

BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING MANAGEMENT, NOIDA

Date-3-Jun-20

CORRIGENDUM-06

PROJECT	:	NPGCPL NABINAGAR FGD, BRBCL NABINAGAR FGD, NTPC KORBA TPP FGD, NTPC RAMAGUNDAM TPP FGD NSPCL BHILAI TPP-FGD
PACKAGE	:	COMPRESSED AIR SYSTEM FOR FGD
ENQUIRY NO	:	PE/PG/NB2/E-6421/2020 Dt. 11.04.2020
SUBJECT	•	Replies of Pre-Bid Queries

Type of Corrigendum				
Technical Corrigendum -	\checkmark	Commercial Corrigendum -		

In reference to the above mentioned tender enquiry please note the following.

1. Please find the reply of pre-bid queries.

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

Yours faithfully,

For and on behalf of BHEL

Vinit Kumar Verma

Dy. Manager



BHARAT HEAVY ELECTRICALS LIMITED

KO.	JECT	BHEL -3x500 MW NTPC RAMAGUN	NDAM TPP FGD; 3x660 MW NPGCPL NABINAGAR FGD; 4x250 MW BRBCL NABIN	NAGAR FGD; 3x200+3x500+1x500 MW NTPC KORBA TPP FGD; 3x200 NTPC Bhilai (2x550);		
		COMPRESSED AIR SYSTEM					
		PRE-BID CLARIFICATION SCHEDULE					
	Sl. No.:	Clause No.:	Description	Bidder's Clarification	BHEL Remarks		
	1	SECTION: C2-A TECHNICAL REQUIREMENT SECTION C1-A/Page no:6 of 6	11.1.11 Only KKS tagging shall be used in all document/drawings and in the field for all items/equipment/signals etc. No other tagging method is acceptable. The successful bidder shall provide detailed drawing with KKS only. Operational write up of the system should strictly contain KKS code for identification and description	KKS Tags shall be follow only for the Field instruments. Inside the skid NO KKS shall be complied. Tagging shall be as per ELGi OEM practice.	Bidder to comply specification requirement.		
	2	9.00.00-CONTROL PHILOSPHY	Any of the compressor and Air drying Plant may be selectable for "shutdown", "working" or "standby" duty.	No such selection available for compressor.	Bidder to comply specification requirement.		
	3	9.01.04	All abnormal conditions used for tripping the compressor or any other equipment shall be provided with pre-trip audio-visual indication/annunciation in the control panel	Shall have only visual indication on HMI of Compressor controller.	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimur specification requirements, however same shall be subjected to NTPC approval duri detail engineering.		
	4	9.01.06	The following indications shall be made available in the control panels for repeating the same in main plant Control System / Panels (a) Status of each compressor (b) Instrument air pressure low/high (c) Service air pressure low/high (D) Dew Point of Instrument AIR (e) Status of each dryer	a) Shall be complied b) Shall be a apart of Field instruments only. C)Shall be a apart of Field instruments only. D)Shall be a apart of Field instruments only. E) Shall be complied Note: ELGi shall comply Instrumentation scheme as per Previous Executed FDG package to NTPC & BHEL	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimun specification requirements, however same shall be subjected to NTPC approval durir detail engineering.		
	5	9.02.01	Each compressor shall be in the control panel to operate either in Base duty (Auto Load- Unload) or Standby duty (Auto On-Off) mode in case of Screw and unload/modulate/energy optimization (Auto Dual Mode) in case of centrifugal	No such selection available for compressor. This need to be programmed in customer DCS and shall be achieved through Remote starting and Stopping the appropriated compressor. Note: ELGi shall comply Operational philosophy as per Previous Executed FDG package to NTPC& BHEL	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimun specification requirements, however same shall be subjected to NTPC approval during detail engineering.		
	6	9.02.05	The alarms and shutdown scheme mentioned below are suggestive and shall be provided as per manufacturer's standard practice meeting the safe operational requirement of the equipment/system each compressor:- (a) "Air temperature high" at inlet to last stage Alarm & trip (b) "Low lube oil pressure" Alarm & trip (c) "High Lube oil supply temperature" Alarm & trip (d) "High oil filter differential pressure" Alarm (e) "Low lube oil level in lube oil sump" Alarm (f) "High inlet air filter differential pressure" Alarm & trip (g) "Low cooling water flow to air compressor" Alarm	a) Shall be complied b) Shall be complied c)Shall be complied d)Shall be complied as NSD e)Not available f) Shall be complied g) Shall comply as NSD by providing a Flow Switch. Note: ELGi shall comply Instrumentation scheme as per Previous Executed FDG package to NTPC& BHEL	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimur specification requirements, however same shall be subjected to NTPC approval durit detail engineering.		
	7	General Technical requirement	8.03.01(B)	xi) Shall be complied for main motor only xiv)Not applicable as protection relays not a part of Offered compressor. Xvii) Not applicable same shall be under Customer scope xix) Not applicable same shall be a part of operation philosophy of compressor. xxii) Not applicable xxiv) Not applicable xv) Not applicable Note: ELGi shall submitted applicable documents similar to previous executed NTPC /BHEL FDG projects.	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimur specification requirements, however same shall be subjected to NTPC approval duri detail engineering.		
	8	Demonstration of application [75]	25.012.01	Not applicable for compressed air system.	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering.		
	9	Demonstration of application Er	25.012.02	Not applicable for compressed air system.	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimur specification requirements, however same shall be subjected to NTPC approval duri detail engineering.		
	10	Electrical equipment & enclosures	32.00.00	Shall be as per ELGi OEM manufacturing standard. Note: ELGi shall comply electrical scheme and Electrical Equipment as per Previous Executed FDG package to NTPC& BHEL	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimur specification requirements, however same shall be subjected to NTPC approval duri detail engineering.		
	11		33.00.00	Shall be as per ELGi OEM manufacturing standard.	Compressor & Dryer skid are acceptable as per OEM inline with previously executed		
1	12	Instrumentation & control	37.00.00	Note: ELGi shall comply Instruments & instrumentation scheme as per Previous Executed EDG package to NTPC& BHFI	NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering.		
	13	REGULATION OF LOCAL AUTHORITIES AND STATUTES	2.00.00	All statutory approval of the offered system shall be under customer scope only	As per NIT terms & conditions.		

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32		6.00.00-SOLENOID VALVES	Shall comply customer spec for field instruments only if any. Not applicable for instruments inside the skid.	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering.
33	IPF-SS -999- 145 -0544 //OLLIME	SPECIFICATION FOR	Electrical control panel of offered compressor and dryer is not a free standing type it is an integral part of compressor canopy. Hence the same shall be as per ELGi OEM standard only. However shall comply as per Previous Executed NTPC/BHEL FDG package.	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering.
34		3.1.11 Single / dual control power supply feeders of voltage class	Incomer provision. Static switch or change over cannot be accommodated inside the skid.	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering. Further, non-redundant UPS feeders for compressor microprocessor panel shall be provided by BHEL in line with previously executed NTPC FGD projects.
35		3.1.12		Compressor & Dryer skid are acceptable as per OEM inline with previously executed
36			Shall be as per ELGi OEM standard and as per Previous Executed NTPC/BHEL FDG package	NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering.
37		3.1.14		Compressor & Dryer skid are acceptable as per OEM inline with previously executed
38		3.1.15	Not possible due to space constrain shall comply as per Previous Executed NTPC/BHEL FDG package	specification requirements, however same shall be subjected to NTPC approval during detail engineering.
39		3.2-Hazardous Area Panel Requirement	Offered m/c and equipment shall comply only safe Area.	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering.
40	TESTING AND INSPECTION	4	Kindly note there wont be any separate QAP of ELECTRCIAL PANER of compressor and DRYER.QAP shall be as a whole for compressor and shall be similar to Previous Executed NTPC/BHEL FDG package	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering.
41	HARDWIRED INTERFACE B/W COMPRESSOR CONTROL SYSTEM,DCS AND MCC		From DCS only remote unload is possible. In addition to Start and Stop from compressor to MCC Direct Trip / compressor Trip PFC shall be extended to MCC. Customer to interlock this signal suitable on to the MCC to trip it when Compressor trip is generated	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering.
42	NTPC FGD PACKAGESLOT- 1A, 2 & 3 QUALITY ASSURENECE PLAN FOR INSTRUMENTS	1.00.00	Shall comply for field instruments only. Instruments inside the skid shall be as per ELGi eom standard only.	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering.
43	11.1.11 Page No 29 of 402	Jaccentable. The successful hidder shall provide detailed drawing with KKS	KKS tagging within the compressor and dryer skid shall be excluded. We will comply for filed instruments.	Bidder to comply specification requirement.
44	3.00.00 D	Monorail with electric hoist of minimum 2 tons or 125% of heaviest parts of	Monorail to be excluded from our scope of supply	Refer Exclusion, VOLUME - II B, SECTION: C1A, SCOPE OF SUPPLY, TERMINAL POINTS AND EXCLUSIONS
45	2.01.00 Page No 41 of 402	CODES AND STANDARDS	Compressor design shall be as per our design	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering.
46	2.02.00 Page No 41 of 402	II) perign and construction	MOC shall be as per our manufacturing standards and shall be as per earlier executed BHEL / NTPC Projects	specification requirements, however same shall be subjected to NTPC approval during detail engineering.
47	2.03.00 Page No 41 of 402	IGear BOX	MOC shall be as per our manufacturing standards and shall be as per earlier executed BHEL / NTPC Projects	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering.
48	2.04.00 Page No 42 of 402	IINTERCOOLER AFTERCOOLER & OIL COOLERS (FOR SCREW)	MOC shall be as per our manufacturing standards and shall be as per earlier executed BHEL / NTPC Projects	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering.
49			Considering the limitation in diameter, we will provide 2 No's inspection window @ 150NB.	Bidder to comply specification requirement.
50	IPage No 43 of 407	Ishall be provided with thermostatic control for heater and relief valve for	Air temperature at the outlet of compressor is close to 160 to 190 Deg C. Hence additional heater is not required.	Bidder to comply specification requirement.
51	C	7.09.00 Each electric motor driven blower (2x100% capacity for each ADP) shall be provided with individual dry type filters at inlet.	We are quoting for HOC type air dryer. Hence blower is not required.	Bidder to comply specification requirement.
52	For All applicable clauses like 10.00.00 in Page No 46, 344,	IPainting	Painting of Air Compressor and air dryer shall be as per respective OEM standards. We will comply for all other equipment like air receivers and valves	Bidder to comply specification requirement.

53	3 Page No 25	However, civil works such as opening in wall, grouting of equipment's & structural material and inserts plates for pipes supports etc. are in the bidder's scope of supply.	This is to be excluded from our scope of supply	Refer Exclusion, VOLUME - II B, SECTION: C1A, SCOPE OF SUPPLY, TERMINAL POINTS AND EXCLUSIONS
54	D.f Page No 32	1' '	Noise of compressor shall be 85dbA measured accordingly ISO2151:2004 using ISO 9614 Part 2	Bidder to comply specification requirement.
55	4.00.00.III Page No 36	iii. One (1) set Special tools and tackles required for maintenance of all the Mechanical, Electrical and C & I equipment under the scope of bidder.	No special tool are required for our application. However to meet the specification the following tools will be given. Tool Box - 1 No. Cutting Player (6") - 1No Allen-keys 1 mm to 10 mm -1Set Nose Player - Small -1No. Small Screw Driver Set -1Set Plastic mallet -1No. Slide Wrench - 6" -1No. Set of 10 Nos. ring spanner set (6 to 32 mm) ISPT -1Set Set of 10 Nos. D spanner set (6 to 32 mm) ISPT -1Set	Bidder to comply specification requirement.
56	2.06.00 and 2.06.01 Page No 52	Iwith flanged connections and 50mm and below by socket welding linless	Water piping is OK We request for welding for instrument air piping to avoid leakages.	Bidder to comply specification requirement.
57	8.00.00 Page No 204	The ratio of locked rotor KVA at rated voltage to rated KW shall not exceed the following (without any further tolerance):	Please note that, as per our motor sizing calculation, the proposed motor rating shall be 160 kW. We have already used similar motors in DADRI, Mauda, Rihand and other FGD projects. Hence KVA at rated voltage to rated KW ratio shall be as per earlier supplied motors	Bidder to comply specification requirement.
58	10.04.00 Page No 208	PHASE TO PHASE / PHASE TO EARTH AIR CLEARANCE:	Please note that, as per our motor sizing calculation, the proposed motor rating shall be 160 kW. We have already used similar motors in DADRI, Mauda, Rihand and other FGD projects. Hence PHASE TO PHASE/ PHASE TO EARTH AIR CLEARANCE shall be as per earlier supplied motors	Bidder to comply specification requirement.
59	13.00.00 Page No 252	Software Licences	This shall be excluded from our scope.	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering.
60	PE-SS –999- 145 –054A Page No 258		All local panels are with the skid of compressor and dryer. Hence these specifications are not applicable for our package	Compressor & Dryer skid are acceptable as per OEM inline with previously executed NTPC projects and based on latest technology upgradtion at OEM end with minimum specification requirements, however same shall be subjected to NTPC approval during detail engineering.
61	Page No 370	SITE STORAGE AND PRESERVATION	to be excluded from our scope.	Bidder to comply specification requirement.
62	Schematic Drawing of Compressed Air System Page No 400	Bi - Pass arrangement for Air Dryer	We are supplying conventional type HOC type air dryer. Air temperature in upstream of air dryer shall be close to 160 to 190 Deg C. In case of opening of bypass valve, this hot air will be supplied to down stream instruments. Hence we will not recommend HOC dryer by pass valve. Request BHEL to exclude by-pass valve	Bidder to comply specification requirement.
63	Schematic Drawing of Compressed Air System Page No 400	II)ew point meter on header	We are supplying dryer with built in dew point meter. Hence additional dew point meter is not required.	Bidder to comply specification requirement.
64	General	Piping Scope	We need room layout to arrive piping. Request you to send the same.	Bidder to comply specification requirement. Placement of equipment inside compressor House shall be finalised during detail engineering and shall be subjected to NTPC apporval taking into consderation of operation & maintenace aspects of equipment.
65	General	Constraction Power	Constraction Power to be excluded from our scope	Pl. refer NIT Cl. No. 33 for the same.