

Fabrication & Supply of Plate Formed Pipes & Fittings for Sagardighi project (With Vendor Material)

Date- 13.05.2022

Dear Sir / Madam,

Sub: Fabrication & Supply of Plate Formed Pipes & Fittings for Sagardighi project (With Vendor Material) as per BHEL Enquiry No 4212200003 dt 03.05.2022.

With regard to the subject Enquiry for the Fabrication & Supply of Plate Formed Pipes & Fittings for Sagardighi project (With Vendor Material) as per BHEL Enquiry No 4212200003 dt 03.05.2022, Corrigendum 1 dt 13.05.2022 is issued for the following-


1. Inline with Clause No 4.b of the General Terms & Conditions of the Enquiry, Customer approved Quality Plan 7411-QPC-01 Rev 01 dt 02.05.2022 is enclosed for information to all prospective bidders.
2. Clause No 11.b and 11.c of the General Terms & Conditions of the Enquiry is revised as indicated below-

Clause No	Existing Clause of General Terms & Conditions of the Enquiry	Revised Clause of General Terms & Conditions of the Enquiry
11.b	Price quoted by the bidder for each Rate Code will be evaluated on "Landed Cost to BHEL" basis as per the following formula- <ul style="list-style-type: none">• Landed Cost = Total Cost (Based on Quoted price for Scope of Work) + Applicable Taxes – GST ITC	Price quoted by the bidder for the total package will be evaluated on "Landed Cost to BHEL" basis as per the following formula- <ul style="list-style-type: none">• Landed Cost = Total Cost (Based on Quoted price for total Scope of Work) + Applicable Taxes – GST ITC
11.c	Supplier quoting the lowest rate for the Rate Code as per the above formula will be declared as the lowest bidder or L1 bidder. Supplier quoting the highest rate for the Rate Code as per the above formula will be declared as the highest bidder or H1 bidder.	Supplier quoting the lowest rate for the total package as per the above formula will be declared as the lowest bidder or L1 bidder. Supplier quoting the highest rate for the total package as per the above formula will be declared as the highest bidder or H1 bidder.


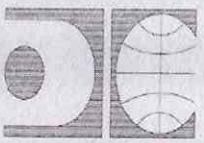

Prospective bidders may please take note of the above corrigenda issued to the Enquiry and submit their quote before the tender due date.




For BHEL Piping Centre,


Anil Sree
Dy.Manager / Outsourcing
BHEL Piping Centre

 DEVELOPMENT CONSULTANTS PRIVATE LIMITED	
Reviewed only for general conformance with contract drawings and specifications.	
ACTION - 1	
<input checked="" type="checkbox"/> Approved	4 Disapproved.
1* Approved with Comments	
2 Approved except as noted. Forward final drawing.	5* For information and record with comments.
3 Approved except as noted. Resubmission required.	5 For information and Record.
Contractor to be responsible for any errors and for fulfillment of detailed requirements of contract documents.	

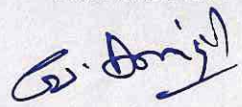

Digitally signed by Pratip Basak
 DN: cn=Pratip Basak, o=DCPL,
 ou=Power Cell,
 email=pratip.basak@in.dclgrou
 p.com, c=IN
 Date: 2022.05.11 14:40:33
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CUSTOMER  WBPDC	THE WEST BENGAL POWER DEVELOPMENT CORPN LTD. (WBPDC) 1 X 660 MW SAGARDIGHI THERMAL POWER EXTENSION PROJECT (UNIT #5)
CONSULTANT 	DEVELOPMENT CONSULTANTS PRIVATE LIMITED, KOLKATA
CONTRACTOR 	BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE, CHENNAI

JOB NO: 445		COPY RIGHT AND CONFIDENTIAL. The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED it must not be used directly or indirectly in any way detrimental to the interest of the company.		DEPT CODE		NAME	SIGN	DATE
STATUS: CONTRACT					PRPD	V KARTHIKEYAN		02.05.2022
DISTRIBUTION					CHD	D SANDRA PRIYA		02.05.2022
TO					APPD	D SANDRA PRIYA		02.05.2022
NO								
REV	DATE	ALTD	CHD	APPD	TITLE:			
					QUALITY PLAN FOR PIPING FABRICATION (NON IBR) (7411:QPC:01)			
					DEPT			
					SIGN			
					DATE			
WBPDC DOC. NO. PC-MQ-445-QPM-A001						REV 01		
SHEET 1 OF 1								



 QA03	BHEL PIPING CENTRE CHENNAI-17		QUALITY PLAN FOR PIPING FABRICATION (NON - IBR)						QP NO: 7411:QPC:01	
	QUALITY AND BUSINESS EXCELLENCE DEPARTMENT		PROJECT NAME: - SAGARDIGHI TPP (1X 660 MW) UNIT 5						REV. NO: 01	
			BHEL CUSTOMER NO: 7411, 7412 & 7416						DATE : 02.05.2022	
								PAGE 1 OF 6		
S. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY M B	REMARKS
1	2	3	4	5	6	7	8	9	10	11


1.0	MATERIAL:									
1.1	Pipes/Welded pipes – CS, AS and SS (Material spec as per BHEL Document)	Co-relation & verification of Mill TC a) Chemical Composition. b) Mech. Properties c) Soundness for Seamless pipes (UT/ECT) d) Hydro test (If applicable) e) RT for welded pipes f) Hardness for P91	Major	Verification Chemical Analysis Mech. Test UT ECT Hydro RT Hardness	100% 1/Heat 1/Heat/size 100% 100% 100% 100% 100%	BHEL Drawing, Material Spec BHEL Drawing, Material Spec. BHEL Drawing, Material Spec. ASTM E213 ASTM E309 ASTM A999 ASME Sec V/ASME Sec VIII UW 51 Material Spec.	Mill TCs / HC*	P	V	TC-Test Certificate HC* - History Card / Register
1.2	Plates CS, AS (Material spec as per BHEL Document)	Co-relation & verification of Mill TCs a) Chemical Composition. b) Mech. Properties c) Soundness for thk >25mm	Major	Verification Chemical Analysis Mech. Test UT	100% 1/Heat 1/Heat 100%	BHEL Drawing, Material Spec. BHEL Drawing, Material Spec. BHEL Drawing, Material Spec. SA578	Mill TCs / HC*	P	V	



PREPARED BY: 	M : BHEL/BHEL APPROVED VENDOR, B: BHEL/BHEL AUTHORIZED INSPECTION AGENCY, P: PERFORM, V : VERIFICATION, W: WITNESS. CS: CARBON STEEL, AS: ALLOY STEEL, SS: STAINLESS STEEL NDE: NON DESTRUCTIVE EXAMINATION, WPS – WELDING PROCEDURE SPECIFICATION, PQR – PROCEDURE QUALIFICATION REPORT, IR – INSPECTION REPORT, HC- HISTORY CARD/ REGISTER	PC-MQ-445-QPM-A001	REVIEWED AND APPROVED BY: 
KARTHIKEYAN V – ENGINEER/Q&BE.	LEGEND:	MDL NO	D SANDRA PRIYA – MANAGER/Q&BE.

		BHEL PIPING CENTRE CHENNAI-17		QUALITY PLAN FOR PIPING FABRICATION (NON – IBR)					QP NO: 7411:QPC:01 REV. NO: 01 DATE : 02.05.2022 PAGE 2 OF 6		
QA03		QUALITY AND BUSINESS EXCELLENCE DEPARTMENT		PROJECT NAME: - SAGARDIGHI TPP (1X 660 MW) UNIT 5 BHEL CUSTOMER NO: 7411, 7412 & 7416							
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1.3	Rods & Rounds, Flanges CS, AS, SS (Material spec as per BHEL Document)	Co-relation & verification of Mill TCs	Major	Verification	100%	BHEL Drawing, Material Spec.	Mill TCs/ HC*	P	V	
		a) Chemical Composition.		Chemical Analysis	1/Heat	BHEL Drawing, Material Spec.				
		b) Mech. Properties		Mech. Test	1/Heat	BHEL Drawing, Material Spec.				
		c) Soundness (for Dia >50mm)		UT	100%	SA388				
1.4	Pipe fitting CS, AS, SS (Material spec as per BHEL Document)	d) Hardness for F91	Major	Hardness	100%	Material Spec.	TCs / HC*	P	V	
		Co-relation & verification of Mill TCs		Verification	100%	BHEL Drawing, Material Spec.				
		a) Chemical Composition		Chemical Analysis	1/Heat	BHEL Drawing, Material Spec.				
		b) Mech. Test		Mech. Test	1/Heat	BHEL Drawing, Material Spec.				
		e) Soundness (for thk >6mm or dia ≥200mm)		UT	100%	SA 388 / ASME Sec VIII Div. II cl 3.3.4				
		f) Surface defect		LPT / MPT	100%	ASTM E165 / E709				
		g) Weld quality(in case of welded fitting)		RT	100%	ASME Sec V / ASME Sec VIII Div-I UW 51				
		h) Hardness		Hardness	100%	Material Spec.				

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 BHEL PIPING CENTRE CHENNAI-17 QA03 QUALITY AND BUSINESS EXCELLENCE DEPARTMENT		QUALITY PLAN FOR PIPING FABRICATION (NON - IBR)							QP NO: 7411:QPC:01		
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1.5	All Raw materials (If supplied by BHEL)	Correctness of Material Spec.	Minor	Verification	100%	Material Specification as per BHEL Drawing.	HC		P	V	
2.0	IN PROCESS CONTROL.										
2.1	Material receiving inspection	Marking & transfer of identification	Major	Visual	100%	As per drg.	HC		P	W	Note 1
2.2	Marking, Cutting & Edge Preparation	Dimension	Minor	Measurement	100%	As per drg.	HC		P	V	
2.3	Bending	a) Dimension b) Ovality c) Thinning (Bend thickness) d) Surface defects (On bend portion only) e) Bend radius/angle of bend	Major	Measurement Measurement Measurement LPI Measurement	100% 100% 100% 100% 100%	As per drg. BHEL drg. / 10% (max) Max. 12.5% ASME Sec V/ASME B31.1 Cl 136.4.4 BHEL drg & ASME B 31.1	HC		P	V	
2.4	Welding.	Procedure, Performance Qualification (only Qualified welder's & WPS shall be employed)	Major	Review of WPS, PQR & WPQ	Each Welder	As per ASME SEC.IX	Report		P	V ##	## witness, if not already qualified

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**BHEL PIPING CENTRE
CHENNAI-17**

**QUALITY AND BUSINESS
EXCELLENCE DEPARTMENT**

QUALITY PLAN FOR PIPING FABRICATION (NON - IBR)

PROJECT NAME: - SAGARDIGHI TPP (1X 660 MW) UNIT 5

BHEL CUSTOMER NO: 7411, 7412 & 7416

QP NO: 7411:QPC:01

REV. NO: 01

DATE : 02.05.2022

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2.5	NDE: for Weld	a) Weld fusion (for OD≥1000mm.)	Major	Root back Chip & LPI	100%	No linear indication		HC	P	V	
		b) Weld Profile & Surface defects	Major	Visual	-do-	ASME Sec V/ ASME B 31.1 Cl.136.4.2		HC	P	W	
		c) Fit-up	Major	Dimension & Root-gap	100%	BHEL Drawing		HC	P	V	
		d) Butt Welds, mitre joints	Major	RT	10%* - CS 100%* - AS-Gr.91 / 92	ASME Sec V/ ASME B 31.1 Cl.136.4.5.		RT Film	P	R @	*- Inclusive of all T- joints. ** Including ends. @ - Review of 100% of RT film
				LPT / MPT	10% for CS 100% for AS/SS						
		e) Branch Welds & Attachment welds	Minor	LPT/ MPT	10% for CS 100% for AS/SS	ASME Sec. V & ASME B31.1 CL 136.4.4 / Cl; 136.4.3		Report	P	W	
2.6	Rolled and Welded Pipe Spools/ Fittings using plates	a) Circumferential Seam welds	Major	RT	10%*	ASME Sec V/ ASME B 31.1 Cl.136.4.5.		RT Film	P	R @	
		b) Long Seam welds	Major	RT	10%**	ASME Sec V/ ASME B 31.1 Cl.136.4.5.		RT Film	P	R @	
2.7	NDE.										

PREPARED BY:

Gr. Donigal

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LEGEND:


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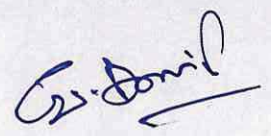

MDL NO


REVIEWED AND APPROVED BY:

SB4

D SANDRA PRIYA -
MANAGER/Q&BE.


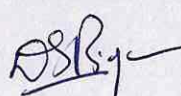
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	a) Edge Preparation.	Liquid Penetrant Test	Minor	NDE	100%	ASME Sec. V & ASME B 31.1 Cl:136.4.4		NDT Report	P	V	
2.8	HEAT TREATMENT (as applicable)	Time & Temperature Control	Major	H.T. Charts Review	100%	ASME B31.1 CL 132		HC*	P	V	HT charts shall be submitted to along with COC to Customer
3.0 FINAL INSPECTION.											
3.1	Dimensional Control.	Length, Thickness, Weld end diameter, Positions of attachments Bend Thickness.	Major	Measurement & Visual	100%	AS PER BHEL DRAWING.		HC*	P	W	
3.2	Painting	Surface preparation & Painting,	Major	Measurement & Visual	100%	Painting specification shall be as approved by Owner - PC-MQ-445-QPM-A011		H.C	P	W	
3.3	Identification	a) Punching Stenciling	Minor	Visual Check	100%	BHEL Drawing, PO		H.C	P	W	
3.4	PMI for AS and SS material	Correctness of material	Critical	PMI	100%	Material specification		Report	P	W	
4.0 DOCUMENTATION											
4.1	Inspection clearance	Documentation	Critical	Verification	100%	All reports as required in this QP		IR, NDE Report, H.C	P	V	
4.2	Despatch Clearance	Despatch Clearance	Critical	Verification	100%			MDCC	P	V	BHEL will Submit COC & Doc as per Cat C of PGMA Cat list

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NOTES:

- 1) Heat number transfer to cut piece (raw material issued by BHEL) shall be done by Sub-Vendor in the presence of BHEL / BHEL Authorised Inspecting Agency.
- 2) All items shall be inspected and cleared only after inspection by BHEL, Customer (as applicable).
- 3) The finished components shall be punched with DU code (14-digit work order du details), Heat number, material specification, maker's emblem, Inspectors seal and Statutory authorities seal in addition, the DU code, Heat no. and Material specification shall also be paint stenciled.
- 4) All Instruments to be used for Testing/ Inspection shall have Valid 'Calibration Certificates' - To Be Verified by Agencies, Manufacturer and the Contractor.
- 5) All pages of the inspection documents shall be numbered in chronology with the QP clauses, duly mentioning the corresponding QP clause nos at the top of each page.
- 6) One 'Index' page containing the document descriptions, their page nos & QP cl nos shall be attached upfront the inspection documents.
- 7) A 'HEAT NUMBER CORRELATION CHART' shall be submitted (wherever applicable) for reviewing the material test certificates.
- 8) Testing shall be from NABL accredited lab only, if in-house calibrated measuring instruments are not available.
- 9) For any 'HEAT TREATED' component (as applicable), the corresponding 'GRAPH' to be submitted for review.
- 10) Painting can be done only after inspection clearance, as per customer's approved paint specification/schedule. if mentioned. otherwise manufacturer's standard shall be followed.
- 11) All TCs / IRs shall be endorsed by agencies manufacturer & supplier, before submitting to agency 'Contractor/Client/Consultant' for review.
- 12) Machined ends shall be well protected using end caps and fittings shall be suitably packed in box / crate to avoid transit & other damages.

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