out in the Contractor's workshop or on site. The entire pipe length shall be cleaned but the ends of the pipes shall be left without coating for a distance of 230 mm for joints, which shall be coated and wrapped manually on site after laying, welding and testing the pipes.

Tape application should follow as soon as the primed surface is tacky. Tape shall be wrapped in accordance with the manufacturer's recommendation in a manner that shall meet the adhesion and holiday detection requirement. In no case the overlap per single wrap is less than 12.5 mm. Two coats of coal tar tape coating shall be applied. A suitable primer as per manufacturer's recommendation shall be applied between the wraps. Air pockets or bubbles between the pipe and tapes or between tapes are to be avoided and tape shall be in perfect contact with the primed steel.

#### **8.4.0 Laying of Underground Piping**

##### **General**

After prefabrication, coating and trenching, the Contractor shall lay the underground piping in accordance with the following clauses and as per the approved piping arrangement drawings.