



BHARAT HEAVY ELECTRICALS LIMITED
PROJECT ENGINEERING MANAGEMENT, NOIDA

Date: 03 Feb 2021

CORRIGENDUM- 01

PROJECT	:	5X800 MW YADADRI TPS
PACKAGE	:	CONDENSATE POLISHING UNIT
ENQUIRY NO	:	PE/PG/YAD/E-6595/2020 Dated 25.01.2021
SUBJECT	:	TECHNICAL AMENDMENT

Type of Corrigendum			
Technical Corrigendum -	☒	Commercial Corrigendum -	☒

Please note the following:

- 1. This is with reference to Clause no 11.2 of GCC Rev-07 (Contract Performance Bank Guarantee), Vendor shall submit Contract Performance Bank Guarantee of 3% instead of 5% of Order / Contract value (excluding taxes, duties and freight charges).**
- 2. Reply to Pre-Bid Queries & Technical Amendment No #1 attached with this corrigendum shall be treated as part of NIT.**

All the other terms and conditions of the tender enquiry shall remain unchanged. All the bidders are requested to quote accordingly.

Yours faithfully,

For and on behalf of BHEL

Sharad Chandra
Manager/BOP

CONDENSATE POLISHING UNIT FOR 5X800 MW YADADRI TPS

PRE-BID QUERIES

Sl. No.	Volume	Section	Clause No.	Page No.	Specification Requirement	Clarification	Reason for Clarification / Bidder's Assumption	BHEL Reply
1.	PE-TS-417-155A-A001	SUB SECTION – IC	S.No-3	299	Redundancy of sensors shall be provided, irrespective of instrumentation shown in the PID, by bidder as per following: (i) Triple redundancy for all analogy and binary inputs required for protection of system / drives. (ii) For all other control functions & alarms, dual redundancy of the sensors shall be provided by the bidder.	Is this clause applicable for analyser also.	M/s BHEL is requested to clarify.	This is applicable for analyser also as per tender specification page no. 299 of 665, clause no. 3.0.
2.	PE-TS-417-155A-A001	I	9.06.00	609 of 665	P & ID shows Density Indicator whereas Specification call for density transmitter is attached in technical specification.	Which one is to be considered?	M/s BHEL is requested to clarify.	Tender Specification requirement is clear. Bidder to refer clause B.I.21 and B.II.21 i.e. “2 nos. concentration analyser for measuring density of diluted acid & alkali shall be provided, one (1) in acid dilution line and one (1) in alkali dilution line. This concentration analyser shall be provided in addition to mechanical density indicator in each line”.
3.	PE-TS-417-155A-A001	I	2.03.00	625 of 665	Back up Panel	We understand that it is not in bidder scope of supply.	M/s BHEL is requested to clarify.	Bidder understanding is correct. Backup panel is not in Bidder's scope. However, recommended

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								MIMIC diagram shall be provided by bidder during detail engineering.
4.	PE-TS-417-155A-A001	I	S.no-10	27	MCC, DDCMIS based control room & battery room shall be located in CPU regeneration area building	We understand that DDCMIS for both area, UPS along with battery are in M/s BHEL scope of supply.	M/s BHEL is requested to clarify.	Bidder understanding is correct. DCS along with UPS are in M/s BHEL scope of supply.
5.	PE-TS-417-155A-A001	SUB SECTION – IC	S.No-3	299	CONDENSATE POLISHING SYSTEM shall be operated & controlled from DCS (DCS is in BHEL's scope). Local Control Panel , wherever required ,will be in bidder's scope.	Since DCS for whole package i.e Service vessel and regeneration area is in M/s BHEL scope and hence Local Control Panel will also be in M/s BHEL scope of supply. Please also note that we do not require any local control panel for any operation from local control panel in presence of DCS system. In case, BHEL is intending for Local control Panel from bidder then please elaborate the functional requirement of Local Control Panel i.e. type of operation from Local Control panel.	M/s BHEL is requested to clarify.	Bidder to note that DCS Panels, OWS, UPS along with Batteries, Backup panel are in BHEL scope. However, apart from above any local panel envisaged by bidder for operation is in bidder's scope.
6.	PE-TS-417-155A-A001	I	6.03.00	614 of 665	Silica analyser : Multi-Stream with at least one stream as spare	We understand that Single Channel Silica analyser along with external channel sequencer will be applicable against this clause.	M/s BHEL is requested to clarify.	Noted. However, at least one stream/channel need to be kept as spare and this spare channel shall be in addition to already using four channels.

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7.	PE-TS-417-155A-A001	I	6.03.00	614 of 665	Sodium analyser	Please note specification is totally silent about multi-channel but P & ID shows multichannel analyser. We understand that Single Channel Sodium analyser along with external channel sequencer will be applicable against this requirement.	M/s BHEL is requested to clarify.	Bidder can go ahead as per P&ID i.e. multi-channel analyser. However, at least one stream/channel need to be kept as spare and this spare channel shall be in addition to already using four channels.
8.	PE-TS-417-155A-A001	I	6.03.00	614 of 665	Sodium analyser Response time : 2 minutes or better	As per discussion with vendor, 2 Minute response time is not possible at all. You are requested to take up with client for response.	M/s BHEL is requested to clarify.	Tender specification requirement is clear. However, same can be further discussed during detail engineering.
9.	PE-TS-417-155A-A001	I	S.no-12	300 of 665	BHEL shall provide 230 VAC UPS supply feeder at a single point	We understand that M/s BHEL will provide single feeder of UPS power supply in all five units as well as in regeneration area	M/s BHEL is requested to clarify.	As DCS Panels, OWS, UPS along with Batteries, Backup panel are in BHEL scope, hence power supply requirement will be taken care by BHEL only. However, apart from above power supply if required by bidder, same needs to mentioned/ indicated during detail engineering.
10.	PE-TS-417-155A-A001	I	4.0.B.III Serial no. 10	21 of 665	Motor operated valve instead of pneumatic isolation valve shall be provided for each CPU to DM water line as indicated in P&ID. Further if any	Specification requirement not clear.	Specification requirement is not clear as specification	Bidder to refer Amendment#1 Sl. No. 03

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					valve which is not indicated or indicated as pneumatic in tender P&ID the same shall be considered by bidder as Motorized isolation valve.		description and P&ID are contradictory.	
11.	PE-TS-417-155A-A001	I	4.0.IV.C Serial no. 5	22 of 665	Rinse recirculation piping confirming to CS to SA 106 Gr-B, complete rinse recirculation piping of each TG unit shall be in bidder's scope. Complete piping of all 5 TG units shall be in bidder's scope.	MOC of Rinse recirculation piping in both the clauses is different.	Specification requirement is not clear regarding the MOC of Rinse recirculation piping. Please clarify.	Bidder to refer Amendment#1 Sl. No. 04
			5.0.(vi)	270 of 665	Service vessel Rinse to condenser Hot well line piping & Rinse recirculation pumps discharge, suction rinse recirculation line - CS to ASTM A 106 Gr. B & CS to ASTM A 106 Gr. C respectively			
12.	PE-TS-417-155A-A001	I	4.0.IV.C Serial no. 12 & 13	23 of 665	N-Pit effluent common discharge piping from N-Pit effluent transfer pumps of 1st set of regeneration system to ETP of CMB shall be minimum 150 NB size or as per velocity criterion for sizing given in technical specification whichever is higher of MOC CSRL shall be in bidder's scope. The distance between N-Pit of 1st set of regeneration system and CMB (common monitoring basin) of ETP shall be 1500 m and this piping shall be in bidder's scope. Complete N-	We are assuming that piping from N Pit up to CMB OF ETP shall be laid on BHEL's provided pipe Racks/pedestals. Please confirm if our understanding is correct.	Specification requirement is not clear regarding the Scope of pipe racks & pipe pedestals for N-Pit effluent piping.	Bidder understanding is correct. N-pit effluent transfer piping from 1st set & 2nd set of CPU regeneration system N-pit to CMB of ETP shall be routed on BHEL's pipe racks & pipe pedestals. However, piping and the supporting posts for pedestals along with all necessary hanger, clamps, connecting steel, fixing

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PRE-BID QUERIES

Sl. No.	Volume	Section	Clause No.	Page No.	Specification Requirement	Clarification	Reason for Clarification / Bidder's Assumption	BHEL Reply
					pit effluent discharge piping of CPU regeneration system shall be in bidder's scope. N-Pit effluent common discharge piping from N-Pit effluent transfer pumps of 2nd set of regeneration system to ETP of CMB shall be minimum 150 NB size or as per velocity criterion for sizing given in technical specification whichever is higher of MOC CSRL shall be in bidder's scope. The distance between N-Pit of 2nd set of regeneration system and CMB (common monitoring basin) of ETP shall be 1500 m and this piping shall be in bidder's scope. Complete N-pit effluent discharge piping of CPU regeneration system shall be in bidder's scope.			bolts, nuts, etc. for the same shall be in bidder's scope.
13.	PE-TS-417-155A-A001	I	3.04.00	53 of 665	The bed cross section in the service vessels shall be such that the average velocity of condensate through it shall not exceed 1.75 meters/min (105 M3/hr/M2) at the design flow rate for spherical vessel.	Average velocities specified for design of spherical vessel in both the clauses are different.	Average velocity specified for design of spherical vessel is not Clear. Please clarify.	Bidder to refer Amendment#1 Sl. No.01 and 02
			2.0 (xvii)	256 of 665	Average velocity of condensate through service vessels/Surface flow rate - ≤ 120 m/ hour			

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14.	PE-TS-417-155A-A001	I	ANNEXURE VI	193 of 665	MANDATORY SPARE LIST	For Mandatory Spares (typical), only applicable spares for equipment's/instruments etc. being supplied for CPU Package shall be Supplied. Please confirm.	Please confirm.	Tender specification requirement is clear. Bidder to refer the notes mentioned in Annexure-VI Sub Section-IA Bidder to follow the same.
15.	PE-TS-417-155A-A001	I	5.0.(vii)	270 of 665	Effluent Transfer Piping - Piping, & Fittings shall be CSRL only	MOC of Effluent Transfer Piping is mentioned CSRL so we have considered IS: 1239 HG Pipe inside 3mm thick Rubber lined. Please confirm if our understanding is correct	Please confirm.	Tender specification requirement is clear. As indicated Piping, & Fittings shall be CSRL only & valves shall be minimum PN 10 rating for Effluent Transfer piping. Bidder to follow the same

CLARIFICATION AGAINST TENDER SPECIFICATION

(PRE-BID QUERIES)

Sr. No	Tender Section/Part/Chapter/Volume	Volume / Document/Section	Clause no.	Page No.	Tender Specification	Bidder's query	BHEL Reply
1	SPECIFICATION NO. PE-TS-417-155A-A001, SECTION : I	SUB-SECTION : IA	3.04.00	55	The bed cross section in the service vessels shall be such that the average velocity of condensate through it shall not exceed 1.75 meters/min (105 M3/hr/M2) at the design flow rate for spherical vessel.	With reference to the mentioned clause, the average velocity of condensate through it shall not exceed 1.75 meters/min (105 M3/hr/M2) at the design flow rate for spherical vessel but as per the Technical datasheet-A, Clause no. 2.0 sub clause xvii, The Average velocity of condensate through service vessels/Surface flow rate is 120 M/hr, Please Confirm.	Bidder to refer Amendment#1 Sl. No. 02



**AMENDMENT ON TECHNICAL SPECIFICATION
FOR
CONDENSATE POLISHING UNIT
5X800 MW YADADRI TPS**

SPECIFICATION NO.: PE-TS-417-155-A001

AMENDMENT NO # 1

REV. NO. 00

DATE: 02/02/2021

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The following modifications with respect to Technical Specification for **CONDENSATE POLISHING UNIT** BHEL's Technical specification no **PE-TS-417-155-A001** shall apply.

Bidder to note that existing clauses/ details as appearing in the specification stands deleted and clauses/details as mentioned in "Modified to or Read as" column shall be applicable and complied by the bidder as listed below in **SCHEDULE A**.

SCHEDULE-A

MODIFIED CLAUSES/ PAGE NUMBERS:

SI no.	Vol. No.	Section/ Description	Clause no	Page no	Existing clause details	Modified to be Read as
1.	-	Section – I Sub Section-IA	2.0	11 of 665	GENERAL DESIGN DATA TABLE FOR SERVICE VESSEL AREA Sr. No. 14 Average velocity of condensate through service vessels mentioned as ≤ 120 m/ hour	GENERAL DESIGN DATA TABLE FOR SERVICE VESSEL AREA Sr. No. 14 Average velocity of condensate through service vessels ≤ 105 m/ hour
2.	-	Section – I Sub Section-IA Datasheet	2.0 (xvii)	256 of 665	Average velocity of condensate through service vessels/Surface flow rate mentioned as ≤ 120 m/ hour	Average velocity of condensate through service vessels/Surface flow rate ≤ 105 m/ hour
3.	-	Section – I Sub Section-IA	4.0.B.III Serial no. 10.0	21 of 665	Motor operated valve instead of pneumatic isolation valve shall be provided for each CPU to DM water line as indicated in P&ID. Further if any valve which is not indicated or indicated as pneumatic in tender P&ID the same shall be considered by bidder as Motorized isolation valve.	Referred clause stands deleted.
4.	-	Section – I Sub Section-IA	4.0.C Serial no. 5	22 of 665	Rinse recirculation piping confirming to CS to SA 106 Gr-B, complete rinse recirculation piping of each TG unit shall be in bidder's scope. Complete piping of all 5 TG units shall be in bidder's scope.	Rinse recirculation piping confirming to CS to SA 106 Gr-C, complete rinse recirculation piping of each TG unit shall be in bidder's scope. Complete piping of all 5 TG units shall be in bidder's scope.
5.	-	Section – I Sub Section-IA	4.0.A Serial no. 21	13 of 665	One no. multichannel (Four channel) Silica analyser to measure process value of each service vessel outlet & common condensate outlet header for each TG unit. Hence total number of multichannel (Four Channel) silica analysers shall be five (5) nos. for all 5 TG units (service vessel area).	One no. multichannel (Five channel) Silica analyser to measure process value of each service vessel outlet & common condensate outlet header for each TG unit. Hence total number of multichannel (Five Channel) silica analysers shall be five (5) nos. for all 5 TG units



**AMENDMENT ON TECHNICAL SPECIFICATION
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CONDENSATE POLISHING UNIT
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						(service vessel area).
6.	-	Section – I Sub Section-IA	4.0.A Serial no. 20	13 of 665	One no. multichannel (Four channel) sodium analyser to measure process value of each service vessel outlet & common condensate outlet header for each TG unit. Hence total number of multichannel (Four Channel) sodium analysers shall be five (5) nos. for all 5 TG units (service vessel area).	One no. multichannel (Five channel) sodium analyser to measure process value of each service vessel outlet & common condensate outlet header for each TG unit. Hence total number of multichannel (Five Channel) sodium analysers shall be five (5) nos. for all 5 TG units (service vessel area).

