A Joint Venture of Andhra Pradesh Gas Distribution Corporation Ltd. and Hindustan Petroleum Corporation Ltd

CORRIGENDUM – 4
Date: 31.01.2020

Tender Document No: GGPL/KKD/C&P/PR 2044/2019-20/11 dt. 02.12.2019

Subject: Tender for Procurement of Integrated Compressor Package

The following modifications to the subject tender is hereby authorized.

S. No.	Description	Page No. / Clause No.	Amendment/Addition/ Modification
1	Response to Bidders Queries	-	As per Annexure –1 attached to this document
2	DUE DATE AND TIME OF BID-SUBMISSION	Pg. 1 & 4	14.02.2020 at 14:00 Hrs. (IST)
3	DATE AND TIME OF UN-PRICED BID OPENING	Pg. 1 /Pg. 4 IFB 2 (H)	14.02.2020 at 15:00 Hrs. (IST)

All other terms and conditions of tender document remain unchanged.

For & on behalf of
Godavari Gas Private Limited

(Authorized Signatory)
Name :A RAMESH NAIK
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Tender No GGPL/KKD/C&P/PR 2044/2019-20/11

Sr No	Clause No	Tender specification / Clause Description	Deviation	GGPL Reply
1	Technical Specifications of Bid Document	Technical Specifications for Supply of CNG Electric Motor driven Integrated Compressor Package for GGPL (TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11)	SCOPE OF SUPPLY SHALL BE STRICTLY IN ACCORDANCE WITH ABOVE MENTIONED DETAILS. TENDER TECHNICAL SPECIFICATIONS WRT REGULAR ONLINE CNG COMPRESSORS ARE NOT APPLICABLE FOR THE OFFERED COMPRESSOR TYPE.	
1.0	3 & 4 & Cl no-3.2	Codes & Standards The following National & International codes and standards of latest editions shall be applicable: OISD 179, NFPA-52: 1992 or equivalent Codes & Standards NFPA-37 NFPA-12-CO2 Flooding system IS-325/IEC or International standards-Standards for electric motor IS:6382 Applicable ANSI, ASTM, NEC, NEMA API-618 API-11P (2nd edition) API-661 Specification of Air cooled exchangers ASME Section VIII Div-1/2- Design code for pressure vessel Gas Cylinder Rules 2004 Standard Specifications of Buraeun Of Indian Standards (BIS). Specifications/Recommendations of IEC. Indian Electricity Rules Indian Explosives Act. Delhi Factory Rules,1950 TEMA-C- Water cooled heat exchangers	The compressor design is derived from API618/11P/equivalent industry standards. However, the design is enhanced to meet specific CNG application such as pressurized crankcase to avoid gas vent loss etc.	Accepted
2	6	Secondary lubrication system with check valve protector, HP Filter (for all lubricating points) & DNFT flow switches with standby pump according to manufacturer safe design. Secondary lubrication system with divider block shall be provide	Lubrication system will be Splash lubrication type, as per manufacturer standard design. So no lubricator applicable so DNFT & double ball valve not appliaction as required.	Accepted
3	1	COMPRESSOR PERFORMANCE DATA	Please note maximum suction pressure the block can take is 18 barg (safety valve set pressure). So package PRV (Pressure Reducing Valve) will be have set pressure 17 barg in the suction line that will reduce the suction pressure to 17 barg in case the pressure in the suction line is above 17 barg.	Accepted
4	1	Suction pressures will be measured at inlet flange of the Integrated CNG Compressor package package. Bidder has to ensure that compressors are designed such that the desired flow is achieved (without any negative tolerance) at Rated Suction Pressure	Compressor performance will be considered & measured at compressor suction -1st stage cylinder flange.	Accepted
5	3.3	Cylinders of compressor should be horizontal balanced/ trunk piston design. Vertical blocks are not acceptable. Compressor shall utilize preferably separate suction and discharge valves. Valve should be of preferably plate or spring type (non-metallic type) developed specifically for Natural gas	Compressor block is is W type. Trunk Piston, 6 cylinders, 2 of them are vertical 4 are under inclination. Block will be as per manufacturer standard design.	Accepted
6	3.4	Compressor cylinder shall be provided preferably with removable liners.	Compressor Block will not have removable liners.	Accepted
7	3.6	Each pressurized component of the compressor Block shall be subjected to hydraulic proving test and the final assembly shall be performance tested and certified	Tesing of Block will be as per manufacturer standard practice.	Accepted

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8	3.11	In case of lubricated cylinder & packing design, single plunger per point force feed mechanical lubricator shall provide lubrication to compressor cylinders. Lubricators with double ball check valve shall be provided at each lubricator point. Digital no flow timer shall be provided to stop the compressor in case of loss of cylinder lubrication.	Lubricator- No lubricator used. Lubrication system - Splash type. Double ball check valve Not applicable. DNFT- Not applicable, as you cannot measure the flow of the splash…	Accepted
9	3.16	Level trips of oil & coolant must be provided with wire open alarm according to manufacturer safe design.	Splash type lubrication system. Offered compressor block will have only visual oil level	Accepted
10	3.21	Direction of flow should be marked on the pipe line and nomenclature of all vessel (e.g. 1st stage discharge dampener etc.) should be written on them. Cross head inspection windows should be transparent for easy of inspection during running. Set values should be prominently marked on the gauges.	Being trunk design there are no cross heads, so Cross head inspection windows - Not applicable	Accepted
1	3.0	CODES AND STANDARDS The following National & International Codes & Standards of Latest editions shall be applicable. OISD 179, NFPA-52: 1995 or equivalent NFPA – 37, NFPA – 12- CO2 Flooding system IS: 325/ IEC or International standards. – Standards for electric Motor IS: 6382 Applicable ANSI, ASTM, NEC, NEMA code. API – 618, API – 11P 2nd edition, API – 661 Specifications for Air cooled exchangers ASME Section – VIII Div – 1/2 Design codes for pressure vessels. Gas Cylinder Rules 2016. Standard Specifications of Bureau of Indian Standards (BIS). Specifications/Recommendations of IEC. Indian Electricity Rules. Indian Explosives Act. Factory Rules, 1950, ASME / ANSI – B-31.3 Code for Process Piping	Compressor will be as per manufacturer standard design complying to the standards followed by the industry wherever applicable.	Accepted
3	6.0	1 No Thermal Mass flow meter to measure Vent Loss. (Refer Annexure-V for Specifications)	Thermal Mass flow meter will be PCD Make.	As per specifcation
4	6.0	One no. relief valve at each stage discharge, first (1st) stage suction and Blow Down Vessel.	The relief valve at suction of 1st stage is not required, as per standard design one releif valve will be given on the BlowDownVessel (BDV) to which suction line is connected. This is asper standard design offered for previous packages.	Accepted
5	6.0	Common CO2 extinguishing system consisting of two cylinders, piping, valves and control systems as per details given in this specification.	CO2 flooding system will comply to given standards and manufacturers followed standards for all its sub component and operating system. As ACIL have supplied previously the system with satisfactory performance same will be offered with package. Kindly accept.	tender conditions prevails
6	6.0	Compressor Inlet and outlet manual and automatic isolating valves for maintenance & emergency.	The inlet and outlet isolating valves shall be provided as per standard manufacturer package offering.	tender conditions prevails
7	6.0	Y- type strainers, valves, sight flow indicators, check valves, auto & manual drain traps etc. as required for various auxiliary systems i.e. frame lube oil, cylinder lubrication system, cooling water systems etc. according to manufacturer safe design.	For the application the block selected will have splash type lubrication, hence auxiliaries shall not form a part of scope. Whatever necessary auxilliaries or support system required for splash lubrication for application shall be included. Also oil level on crank case are not considered as per standard design of block selected.Kindly Note.	Accepted

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8	6.0	Only air cooled and lubricated compressor with suction/discharge volume bottles (dampers) for each stage (separators) with manual drains and automatic drain system, lube oil system, closed circuit cooling water system (console type)/Air cooled according to manufacturer safe design.	As per standard design practice, interstage volume bottles are provided on each stage, these act as separators and are connected to the Drain System through auto drain valves. There are volume bottles as initial suction and final discharge that too are connected to the Drain Sytem likewise. We do not recommend manual drain for safety reasons unless it is oil drain.	Accepted
9	6.0	Duplex suction filters to be provided outside at the inlet of package with DP gauge after Y-type strainer.	Conical strainer will be provided at the compressor suction instead of Y-type strainer. This is for ease of maintenance.	Accepted
10	6.0	Secondary lubrication system with check valve protector, HP Filter (for all lubricating points) & DNFT flow switches with standby pump according to manufacturer safe design. Secondary lubrication system with divider block shall be provided.	Not applicable as Lubrication system provided for the block type selected will be splash lubrication type hence, DFFT switch with stand-by pump not applicable.	Accepted
12	8.0	Supplier shall arrange its own ups supply for testing, installation and commissioning compressor control circuitry. UPS of adequate rating along with battery backup to be part of vendor’s scope.	Supply of UPS not considered in bidder's scope.	tender conditions prevails
13	8.0	As and where specified on the data sheets all vents (i.e. Relief valve, distance piece, packing and starting air) shall be manifolded and terminated at skid edge outside the enclosure and vented to safe height at package roof. Silencer has to be provided in the starting air vent line.	Suitable arrangement for venting and vent line noise reduction shall be provided along with the package design, kindly accept.	tender conditions prevails
15	1 B. 2.2	Compressor Discharge Pressure 255 Kg/Cm2 g at 52 deg. C (Max)	Gas Discharge temperature shall be 10 Deg C above the ambient temperature i.e 47.5+10 = 57.5 Deg C, this is as per standard design approach for all our packages.	Accepted
17	3.7	The inter stage and final stage cooler tube material shall be carbon steel. Bidder to submit cooler sizing calculation for review.	Cooler design being a proprietary design, submission of cooler sizing calculations is not possible. Kindly accept.	Accepted
18	Preferable Makes shall be as follows:	FLP Switch:- Baliga / FCG / FPE / Flexpro Switches/fuses/contactor:- L&T/GEC/Siemens Pressure Safety valves:- BHEL,OFE & OE Group Keystone valves India pvt ltd., Baroda Sebim, Sarasin valves pvt ltd, /Halol/ Fanger Leser, Tyco Sanmar, Parcol SPA Itly, Nuopignone Itly, Sarasin, France, Taj Milano SPA, Itly, Fisher Rosemount (Now Emerson Process) Singapore / Aspro, Argentina SS Tubing & Fittings: Swagelok/ Parker / Sandvik / FAE, Argentina / ABAC Argentina/ VOSS for CNG application Solenoid valves /Actuator: Operated Valves Asco/Rotex/Parker Hanifen / Habonim Vass / Jefferson/ Micromecanica / Festo	FLP Switch: Sudhir Switches/fuses/contactor:- Schneider/Siemens Pressure Safety valves:- Mercer USA, Lesser SS Tubing & Fittings: Tubacex Solenoid valves /Actuator: Air Torque/Elomatic	tender conditions prevails
19	Note: (185/358)	2) Main Motor Starter: Soft-starter	We shall provide the Motor with Star-Delta starting method, this is as per our standard offering for the Integrated Compressor Package. The control panel suitable for the motor shall be offered, this is as per our supply for previous packages. Kindly accept.	tender conditions prevails
20	3.7	The inter stage and final stage cooler tube material shall be carbon steel. Bidder to submit cooler sizing calculation for review.	The tube material shall be as per the manufacturers standand suitable to the application, being propriotery design sharing the cooler sizing calculation shall not be feasible.	Accepted
21	3.11 & 3.16	In case of lubricated cylinder & packing design, single plunger per point force feed mechanical lubricator shall provide lubrication to compressor cylinders. Lubricators with double ball check valve shall be provided at each lubricator point. Digital no flow timer shall be provided to stop the compressor in case of loss of cylinder lubrication. Level trips of oil & coolant must be provided with wire open alarm according to manufacturer safe design.	As lubrication for the selected block is splash lubrication type, the lubricator with double valve for lubricators and DNF timers shall not be applicable, same shall be the case for level trips of oil. Kindly note.	Accepted

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22	3.13	Coolant tank must be provided with proper opening for flush/ clean of the tank, so that coolant level trip system works properly. Switch position should be such that sludge doesn't deposit on float sensor. Material of coolant make up tank should be SS304	Being air cooled machine coolant tank not applicable and hence not considered	Accepted
23	3.18	All cables entries should be from bottom in the FLP boxes (local control panel). There should be no cabling from the bottom of the package. All the cables should be routed from the side or top for easy trouble shooting.	Cabling shall be as per manufacturer standard. Will be routed as per Layout requirements. however proper space and routing will be ensured for easy trouble shooting	Accepted
24	3.28	Calculation for BDV volume shall be considering 20% higher than calculated volume and it should be calculated on higher range (19 bar) of the operating pressure (14 bar to 19 bar). Bidder shall submit calculation for same at the time of designing/drawing approval to client. BDV should be preferably placed on top of package and if placed inside package, it should be in vertical position	The calculation of BDV shall be in accordance to the application requirement as per manufacturer's standard, the design being propriotery type submission of calculations shall not be feasible. Package shall be placed inside package as per manufacturers standard practice. Kindly accept.	Accepted
25	3.30	Motor: l) Nos. of hot starts of motor 4 per hours	Selected Motor shall be suitable for 3 HOTS and 2 COLD starts, any deviation in operating shall affect the life of the motor.	tender conditions prevails
26	3.32	Oil Filter	The oil filter shall be of ACIL manufacturer make with Parker Filter Cartridge, that will be suitable for asaid application, this forms our standard design offering part. Kindly accept.	Accepted
27	3.34	Piping & Appurtenances SS FITTINGS & VALVES SPECIFICATIONS: End connections : Single or Double ferrule Compression type / NPT SS TUBING SPECIFICATIONS: □ Seamless SS Tubing □ Material of construction Stainless Steel 316L □ Tube hardness shall be less than 80 RB □ Make : Sandvik / FAE/ TUBACEX (SCHOELLER-BLECKMNN)/ PARKER □ Sizes : Metric system (inch) □ Max Working Pressure : 326 bar(g) SS FITTINGS & VALVES SPECIFICATIONS: □ Material of construction Stainless Steel 316 □ Make : Swagelok / Parker / ABAC/ VOSS □ Sizes : Metric/SI □ Standard : ASTM/ ASME/ DIM □ End connections : Single or Double ferrule Compression type / NPT	The working pressure for interstage piping shall be as per the application and hence the piping shall be CS and SS according to the requirement of the respective pressure and tempetrature. Sizes: For Integrated machine tubing is in metric system (meters) End connections for block and separator connections shall be as per manufacturers standard that serves the purpose for CNG pplication, same will be offered from proven package.	Accepted
28	3.38	Vibration Compressor maximum vibration of cylinders shall not exceed 10 mm/sec unfiltered peak velocity. Maximum vibration level of installed compressor frame shall not exceed an unfiltered peak velocity of 5mm/sec or 200 micron unfiltered peak-to-peak vibration whichever is less. The bidder shall provide for all structural support within the package so that these levels can be achieved or vibrations should be limited according to manufacturer safe design	The vibration level will be as per manufacturers design and will be maintained as per the specific level as per industry standards.	Accepted
29	4.3	There shall be provision of two suction Coriolis based mass flow meters inside the compressor package. Flow meters shall be suitably installed and clamped as per OEM guidelines/ recommendations to avoid measurement errors due to external vibration. Relevant calibration certificates to be provided. Flow meters should have integral display to show instantaneous values of mass flow. The totalizer readings from the flow meter should be communicated to PLC and PLC shall record the flow readings. Shift wise, day wise and month wise flow totalizer readings should be available in PLC display.	The Massflow meter at suction will be supplied, which will be a loose supply for site mounting, and one discharge MFM will be provided, provision for 2 suction MFM not required for this package as per standard offering hence not considered, additional requirement will increase cost, kindly note.	Accepted

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30	4.4	One number Thermal Mass flowmeter for measuring Vent loss shall be installed as per Manufacturer's design.	The Massflowmeter at vent is not required as the block selected is with pressurized crankcase, hence thermal MFM will not be considered as a part of suppl, Kindly confirm.	Accepted
31	4.11	Separate junction boxes shall be provided for each type of signal i.e. analog, digital, solenoids RTD, thermocouple, intrinsic safe and for power supply. No cable shall share power & signal.	LCP (With PLC) is mounted on package itself hence separate JB's are not required.LCP (With PLC} is mounted on package itself.	Accepted
32	4.13	Compressor package shall be provided with the following indicators: -Pressure indicator each stage suction and discharge. -Oil pressure indicator on each pressure lubrication system -Compressor jacket water coolant temperature indicator on local gauge panel Compressor package shall be provided with the following trip devices: a. High oil temperature devices d. Coolant flow low devices. The compressor package shall be furnished with the following trip logic that shall stop the compressor and suction of compressor shall be isolated: On coolant flow low	As per standard design offering we provide following: '- Pressure indicator at suction is provided, each stage discharge not considered as standard design practice. -Oil pressure indication is shown on HMI, indicator on LGP not consodered. - As compressor is air cooled water coolant temperature not applicable Compressor package shall be provided with the following trip devices: a. High oil temperature devices: Temperature switch/transmitter shall be provided for high oil temperature trip. d. Coolant flow low devices: Not Applicable. The compressor package shall be furnished with the following trip logic that shall stop the compressor and suction of compressor shall be isolated: On coolant flow low: Not applicable	Accepted
	6.1	Mechanical Running Test (MRT) Bearing temperature Oil cooler inlet and outlet temp Bore & other parts by opening a valve - Piston & cylinder clearance - Visual examination of position rod, cylinder guide bore without dismantling	Not feasible	Accepted
33	4.23.5	Bill of Material with Tag No & Technical Specifications	The P&ID along with legends is provided and ASL Book copy is provided along with machine, which serves purpose of BOM.	Accepted
34	4.23.12	List of spares for two years of operation and maintenance. The list of spares should include ordering specification and manufacturer's catalogues and price.	Not applicable since comprehensive O&M is offered.	tender conditions prevails
36	4.21	Redundancy in PLC is required. PLC shall incorporate all process parameters (specified elsewhere) and status of compressor, engine & priority panels and shall be modular in construction with 100% redundancy with respect to CPU	Non redundant Siemens / Schneider make PLC will be provided. As addiing redundancy will increase control panel dimensions & not feasible to fit inside limited footprint of 3.7m x 1.5m (Lxw)	Accepted
36	5.0	Each compressor module shall be housed within a purpose built SS 304 acoustic enclosure only. The units shall incorporate a rigid framework with a combination of fixed and removable panels. Filling of Class A melamine self-extinguishing polyurethane (PU) foam specifying the maximum burn extent, with UL certification or better shall be used in acoustic enclosure. Enclosures shall be engineered to give a noise level of maximum 75 + 3 Dba + measured at 1 meter as standard, utilizing Melamine filled self-extinguishing, low smoke Polyurethane (PU) foam. Specifying maximum burn extent with UL certification covering aluminum or steel with perforated steel inner face. Materials shall be non-combustible to deter spread of flame requirements	As per standard design followed for the acoustic enclosures we shall provide acostic enclosure with: outer sheet CRCA ; inside sheet GI perforated; insulation- rockwool 50, 60 & 75 mm thk, this design is proven and supplied for previous similar packages, doors will be provided in case of removeable panels. Kindly accept.	Accepted
37	5.0	To prevent the discharge of gas into the enclosure, all safety relief valves within to be connected to a manifold. From this connection a single pipe passes through the enclosure roof to a vent stack to allow satisfactory dispersion of gas at a height of minimum 3m above ground level.	As per standard design, all vents to be connected to blow down vessel and blowdown vessel shall be vented to air.	Accepted

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38	5.0	For handling of all heavy parts for maintenance purpose suitable lifting arrangement shall be provided according to manufacturer standard i.e. beam fitted with chain hoist arrangement or similar. The chain hoist arrangement i.e. chain pulley block shall be removable type, which can be disassembled and shifted onto the other machines. 1no. each shall be provided for tendered quantity of compressors. Eye bolt arrangement shall be provided on heavier components like electric motor, cylinder crankcase, and wherever felt necessary for lifting during maintenance. The bidder shall also provide 1 nos. monkey ladder for safe climbing on the top of the canopy along with hand railing on the top for ease of maintenance and operation. Jack arrangement required for alignment of the motor.	This is not be feasible due to space constraint. Ladder will be provided as a part of acoustic enclosure no separate ladder considered. Kindly note.	Accepted
39	5.0	The bidder shall be providing a degree of protection equivalent to IP44 as defined in AS 1939.	For Acoustic enclosure, degree of protection shall be provided as per manufacturers standards, this is as per standard design offered for all similar packages. Kindly note.	Accepted
40	5.0	Painting and protection: Packing shall be sufficiently robust to withstand rough handling during ocean shipment & inland journey. Sling points shall be clearly indicated on crates. Painting of Internal process piping should be either manufacturer standard or as per international color coding standard, e.g.- Gas line-Yellow, Water line- green, Airline-Blue, Fire suppressing system – Red etc. The paint shall be chosen, primed and applied to have a service life of ten years the exterior of equipment and enclosure is required to be corrosion free for ten years.	The package enclosure is itself a weather proof type of enclosure, no separate packing considered. The painting shall be as per the manufacturer standard inline with the industry standards.	Accepted
41	6.1	b) The MRT for the 25% compressors block of the lot shall be carried out with job or shop driver including complete job driving system i.e., job driven V-belt, job pulleys etc., for 4 hours continuously at the premises of compressor block OEM. The compressor need not be pressure loaded for MRT test. During this test following shall be recorded at agreed intervals (as applicable). - Vibration levels measured on cylinders and frame - Bearing temperature - Oil cooler inlet and outlet temp Subsequent to satisfactory run the compressor shall be examined as per standard procedure & following shall be examined as minimum: - Bore & other parts by opening a valve - Piston & cylinder clearance - Visual examination of position rod, cylinder guide bore without dismantling If any of part found damaged, all similar components shall be stripped for inspection. The MRT test shall be repeated after replacement of such parts.	i. MRT shall be conducted along with FAT, i.e Mechanical String Test. ii. Following shall not be feasible during MRT: - Bearing temperature - Oil cooler inlet and outlet temp. iii. Strip test not considered as it is not feasible to open compressor block after the assembly.	Accepted
42	6.2	Mechanical String Test for 4 hrs. is a mandatory requirement to be performed at packager's shop before dispatch in presence of GGPL representatives (or a third party as arranged by GGPL). This test can be clubbed up with the Mechanical Run Test of compressor as specified above, provided the job driver & lube Oil system is used for the test. At least 25% of the package lot ordered shall be string tested. String test on N2 or air is not acceptable. It shall be on natural gas.	The Mechanical String Test shall be carried out for 2hrs on the Natural Gas, this is standard practice for all the packages that are successfully delivered to various OMC's. Also we recommend string test of all the packages in the order. Kindly note.	Accepted
43	6.3	Erection, Testing & commissioning at Site: Also, bidder shall arrange its own control/ single phase (UPS supply) for testing and commissioning of package.	Supply of UPS for testing and commissioning of package not considered in bidder's scope of supply.	Accepted
44	6.5	Noise Level Test: During the field trial run, noise level test shall be carried out and bidder shall demonstrate /achieve the granted noise level. All necessary instruments /accessories required for fields trial run and noise level test shall be arranged by the bidder.	Being site activity CC to consider the scope of accessories required for the test. Note: The noise level that our designed canopy achieves is 75(+/-3)dBA which is achieved in open/free field condition same should be notified to customer.	Accepted

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48	--	Test Certificates	Certificates will be submitted as per CP standard QAP Approved by end client	Accepted
49	ANNEXURE – V: SPECIFICATIONS OF INSTRUMENTS	SPECIFICATION OF THERMAL MASS FLOW METER (TO MEASURE VENT LOSS): Certification : PESO	SPECIFICATION OF THERMAL MASS FLOW METER (TO MEASURE VENT LOSS): Certification : CCOE	Accepted
50	10.10	Other Instruments: Level Transmitters-Suction K.O.D (for automatic drain); Discharge K.O.D (for automatic drain)	Level Transmitters are not provided on Suction and Discharge KOD, the automatic drain is time based for Vessels, this is as per our standard offering.	Accepted
51	ANNEXURE – V: SPECIFICATIONS OF INSTRUMENTS	SPECIFICATION SHEET FOR FLAME DETECTORS SPECIFICATION SHEET FOR GAS DETECTORS	We propose standard ESP Safety make FLAME AND GAS DETECTORS.	Accepted
52	ANNEXURE – VI: RECOMMENDED VENDOR LIST	-Pressure Gauges -Suction & Discharge Filter -Flame Detector -Gas Detector -Compressor Main Motor -Vibration Switch -VentThermal Mass Flow Meter	Along with the makes specified kindly approve additional makes: -Pressure Gauges: Hirlekar -Suction & Discharge Filter: Manufacturer make with PARKER filter element. -Flame Detector: ESP Safety -Gas Detector: ESP Safety -Compressor Main Motor: Bharat Bijlee -Vibration switch not considered for standard Integrated Compressor Package. -Vent Thermal Mass Flow Meter: Kindly approve PCD make.	Accepted
53	13.1	X-ray examination for welded joints for heat exch./Press. Vessel/gas Piping (Certificate to be furnished)	Not Applicable to heat exchangers as Welding application not involved.	Accepted
54	13.2	Ultrasonic testing for piston rod, connecting rod, crank shaft, big end bolts, main brg. studs.	Not feasible as per manufacturer standard design.	Accepted
55	13.3	Magnaflux testing for crankshaft, piston rod, connecting ro	Not feasible as per manufacturer standard design.	Accepted
56	13.4	Dye penetrant testing for cylinders liners, piston	Not feasible as per manufacturer standard design.	Accepted
57	13.8	Stripping check and internal inspection	As it is not feasible to disassemble any part of package, same is not feasible to offer	Accepted
58	13.10	Leak proof test of crank case (min 24 hrs with kerosene)	Hydrotest certificate for crankcase shall be provided	Accepted
59	13.13	Field noise level test	Not feasible due to unavailability of free field at factory premise. To be done on site.	Accepted
60	13.15	Functional /continuity tests-control panel (At sub vendor's works)	Shall be done along with MRT.	Accepted
61	ANNEXURE – XI	QUALITY ASSURANCE PLAN:	We shall submit QAP for approval, kindly consider following points	
	1	HYDROTEST OF - CYLINDER, PRESS.VESSELS, HEAT EXCHANGERS	Witness by Owner/ Owner's Representative of the same sahll not be feasible hence, not considered.	Accepted
	3	sss	Hydrotest will be provided as per manufacturer standard design.	Accepted
	5	MAGNETIC PARTICLE TEST OF - CRANK SHAFT, CONNECTING ROD, PISTON ROD	Not feasible as per manufacturer standard design.	Accepted
	6	RADIOGRAPHY AS APPLICABLE - PRESSURE VESSELS, HEAT EXCHANGER. GAS PIPING (only 10% joints to be witnessed)	Witness by Owner/ Owner's Representative of the same sahll not be feasible hence, not considered.	Accepted
	7	BARRING OVER TO CHECK CYLINDER END CLEARANCE AND PISTON ROD RUNOUT	Witness by Owner/ Owner's Representative of the same sahll not be feasible hence, not considered.	Accepted
	8	NO LOAD MECHANICAL RUN TEST OF THE COMPR. WITH RATED (OR MORE) SPEED AND SHOP DRIVER. (4 HRS. Min.)	Witness by Owner/ Owner's Representative of the same sahll not be feasible hence, not considered.	Accepted

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	9	STRIP CHECK AND INTERNAL INSPECTION AFTER "NLMRT" OF ALL COMPRESSORS Refer Note: 2	Witness by Owner/ Owner's Representative of the same sahll not be feasible hence, not considered.	Accepted
	10	ELECTRIC MOTOR PERFORMANCE TEST- AT SUB-VENDOR'S WORKS PER ISO STD. Refer Note: 3	Only review of manufacturers test certificate shall be applicable.	Accepted
	12	CANOPY STRUCTURE PAINTING INSPECTION AT WORKS. SURFACE PREPARATION TO BE INSPECTED AFTER CLEANING AND BEFORE APPLICATION OF FIRST COAT OF PRIMER.	Witness by Owner/ Owner's Representative of the same sahll not be feasible hence, not considered.	Accepted
	13	FUNCTIONAL / HV / CONTINUTY TEST FOR CONTROL PANEL (AT SUB VENDOR'S WORKS)	The test shall be done/conducted during FAT. Same shall be witnessed at that time.	Accepted
	General	Cascade specs	Offered casaced will be 750 liters, capacity as per standard practice & as required to Integrated CNG compressor package, additional (special requirement will not be applicable) being OEM standard component	Accepted
63	Clause No 7	All fittings including valves shall be of Swagelok / Parker / ABAC/ VOSS/ SSP make. Material shall be SS 316 conforming to ASTM A269.	Fittings will be SS 316 as per ASTM A182 (for fittings made from Forgings) / A276.(for fittings made from Bar Stock),	tender conditions prevails
64	Clause No 7	The paint shall be chosen, primed and applied as to have a service life of five (5) years	Cylinder will be painted as per IS 7285 Part 2 standard requirement. Also note that as per cascade manufacturer Painting will not be covered under warranty & / or guarantee for five years as per their standard practice, This deviation raised by Cascade manufacturer.	Accepted
65	Clause No 7	Surface preparation by Shot Blasting as per grade SA 2 1 / 2 IS 9954/ ISO 8501. Three coats of paint shall be applied with minimum thickness of 300 micron. The recommended painting system should be of category C5-I very high (Industrial) as specified in the standard ISO 12944 Part 1 – 8. The proposed Painting system shall conform to Table A5 of ISO 12944 - 5 standard.	After surface preparation by shot blasting, cylinder will be applied with Epoxy Grey primer - 1 coat and Epoxy White shade on cylinder shell and Signal Red on Neck - 1 coat. Total coating thickness at Shell will be minimum 65 to 80 µm and at Neck end 40 to 50 µm. This deviation raised by Cascade manufacturer.	Accepted
66	Clause No 9	Detailed quality control procedure/QAP, duly approved by PESO, Nagpur, for manufacture of cylinder, fabrication of frame etc within two weeks of release of order.	CCOE approves only cylinders. So QAP as per cylinder standard will be followed. For cascade we will provide QAP and it will be followed as agreed by customer. This deviation raised by Cascade manufacturer.	Accepted
	General	Diepsnser specs	Offered dispenser wll be double arm dispenser & sutaible for offered compressor package, & as per OEM standard practice & as required to Integrated CNG compressor package, additional (special requirement as per this tnedr will not be applicable) being OEM standard component	Accepted
68	3.29	Overfill Protection Overfill protection shall be through electronically programmed hose to terminate the fill after 200 Kg/cm²g. Vendor shall include one number pressure transducer and one number pressure regulator per hose. Pressure relief valve shall be provided to avoid overfilling. Relief valve set pressure shall be at 250kg/cm²g with resetting at 245kg/cm²g. Relief valve setting to be adjustable from 225kg/cm²g to 260kg/cm²g with resetting at 220 to 255 kg/cm²g respectively. Calibration certificate shall be provided.	We have considerd Analogue Pressure Transmitter (4-20 mAmp) which along with Flow Meter Inputs in regards to Flow rate and Filling Algoritham restrict the filling pressure to 200 Bar in the vehicle. as supplied more than 1500 dispensers with the above arrangement and out of it almost 1200 dispensers are operating SAFELY. No Regulator will be provided.	Accepted
69	Annexure-1	Recommended Vendor List (Dispenser)	Regarding Males we want following to be included: Tubing: Parker Make BreakAway: Parker Make NGV Nozzle: Parker Make	Accepted
		Delivery Date	for 1st Compressor 22 weeks from Code-A approval / Manufacturing clearence from customer.	tender conditions prevails

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1	115 of 358	26.4	The maximum value of PRS shall be limited to 5% (five percent) of total contract price as per Price Schedule excluding amount pertaining AMC (O&M charges), if any. For PRS purpose, the above mentioned contract price shall be excluding taxes and duties	we request you to modify the claus to " The maximum value of PRS shall be limited to 5% (five percent) of undelivered package price...	tender condition prevails
2	157 of 358	1.1	The field trial run of the Integrated CNG Compressor package will be for minimum of 4 hours and the package should be kept under observation for 72 hours for stable operation and no major breakdown in which satisfactory performance of the package together with all accessories auxiliaries and controls shall be established for satisfactory performance for specified operating conditions.	As Full load performance test will be carried out at bidders works for 4 hours on guarantee parameter on Natural gas, we request customer to consider 30 mins field trial run and also performance test at site.	tender condition prevails
3	158 of 358	1.1	Periodic inspections of Safety Valves, Transmitters, Pressure vessel gauge and any other equipment as per statutory norms of Factory Rules 1950. SMPV and Gas Cylinder Rules shall have to be carried out by the bidder at his own cost during the period of maintenance by the bidder. The inspections have to be carried out by competent persons as per advice of Engineer-in-Charge and certificates have to be submitted to GGPL.	Hydro testing of pressure vessels to be excluded from bidder scope. The vessels are part of a process equipment and are to be designed as per ASME Sec VIII. The process vessels have not been covered under Gas Cylinder Rules 2016 / Static and Mobile Pressure Vessels Rules. Clauses applicable for vessels in compressor package are not present in Gazette notifications of Gas Cylinder Rules 2016 / Static and Mobile Pressure Vessels Rules. Thickness check will be carried out every year and same report shall be provided. We have supplied almost 400 + CNG package and operated successfully.	accepted
4	159 of 358	1.1	Receipt at site, storage in warehouse as per manufacturer's recommendation and safety and security from theft and breakage during transportation, handling including security guard at site.	Storage at site and providing security at site is excluded from bidder`s scope.	storage of compressor with all necessary wooden blocks and torpolene covers shall be in bidders scope, any damages during loading, transportation, unloading and erection bidder shall be responsible
5	163 of 358	2.0	The bidder shall carryout calibration of gas detectors and flame detectors every six months or earlier as per requirement or instruction of EIC of GGPL. Also yearly calibration of all instruments such as pressure gauges, transmitters, switches, mass flow meters etc shall be in the scope of the bidder. In addition to the above all safety relief valves shall also be tested and calibrated every year.	For mass flow meters, Only Zero calibration of mass flow meters will be provided. We have supplied almost 400 + CNG package and operated successfully.	accepted, calibration for all instruments except MFM will prevails as per tender condition
6	179 of 358	3.2	API 618	API 618 is generally applicable for reciprocating compressors required for installation in refinery loaction and same will not be applicable for required compressors.	all applicable sections for engineering and construction of reciprocating compressors shall be applicable in API 618
7	173 of 358	2.2	Air Cooler Design degC - 47.5 degC DBT& 90% RH	Package discharge temperature specified is 52 degC. If 47.5 deg C is to be considered as design temperature for air cooler then the discharge temperature considering sufficient margin on differential temperature of air for cooler design shall be 55 deg C.	tender condition prevails
8	168 of 358	6.0	One no. relief valve at each stage discharge, first (1st) stage suction and Blow Down Vessel.	Relief valve at first stage suction is not required in addition to one on blow down vessel as suction line and blow down vessel are connected to each other. We have supplied almost 400 + CNG package and operated successfully.	accepted
9	168 of 358	6.0	Y- type strainers, valves, sight flow indicators, check valves, auto & manual drain traps etc. as required for various auxiliary systems i.e. frame lube oil, cylinder lubrication system, cooling water systems etc. according to manufacturer safe design.	Please note that as per Manufacturer's standard practice the lubricator will be divider block type. Y type strainers, Sight flow indicators, check valve etc are applicable for Single Plunger per point lubricator, thus not applicable. We have supplied almost 400 + CNG package and operated successfully.	accepted
10	168 of 358	6.0	Only air cooled and lubricated compressor with suction/discharge volume bottles (dampers) for each stage (separators) with manual drains and automatic drain system, lube oil system, closed circuit cooling water system (console type)/Air cooled according to manufacturer safe design.	The proposed CNG package has suction volume bottle at each stage and discharge volume bottle at final stage discharge only. The volume bottles at suction are connected to condensate drain system through auto-drain valves. These volume bottles shall act as scrubbers/ condensate removal system. No separate separators shall be supplied. Manual drains are not recommended and not provided considering safety reasons. We have supplied almost 400 + CNG package and operated successfully.	accepted
11	168 of 358	6.0	Duplex suction filters to be provided at the inlet of package with DP gauge after Y-type strainer.	A conical strainer is provided in compressor suction line instead of Y-type strainer. We have supplied almost 400 + CNG package and operated successfully.	accepted
12	169 of 358	6.0	Secondary lubrication system with check valve protector, HP Filter (for all lubricating points) & DNFT flow switches with standby pump according to manufacturer safe design. Secondary lubrication system with divider block shall be provided.	Standby pump is not envisaged and therefore will not be provided. Oil pump mounted on compressor is sufficient for cylinder lubrication.This system is available in all our packages and accepted by al the CGD companies and 400+ CNG compressor are running successfully. undelivered	tender condition prevails
13	170 of 358	8.0	Supplier shall arrange its own ups supply for testing, installation and commissioning compressor control circuitry. UPS of adequate rating along with battery backup to be part of vendor's scope.	We understand that UPS is to be arranged by bidder only for testing, installation and commissioning activities and does not constitute as bidder`s scope of supply.	accepted
14	170 of 358	8.0	Silencer has to be provided in the starting air vent line.	Starting air is not required for motor driven compressors hence silencer is not applicable.	accepted
15	171 of 358	9.0	Bidder shall make his own provision for Instrument air if required with an electric motor driven air compressor with a suitably sized receiver & Refrigerant type air drier system.	Air drier sytem will be "Heat Less "type, dessicant is used to remove moisture in compressed air. Advantage of this system over refrigerant type dryer is that it does not require power supply for operation.	accepted

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16	171 of 358	9.0	Gas based actuator to used for compressor & dispensers hence no air compressor is required	We understand that, Gas based actuators for compressor & dispensers are also acceptable and gas used for instrument actuation will not be considered as loss and no penlaty will be imposed on bidder on account of same.	accepted, but gas consumption for actuation needs to be mentioned in the bid.
17	173 of 358	1.0 A -1.4	Horizontal / Vertical Balanced Opposed design with lined cylinder/ trunk piston Design.	Cylinders are unlined as per manufacturer`s standard design.	accepted
18	173 of 358	1.0 B -2.2	255 Kg/Cm2 g at 52 deg. C (Max)	Gas discharge temperature shall be air cooler design temperature + 7.5 degC over ambient temperature of 47.5 Deg C (i.e.55 degC)	tender condition prevails
19	180 of 358	3.21	Direction of flow should be marked on the pipe line and nomenclature of all vessel (e.g. 1st stage discharge dampener etc.) should be written on them. Cross head inspection windows should be transparent for easy of inspection during running. Set values should be prominently marked on the gauges.	Crosshead covers are not transparatent as per manufacturer`s standard design.	accepted
20	180 of 358	3.21	Cross head inspection windows should be transparent for easy of inspection during running. Set values should be prominently marked on the gauges.	Crosshead covers are not transparatent as per manufacturer`s standard design. We have supplied almost 400 + CNG package and operated successfully.	accepted
21	180 of 358	3.22	Gas tight crankcase.	Crankcase is not gas tight and vented to atmosphere. There is no gas loss through crankcase to atmosphere as packing leak gas is vented before it could reach crankcase. We have supplied almost 400 + CNG package and operated successfully.	accepted
22	181 of 358	3.22	Crankcase breather piped back to suction.	Crankcase is non pressuzied type hence breather is open to atmosphere and not piped to compressor suction. We have supplied almost 400 + CNG package and operated successfully.	accepted
23	185 of 358	Preferable Makes	FLP motors:- ABB / Crompton Greaves / Kirloskar / Siemens / Bharat Bijlee / Weg,	We request to approve Laxmi Hydraulics (LHP) & Hindustan Electric Motors MFG Co. As motor vendor.	tender condition prevails
24	185 of 358	Preferable Makes	On off ball/needle valve - Parker/Swagelok / ABAC / Spirax Sarco /Worcester for CNG application	Please let us know whether "SSP" make is acceptable for On off ball/needle valve.	tender condition prevails
25	188 of 358	4.2	All package mounted transmitters & temperature elements shall be intrinsic safe as per IEC 79-11 and solenoid valves, switches and related junction boxes shall be flame proof 'd' as per IEC 79-1. Other special equipment / instrument, where intrinsic safety is not feasible or available, shall be flame proof/ explosion proof as per IEC 79-1. All pressure gauges shall have an accuracy of + 1% of FSD and 100mm dial size. Pressure sensing elements shall be minimum of SS316 and movement of SS304. All pressure gauges on process lines having range more than 40kg / cm2g.	We are using flame proof temperature elements and not considering transmitter for the same	tender condition prevails
26	188 of 358	4.5	The temperature gauge shall be generally mercury in steel field type. Capillary tubing shall be min. SS304 with SS flexible armouring. The gauge shall have an accuracy of +1% FSD and 65mm dial size. The range shall be 1.5 times of operating temperature. In PLC pressure process values should be taken from pressure transmitters and should be independent from pressure gauges installed on local gauge panel. Temperature process values should be taken from temperature transmitters and should be independent from temperature gauges installed on local gauge panel. The compressor package instrumentation & control is to be configured for manual as well fully automatic control system including starting, shutdown as applicable for unattended operation.	We shall provide temperature element like RTD, K-type thermocouple instead of transmitters. All temperature elements shall be directly connected to PLC with appropriate protection.	tender condition prevails
27	189 of 358	4.13	Pressure indicator each stage suction and discharge.	We are providing pressure indicator each stage suction only	tender condition prevails
28	189 of 358	4.6	Individual (2/3 core) cabling is required for each field instrument from field JB to avoid multiple JB's and multicore cables in field for easy trouble shooting & replacement.	Local control panel (With PLC) is mounted on package itself hence junction boxes are not required. Hence Multicore cable not required.This system is available in all our packages and accepted by al the CGD companies and 400+ CNG compressor are running successfully.	accepted
29	189 of 358	4.11	Separate junction boxes shall be provided for each type of signal i.e. analog, digital, solenoids RTD, thermocouple, intrinsic safe and for power supply. No cable shall share power & signal.	Local control panel (With PLC) is mounted on package itself hence junction boxes are not required. Instruments will be directly wired to Local control panel.This system is available in all our packages and accepted by al the CGD companies and 400+ CNG compressor are running successfully	accepted
30	189 of 358	4.11	Separate junction boxes shall be provided for each type of signal i.e. analog, digital, solenoids RTD, thermocouple, intrinsic safe and for power supply. No cable shall share power & signal.	Local control panel (With PLC) is mounted on package itself hence junction boxes are not required. Instruments will be directly wired to Local control panel.This system is available in all our packages and accepted by al the CGD companies and 400+ CNG compressor are running successfully. undelivered	accepted

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31	190 of 358	4.18	ESD button (3 Nos.) shall be provided (Customer Interface room, locally mounted on package and Panel). A separate hooter for customer interface room shall be provided with annunciation window alarm of individual protection device.	We are not providing annunciation window.	tender condition prevails
32	191 of 358	4.21	Redundancy in PLC is required. PLC shall incorporate all process parameters (specified elsewhere) and status of compressor, engine & priority panels and shall be modular in construction with 100% redundancy with respect to CPU, Power suppl, Interface. PLC components/ system shall be tropicalized, MIL standard adopted with complete wiring and necessary terminals. Wiring to be color coded with cross ferruling in position. PLC shall be capable of carrying out on line routines for at least ten separate loops without affecting the scan, cycle & updating time etc. PLC shall be configured as a remote terminal unit of supervisory computer and data acquisition system complete with GPRS and Ethernet connectivity. One card for transferring and accessing data from minimum twenty devices with RS485 port shall be provided. In case of failure of master/ active controller/ CPU, standbycontroller/ CPU should take over the control in bump less manner. All values & data should be available through both the controllers immediately, i.e. there should be no data loss.	Please note this is additional requirement and will impact price of the machine. However, we can provide extra port in our PLC for GPRS connectivity.	Accpted
33	191 of 358	4.21	Successful bidder to include in scope live demonstration of remote monitoring of all PLC logged parameters in one machine at his works. OWNER may ask for the same. However, this may be required to be demonstrated at site.		Accepted
34	191 of 358	4.21	PLC shall be housed inside flameproof IIA/ IIB (Ex'd'). Local operator panel shall also be provided on the flameproof enclosure. The operator panel is provided for parameterization, indication, monitoring, and alarms and first out sequence of the system. PLC system shall have memory modules for storing user programs, symbol lists, program comments and should facilitate debugging/ trouble shooting without the application program. Program shall be ladder logic and communication shall be in English for each run. Program should have signal/ parameter tags as labels for easy identification/ troubleshooting. Each section of the program whether it is in the form of rung or page or network should have comment to classify the interlock being executed. A soft copy of the program should be sent by email/ CD.	Kindly confirm PLC & HMI software with cable will be required against set of package or per package	Program logic ladder should be provided along with the required softwares to access PLC and HMI per set of package
35	192 of 358	5.0	Each compressor module shall be housed within a purpose built SS 304 acoustic enclosure only.	We will use GI sheets for enclosure as per standard design. Please confirm whether same is acceptable. We have supplied almost 400 + CNG package and operated successfully.	tender condition prevails
36	192 of 358	5.0	The units shall incorporate a rigid framework with a combination of fixed and removable panels. Filling of Class A melamine self-extinguishing polyurethane (PU) foam specifying the maximum burn extent, with UL certification or better shall be used in acoustic enclosure.	We will provide doors instead of removable panels. Rockwool is provided instead of polyuretane foam. We have supplied almost 400 + CNG package and operated successfully.	Tender condition prevails
37	193 of 358	5.0	The maximum temperature within the enclosure shall be limited to ambient + 8 degC. Adequate ventilation fans shall be provided to meet the above and also to account heat dissipation of the coolers/ all other components.	Air cooled heat exchanger fan is of forced draught type which throws air out of the enclosure. Hence a separate ventilation fan is not required. Temperature inside the enclosure shall be limited to ambient + 8 degC without the use of additional ventilation fans.	accepted
38	194 of 358	5.0	For handling of all heavy parts for maintenance purpose suitable lifting arrangement shall be provided according to manufacturer standard i.e. beam fitted with chain hoist arrangement or similar. The chain hoist arrangement i.e. chain pulley block shall be removable type, which can be disassembled and shifted onto the other machines. 1no. each shall be provided for tendered quantity of compressors.	For removal of motor from package, slide rail arrangement will be provided in lieu of chain pulley block. We have supplied almost 400 + CNG package and operated successfully.	Tender condition prevails
39	194 of 358	5.0	The bidder shall be providing a degree of protection equivalent to IP44 as defined in AS 1939.	Compressor enclosure will be weatherproof.	Accepted
40	195 of 358	6.1	Mechanical running test (MRT)	MRT shall be as per Bidders standard QAP and same shall be discussed during detailed engineering.	Accepted

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41	195 of 358	6.2	Mechanical string test - Mechanical String Test for 4 hrs is a mandatory requirement to be performed at packager's shop beforedespatch in presence of Owner's representatives (or a third party as arranged by OWNER). This test can be clubbed up with the Mechanical Run Test of compressor as specified above, provided the job driver & lube Oil system is used for the test. At least 25% of the package lot ordered shall be string tested. String test on N2 or air is not acceptable. It shall be on natural gas.	We advise string testing of all the packages in manufacturer`s works.	accepted
42	200 of 358	7.0 a (ii)	Details of Penalty for non performance of equipments - On normal day (i.e. the day other than the schedule maintenance day): upto 12 hours : Rs. 20,000/- Beyond 12 hours: Rs. 40,000/- per day.	Penalty for breakdown or shutdown shall be as below: up to eight hours: NIL up to 24 hours: INR 10,000/-	Tender condition prevails
43	200 of 358	7.0 b (iii)	In any case, the maximum penalty imposed in a month for non-performance of the equipment turns out be 50% or more of the amount of O&M charges to be paid to the party per month per compressor (a complete cost break up of O&M charges need to be furnished by the bidder during bid), GGPL will take necessary actions as per terms and conditions of the contract for such non-performance.	The maximum penalty imposed in a month for non performance of the equipment shall be limited to 50% of the amount to be paid to bidder per month per compressor.	Tender condition prevails
44	210 of 358	COMPRESSOR DATA SHEET (7.1)	Lubricator equipped with sight flow indicator for each point storage tank with level gauge	Please note that as per Manufacturer's standard practice, the lubricator will be divider block type with pin indicators. Sight flow indicators for each lubricator point and a double ball check valve are applicable for Single Plunger per point lubricator, thus not offered.This system is available in all our packages and accepted by all the CGD companies and 400+ CNG compressor are running successfully.	the sight flow indicator to the individual cylinders to be provided on the devider block
45	211 of 358	9.1.6, 9.3.5, 9.4.4, 9.6.2	ASME / IBR CODE STAMP - Yes	Third party inspection reports will be provided in lieu of ASME/IBR code stamp for coolers, volume bottles, separator, oil mist separator, gas recovery vessel.	accepted
46	212 of 358	10.11, 10.12	Level transmitters - Suction K.O.D (for automatic drain), Discharge K.O.D (for automatic drain)	Level transmitters are not provided on separators. Automatic drain arrangement is provided without use of level transmitters and open/close of valves is based on definite time interval. We have supplied almost 400 + CNG package and operated successfully.	accepted
47	214 of 358	13.2	Ultrasonic testing for piston rod, connecting rod, crank shaft, big end bolts, main brg. studs. - Yes	Ultrasonic testing will be carried out for connecting rod only. We have used same philosophy for compressors supplied to various CGD companies in India.	accepted
48	214 of 358	13.3	Magnaflux testing for crankshaft, piston rod, connecting rod - Yes	Magnetic particle testing will be carried out for piston rod and crankshaft. We have used same philosophy for compressors supplied to various CGD companies in India.	accepted
49	214 of 358	13.4	Dye penetrant testing for cylinder liners , piston - Yes	Dye penetrant testing for cylinders liners, piston is not carried out. We have used same philosophy for compressors supplied to various CGD companies in India.	Tender condition prevails
50	214 of 358	13.10	Leak proof test of crank case (min 24 hrs with kerosene) - Yes	Leak proof test of crank case is not carried out. We have used same philosophy for compressors supplied to various CGD companies in India.	accepted
51	238 of 358	ANNEXURE-VI	FLAME DETECTOR - MEGGITT AVIONICS / GENERAL MONITORS / MSA / SPECTREX / DETRONICS / HONEYWELL / NET SAFETY	Please let us know whether "ESP SAFETY" is acceptable for flame detector.	Tender condition prevails
52	238 of 358	ANNEXURE-VI	GAS DETECTOR (IR TYPE) - DETRONICS / SENSITRON / HONEYWELL / NET SAFETY / GENERAL MONITORS / MSA	Please let us know whether "ESP SAFETY" is acceptable for gas detector.	Tender condition prevails
53	268 of 358	1.3	Documents listed in column 5 are to be submitted as hard bound indexed book containing the following details in Twelve (12) copies & 2 transparencies and to be submitted within 4 weeks of release note/dispatch of materials/ equipment from vendor's works. All transparencies to be supplied in rolls (in two sets).	We will submit drawings on A3 size paper in lieu of transparencies.	accepted
54	169 of 358	6.0	SCOPE OF SUPPLY FOR EACH INTEGRATED CNG COMPRESSOR PACKAGE - Cable length	Client to confirm distance between PDB to compressor skid for cabling purpose.	Max 100 m
55	169 of 358	6.0	SCOPE OF SUPPLY FOR EACH INTEGRATED CNG COMPRESSOR PACKAGE - Cable length	Client to confirm distance between compressor package to ESD push buttons (for all 3 nos ESD) for cabling purpose.	Max 100 m
56	169 of 358	6.0	SCOPE OF SUPPLY FOR EACH INTEGRATED CNG COMPRESSOR PACKAGE - Cable length	Client to confirm if cabling between PDB to air compressor is in the bidder's scope and length required for cabling purpose.	Max 100 m
57	169 of 358	6.0	SCOPE OF SUPPLY FOR EACH INTEGRATED CNG COMPRESSOR PACKAGE - Cable length	Client to confirm distance between compressor package to CO2 flooding system for cabling purpose.	Max 50 m
58	169 of 358	6.0	SCOPE OF SUPPLY FOR EACH INTEGRATED CNG COMPRESSOR PACKAGE - Cable length	Client to confirm distance between compressor package to manual call point for cabling purpose.	Max 100 m