

PROJECT : INSTALLATION OF GTC AT GANDHAR
CLIENT : GAIL INDIA LIMITED
JOB NO. : B240
SUBJECT : PRE-BID QUERIES AGAINST RFQ. NO. TENDER NO: SM/B240-910-KA-MR-5010/504
BIDDER : BIDDER 1

SL. NO.	REFERENCE OF TENDER DOCUMENT				BIDDER'S QUERY	EIL/GAIL RESPONSE
	DOCUMENT No.	Page No.	Cl. No.	Subject		
1.	B240-910-80-42-SI-5010 Rev. A B240-910-16-51-SP-5010 EIL STANDARD SPECIFICATION No. 6-43-0041 Rev. 2	2 3 5	2.0 (vi) 1.8 1.3	Conflicts/ambiguity, if any, between various documents attached in the material requisition/inquiry document Order of priority in case of any conflict between MR documents CONFLICTS	Order of priority of MR documents mentioned in the Clause 2.0(vi) of B240-910-80-42-SI-5010 Rev. A, Clause 1.8 of B240-910-16-51-SP-5010 and Clause 1.3 of STANDARD SPECIFICATION No. 6-43-0041 Rev. 2 are different. Please clarify which is to be followed.	Order of priority as per primary document i.e. Special instructions to bidders Doc. No. B240-910-80-42-SI-5010 is to be followed.
2.	B240-910-80-42-SS-5010 Rev. B	2	2.1	Gas Turbine (GG & PT) as per API 616, 5th edn.	Gas turbine offered is designed based on API 616 subject to comments and exceptions, which shall be submitted with the offer. This is inline with all other earlier EIL projects. Request to review and accept.	Please note that the bid submission shall be on NO DEVIATION basis as already mentioned clearly in RFQ. However, Deviations (if any) against API standards shall be reviewed during detailed engineering stage (in case of an order). Only machine inherent design related TECHNICALLY INFEASIBLE deviations to API standards will be permitted. All other API related deviations which can be complied with time/cost implication shall not be permitted and bidder shall have to withdraw the same (if raised during detailed engineering) without any time/cost implication to the purchaser As such, Bidder shall comply with the RFQ requirements with only TECHNICALLY INFEASIBLE (as above) deviations.
3.	B240-910-80-42-SS-5010 Rev. B	3	2.6	Portable trolley mounted Gas Turbine washing and cleaning system	Please clarify whether permanent mounted water washing system for the Gas turbine can be offered.	Please comply with RFQ requirements.
4.	DOCUMENT No. B240-910-80-42-SS-5010 Rev. B	3	4.1	Lube Oil System for Compressor, Gear Box and Gas Turbine (GT)	As per OEM design, common external pressure relief valve is provided in the lube oil system.	Pressure relief individual to each equipment (wherever applicable) shall be provided.
5.	DOCUMENT No. B240-910-80-42-SS-5010 Rev. B	4	4.3	Emergency overhead Lube oil run down tank (sized for equipment coast down) along with all necessary piping, instrumentation and controls	As per OEM design, emergency overhead lube oil run down tank is NOT applicable for the Gas turbine. Please confirm.	Noted. However, alternate arrangement such as Main Pump & DC driven emergency pump provided to ensure safe coast down and cooling off shall be designed and sized to cater to Lube-oil requirements for the complete package. Bidder shall guarantee the functionality of the offered arrangement in-lieu of emergency overhead lube oil run down tank.
6.	B240-910-80-42-SS-5010 Rev. B DOCUMENT NO. B240-910-16-50-SP-5010, Rev A	9 8	1.24 6.11.17	All power and control cables (other than cables within the skid) All interconnecting cables between bidder's electrical equipment within bidder's scope shall be provided along with cable supporting materials like cable glands, lugs, cable supports, cable tags, ferrules, etc.	As per Clause 1.24 of SECTION-B of DOCUMENT No.B240-910-80-42-SS-5010 Rev. B, all field interconnecting cables (power and control) from GT and its auxiliaries (except signal cables) is in Purchaser's scope.	All Electrical cables (Power, Control-(MCC to field equipment, MCC-I/O rack/DCS/PLC) shall be in purchaser's scope. However all cables required within skid shall be in bidder's scope. For Instrumentation cables refer Instrumentation part of scope of work. TECHNICAL AMENDMENT SHALL BE ISSUED.
7.	DOCUMENT No. B240-910-80-42-SS-5010 Rev. B	9	1.25	Cable trays and accessories outside the skid	As per Clause 1.25 of SECTION-B of DOCUMENT No.B240-910-80-42-SS-5010 Rev. B, cable trays, trenches and accessories outside the GT skid for all cables (power, control and signal) up to control/switchgear will be in purchaser scope. Please confirm.	Follow RFQ requirements.

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8.	DOCUMENT No. B240-910-80-42-SS-5010 Rev. B	12	2.1.14.2	Distance between field and control room to be considered as 500m approximately.	In view of operability distance between GT skid and control room shall be 300m as per OEM design. Please consider.	As the control room is an existing control room, hence distance cannot be changed. However actual distance to be measured at site during detail engineering. Vendor to consider suitable solution accordingly.
9.	DOCUMENT No. B240-910-80-42-SP-5010 Rev. B	12	9.8.1(i)	The lube oil system to be supplied with the GTC package shall conform to API standard 614, 4th edition	Gas turbine lube oil system offered is designed based on API 614 subject to comments and exceptions, which shall be submitted with the offer. This is inline with all other earlier EIL projects. Request to review and accept.	Please refer Sl. No. 2 above.
10.	DOCUMENT No. B240-910-80-42-SP-5010 Rev. B	15	10.0	INSPECTION AND TESTING	Inspection and testing shall be as per OEM standard quality plan. However, this can be mutually discussed and finalized during detail engineering stage.	Please comply with Inspection and testing requirements as per RFQ.
11.	DOCUMENT No. B240-910-80-42-SP-5010 Rev. B	16	10.2.2	The PGTR shall be done with the process gas (as per Process datasheets) and at full load for 72 (Seventy two) hours duration to establish satisfactory performance	Performance test shall be carried out for a period of half an hour as per PTC 22. As per PTC 22, if the PG test period is more than half an hour, due to changing inlet conditions the integrity of test is affected. Please confirm.	Duration to be considered as per RFQ requirements. Bidder shall submit the detailed test procedure, guaranteed parameters to be measured at site and methods of computation of results for review by the Owner/EIL during detail engineering stage (in case of an order). The performance testing procedures shall be mutually decided after finalization of order. Additionally, the following is clearly mentioned in the Job specification: 1. Any correction for variation in prevailing conditions may be accounted for. 2. The respective Codes and standards for Compressor and Gas Turbine i.e. PTC 10/22 and API 616/617 (as defined and referred to in the inquiry document) shall also be applicable in this case. As such, RFQ requirements shall be complied with.
12.	DOCUMENT No. B240-910-80-42-SL-5010 Rev. B	3	2.6	Complete Gas Turbine starting system including all associated auxiliaries and accessories	We understand that spares under Clause 2.6 of SECTION-A to be quoted when GT starting system is other than electric motor start and spares under Clause 1.3 of SECTION-B shall be quoted if electric motor start is offered. Please confirm.	Noted. TECHNICAL AMENDMENT SHALL BE ISSUED.
		4	1.3	All Electrics of GTC Starting System including VFD, Starting motor and other accessories		
13.	DOCUMENT No. B240-910-80-42-LP-5010 Rev. B	2	2.3	Site rated temperature	At Clause 6.2 of B240-910-80-42-SP-5010 Rev. B, site rated temperature has been provided as 47 deg C but relative humidity is not provided. Please clarify. However, at Clause 2.0 of DOCUMENT No. B240-910-80-42-SU-5010 Rev. A, relative humidity of 90% has been provided for maximum ambient temperature of 47 deg C.	Site conditions shall be as per Site & Utility data (Doc. No. B240-910-80-42-SU-5010 Rev. A) attached in the in RFQ. Please follow RFQ requirements.
	DOCUMENT No. B240-910-80-42-SP-5010 Rev. B	3	6.2	Humidity		
14.	DOCUMENT No. B240-910-80-42-LP-5010 Rev. B	2	2.3	Guaranteed Heat rate HG (kcal/kw-hr) of gas turbine with zero percent positive tolerance including errors in instruments and measurement	PTC22 allows measurement uncertainties since all measurements are not absolute and hence technically unavoidable. Please confirm.	Please comply with RFQ requirements.
15.	DOCUMENT No. B240-910-80-42-SP-5010 Rev. B	4	iv	All Piping shall be supplied prefabricated with minimum field joints	Not all field Interconnecting piping shall be supplied in Pre-fabricated condition. Some of the piping will be supplied as free length piping for site adjustment in order to install piping in stress free condition. Please consider.	Noted. Piping must be in pre-fabricated condition & to be provided with minimum field joints.

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16.	DOCUMENT No. B240-910-80-42-SP-5010 Rev. B	5	4.2.5	Gas Turbine Correction Curves	Typical correction curves shall be submitted with the offer. Necessary project specific correction curves as required shall be submitted as part of Performance Guarantee Test procedure. This is in-line with other earlier EIL projects. Please consider.	Please comply with MR requirements. However, GT correction curves (or duly OEM signed and Stamped alternate technical document) to be submitted by bidder should be sufficient for the following: 1. To estimate the deration w.r.t. off-design conditions. 2. To correlate the GT output for various ambient conditions.
17.	DOCUMENT No. B240-910-80-42-SP-5010 Rev. B	9	9.7.5(i)	The filter housing shall be of SS.	We understand that only filter housing shall be of SS and inlet ducting can be of Carbon Steel. Please confirm.	Bidder to note that all parts coming in contact with inlet air shall be of SS construction.
18.	DOCUMENT No. B240-910-80-42-SP-5010 Rev. B	9	9.7.5(vi)	Air filters	Please clarify whether we need to offer static or pulse-cleaning filtration system for the Gas turbine.	The offered Air-filtration system shall be as per GT manufacturer's recommendation and experience suitable for the site and operating conditions in-line with clause no. 5.6.2.1.1 of API 616 5 th edition.
19.	DOCUMENT No. B240-910-80-42-SP-5010 Rev. B	12	9.8.1(v)	The material of construction of lube oil reservoir, lube oil supply and return piping, valve internals etc. shall be of Series 300 Stainless Steel	As per standard OEM design and earlier supplies, lube oil tank will be in carbon steel with epoxy coating. Supply piping up to filters and drain piping are in carbon steel. Stainless steel piping with carbon steel flanges shall be provided only in the downstream of filters. Please confirm.	Vendor standard proven design, as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided. However epoxy paint coated CS will only be permitted. Also, all items downstream of filters shall be SS300 series stainless steel.
20.	DOCUMENT No. B240-910-80-42-SP-5010 Rev. B DOCUMENT NO. B240-910-16-50-SP-5010, Rev A Document No. B240-910-16-51-MD-5010Rev. 0 DOCUMENT No. B240-000-83-41-LL-0001 Rev. 1	20 8 - -	Annexure-A 8 - -	Vendor list Makes of Electrical Equipment/Component VENDOR LIST FOR INSTRUMENTATION ITEMS LIST OF APPROVED VENDORS (PIPELINE ENGINEERING DEPT.)	BIDDER is an ISO 9001 company with an elaborate system for vendor evaluation. As is the practice with all International contractors, BIDDER prefers to operate based on its standard approved vendor list. This is based on the following: • BIDDER's approved vendors have knowledge of BIDDER's quality systems. • BIDDER has knowledge on the actual site working of these vendors. • Interface engineering shall be smooth. • Vendors and model nos. have been chosen & groomed with respect to specific requirements of plant application, working in tandem with interfaces of BIDDER make equipment/other packages of BIDDER approved makes. Vendor supplies have been proved out in many other sites. Considering the short cycle nature of the project, it is difficult for BIDDER to approach new vendors of consultant, evaluate their capabilities especially for the package under consideration. Our own experience is such that we have very few vendors for most of the items and if some of them are eliminated, we may not get sufficient response or get competitive offers. It is with this background that BIDDER suggested going predominantly based on BIDDER's vendors list. It is now proposed to go on the following basis: • Gas Turbine auxiliaries vendor list shall be BIDDER standard vendor list. This is considering that most of the Gas Turbine items were not	Specific item of GTC package may be acceptable upon meeting the provenness requirement as per RFQ. All other items shall be as per the approved vendor list only.

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					listed in the vendor list provided by the consultant. As regards to balance of plant, we may clarify that for most of the EIL projects, BIDDER's standard vendor list was approved by customer. For small items not listed by customer, BIDDER is not submitting a separate list and BIDDER shall follow its approved vendor list. However this can be mutually discussed and settled.	
21.	DOCUMENT No. B240-910-80-42-DS-1002 Rev. B STANDARD SPECIFICATION No. 6-43-0041 Rev. 2	1 6	Row 37 4.1.10	Noise specifications Sound pressure level	Please clarify whether maximum sound pressure level to be considered is 85 or 88 dBA at a distance of 1 meter from the skid edge.	Sound pressure level of 85 dBA @ 1m shall be considered. As per order of precedence mentioned in special instructions to bidders Doc. No. B240-910-80-42-SI-5010, Job specification ranks higher the EIL std. spec. in the order of precedence.
22.	DOCUMENT No. B240-910-80-42-DS-1002 Rev. B	1	Row 53	Spare Rotor assembly	As per Datasheet (Row 53 in Page No.1) of DOCUMENT No.B240-910-80-42-DS-1002, spare rotor has been mentioned. However, as per mandatory spares list (DOCUMENT No. B240-910-80-42-SL-5010 Rev. B), spare rotor requirement has not been mentioned. We shall follow mandatory spares list and spare rotor will not be considered in our offer. Please review and confirm.	Spare Rotor for Gas Turbine is not applicable. Please follow Mandatory spares list (Doc. No. B240-910-80-42-SL-5010 Rev. B). TECHNICAL AMENDMENT SHALL BE ISSUED.
23.	DOCUMENT No. B240-910-80-42-DS-1002 Rev. B	6	Row 304	(Diversion) Valve	As per Datasheet (Row 304 in Page No.1) of DOCUMENT No.B240-910-80-42-DS-1002, diversion valve has been mentioned. As diversion valve is not applicable in gas turbine exhaust and hence will not be considered in our offer. Please review and confirm.	Noted.
24.	DOCUMENT No. B240-910-80-42-DS-1002 Rev. B	9	Annexure-A	Fuel gas composition	Please clarify which gas composition in Primary Fuel for GT- RLNG (Min. LHV & Max. LHV cases) to be considered for performance guarantees. Please confirm whether gas turbine offered shall also have the capability to fire both Case-1 & 2 gas compositions of Semi-rich gas (SRG).	Gas Turbine shall be selected and sized for both the compositions of RLNG indicated in the Gas Turbine/Process Datasheet. However, LHV to be considered to Loading and Penalty purpose is as mentioned in the Loading and Penalty Criteria. Offered Gas Turbine shall be suitable for SRG fuel considering both Case-1 and Case-2. Please refer Annexure-A of GT datasheet (Doc. No. B240-910-80-42-DS-1002 Rev. B).
25.	Document No. B240-910-80-42-VDR-5010 Rev. A Document No. B240-910-16-50-VR-5010 Rev. A Document No. B240-910-16-51-VDR-5010 Rev. A Document No. B240-910-83-41-VDR-5010 Rev. A	- - - -	- - - -	VENDOR DATA REQUIREMENTS FOR GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR PACKAGE VENDOR DATA REQUIREMENTS FOR ELECTRICS OF GAS TURBINE COMPRESSOR VENDOR DATA REQUIREMENTS FOR GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR VENDOR DATA REQUIREMENTS FOR PIPING FOR COMPRESSOR STATION	List of documents for submission will be mutually discussed and finalised during KOM after award of contract. Document submission shall be as per earlier EIL projects. Please confirm.	Noted. However, Documentation requirements as per VDR attached in the MR shall be complied with.

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26.	P& ID B240-02-42-910-1112 Rev.03	-	-	Flow meter and Flow computer (Dual Stream) 910-FQI-1201 (near Gas turbine inlet)	Please clarify and confirm below points: - As per piping symbols, we understand that FT 1201 defined is an orifice type flow meter and for this dual Stream flow computer is been interfaced. Dual stream flow computer is not applicable for orifice type flow meter. Flow computer functionality can be defined in GT control system and thus separate flow computer is NOT required. Please review and confirm. However, we suggest following flow meter at gas turbine inlet inline with our earlier supplies to EIL projects. - We would like to propose to use CORIOLIS MASS FLOWMETER at the gas turbine inlet, which has been supplied and field proven at many of our installations.	Custody transfer certified type dual stream Flow computer is required for connecting two flow meter i.e. one for fuel gas line and the other one on compressor suction line for energy consumption calculation as per RFQ. Alternate type of flowmeter may be selected by vendor with technical justification.
27.	DOCUMENT NO. B240-910-16-50-SP-5010, Rev A Document no. B240-910-16-51-SP-5010	3 5	5.4 2.8	Certification	For imported bought items of Gas Turbine and its auxiliaries, the certificates by suppliers for use in hazardous area application will be from Globally acceptable agencies like FM / CSA / CENELEC etc. of respective country of origin. Regional certification from CCOE (PESO) will not be offered. However, Clause 1.20 in Section-B of DOCUMENT No.B240-910-80-42-SS-5010Rev. B shall be followed for Indigenous items.	PESO/CCOE certification is mandatory requirement. Bidder to comply the same
28.	DOCUMENT NO. B240-910-16-50-SP-5010, Rev A	5	6.8.2	DC System	As per Option-I of EIL specification for DC System document no.6-51-0019, 2Nos. Float cum quick Chargers (each rated for 100%capacity) with 1 set of battery shall be supplied. Please confirm.	Follow RFQ requirements.
29.	DOCUMENT NO. B240-910-16-50-SP-5010, Rev A	7	6.10	LOCAL CONTROL STATIONS	No local control panels shall be provided on the gas turbine skid. Control of Gas turbine is automatic based on operator inputs from control room. No local operation is envisaged for safety reasons as per OEM standard. All alarms and trips are implemented in the control system in control room. However, local gauge cabinet is provided for display.	Noted. However LCS shall be provided for motors for all other auxiliaries as per MR.
30.	Document No. B240-910-16-50-DS-5010 Rev.No.A Document No. B240-910-16-50-DS-5011 Rev.No.A	3 3	Notes Notes	Recommended list of maintenance spares for two years operation shall include the following as minimum: (a) Bearing DE/NDE one set, (b) Terminal box cover with screws, (c) Fan, (d) Terminal block	Recommended list of 2 years O&M spares are OEM specific for their Gas turbine. The listed spares may or may not be applicable as per OEM. GAIL/EIL to consider the list as submitted by the OEM for 2 years O&M spares.	Recommended spares (minimum) indicated are applicable only for motors. Apart from the minimum requirement, it is Bidder's prerogative to furnish list as per their Experience in addition to the minimum requirement as per MR.
31.	Document no. B240-910-16-51-SP-5010	5	Note-2	All instruments shall be suitable to Area classification Zone-1 Gr IIC T3	As fuel gas composition does not have Hydrogen content, hence gas group IIC shall not be applicable. Please review and confirm.	All instruments shall be suitable to Zone-1 Gr IIC T3. Bidder to comply the same.
32.	Document no. B240-910-16-51-SP-5010	6	2.12	Smart transmitters	Most of the transmitters used are smart type. However, smart type transmitters are not used for the fuel control & compressor discharge monitoring as their response time is high.This is per OEM standard design. Please confirm.	Noted.
33.	Document no. B240-910-16-51-SP-5010	11	9.0	Mandatory spares list Doc no. B240-910-16-51-SS-5010	Tender documents does not include Mandatory spares list Doc no. B240-910-16-51-SS-5010. Hence, these spares will be NOT be considered in our offer. However, spares under SECTION-C: INSTRUMENTATION of DOCUMENT No. B240-910-80-42-SL-5010 Rev. B will be quoted.	Both the documents are attached with the tender. Vendor to refer and provide mandatory spares accordingly.

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34.	Document no. B240-910-16-51-SP-5010	14	11.5.2.1	Bidder shall design and provide hazardous gas detection system (including sensors & transmitters) for alarm and shutdown for inside enclosures, combustion air intake plenum chamber, ventilation intake and exhaust of gas turbines	Gas detection and protection shall be provided inside the enclosure. As per OEM design philosophy, gas detection and protection in combustion air intake plenum chamber, ventilation intake and exhaust of gas turbines are not required. Please review and confirm.	Gas detection system as per RFQ shall be provided.
35.	B240-910-16-51-SP-5010	14	11.5.3.2	Ultraviolet (UV) Light Detectors arranged for coincident actuation	As per OEM design, it not recommended UV detectors within the turbine compartment. The UV detectors contain electronics within the detectors that are susceptible to degradation from heat within the turbine compartment. Please review and confirm.	Bidder may propose suitable type of detector with proper technical justification and the same shall be reviewed during detail engineering stage.
36.	DOCUMENT No. B240-910-83-41-SP-0002 Rev. D	-	-	Piping Job Specification for compressor station	All on base piping and fittings for GT and its auxiliaries will be as per proven design of OEM. Please review and confirm.	- All Piping explicitly indicated in P&IDs (which is in Bidder's scope, eg: FG Line, Vents, Drains etc.) shall be as per PMS and other Specifications & Standards attached with the Tender. - All Piping within GTC & Skids and inter-connecting piping between GTC & its auxiliaries can be as per OEM design meeting international code requirements.
37.	DOCUMENT NO. B240-000-02-42-PCS-0001 Rev. 0	-	-	Specification for surface Preparation and protective coating system - new construction	Surface preparation and protective coating for Gas Turbine and it's auxiliaries shall be as per proven design of OEM. Please review and confirm	- Surface Preparation & protective Coating requirements of all Piping in Bidder's scope, explicitly indicated in P&IDs, shall be equivalent or Superior to specification attached with the Tender. The same shall be subject to approval during document review stage after award of Contract. - Surface Preparation & protective Coating requirements of GTC, Auxiliaries and inter-connecting piping between GTC & its auxiliaries can be as per OEM Design.
38.	enquiry(1)_20190925_111615	17	(a)	Duly completed Bidder Proven Track Record Pro-forma as enclosed with the bid document	NO Proven Track Record Pro-forma has been found in the bid document for the Gas turbine. Please furnish.	Bidder to refer commercial Amendment no -1.
39.	General Conditions of Contract (Goods)	16	20	Defect Liability Period	BIDDER shall warrant the equipment for twelve (12) months following initial synchronization of the Unit or eighteen (18) months following the Delivery Date of the Unit, whichever period shall first expire. BIDDER warrants to the Purchaser that the Equipment to be delivered hereunder shall be designed and fit for the mechanical drive application when operated in accordance with the BIDDER's specific operation instructions and, in the absence thereof, in accordance with generally accepted operation practices of industry and shall be free from defects in material, workmanship and title. BIDDER does not warrant the Equipment or any repaired or replacement parts against normal wear and tear, including that due to environment or operation, including excessive operation at peak capability, frequent starting, type of fuel, detrimental air inlet conditions or erosion, corrosion or material deposits from fluids. The warranties and remedies set forth herein are further conditioned upon	Bidder's proposal Not accepted. Bidder to follow provisions of RFQ Document.

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					(i) the proper operation, and maintenance of the Equipment and conformance with the operation instruction manuals (including revisions thereto) provided by the BIDDER and/or its Suppliers, as applicable and (ii) repair or modification pursuant to the BIDDER's and/or its Suppliers instructions or approval. The Purchaser shall keep proper records of operation and maintenance during the Warranty Period. These records shall be kept in the form of log sheets and copies shall be submitted to BIDDER upon its request. The warranty does not cover all consumable spares required during operation & maintenance and mandatory inspections of the supplied equipment and the components whose life is less than warranty period. The warranties do not cover the repairs/ recoats required to be done during scheduled inspections for certain components as explained in the O&M manuals.	
40.	STANDARD SPECIFICATION No. INDIA LIMITED MANAGEMENT SYSTEM 6-78-0001 Rev. 1	5	5.4	The quality planning shall result into the quality assurance plan, inspection and test plans (ITPs) and job procedures for the project activities in the scope of bidder. These documents shall be submitted to EIL/Owner for review/approval, before Commencement of work.	Since Gas turbines are manufactured on advance action on proven design basis, hence Quality plans for the items of the GT package including GT (flange-flange) and other on-base items shall be submitted to customer for information only and for major bought out items for review and mutual agreement. Please review and confirm.	Please follow RFQ requirements.
41.	BIDDER TQ	-	-	Gear Box Power Loss	Gear Box power loss will be considered based on Compressor-absorbed power. Please confirm.	Noted. Gear box power loss shall be based maximum compressor power. The same (along-with other transmission losses, if any) shall be added to Compressor BKW while sizing the Gas Turbine Driver. As already specified in RFQ, the Gear-Unit Rated power shall be equal to at-least the Gas Turbine ISO Power.
42.	B240-910-KA-MR-5010-504-RFQ	17 of 1280	B1-C	Technical Criteria of BEC	Kindly Provide PTR format for Compressor and Gas turbine.	Bidder to refer commercial Amendment no -1.
43.	B240-910-80-42-SS-5010 Rev B	325/1280	3.1	Fuel Gas Booster System(if Required)	Please inform type of compressor is required if Fuel Gas Booster is applicable including driver and their mandatory spares.	Fuel Gas boosting system is not envisaged. Bidder shall comply to the B/L conditions of the fuel gas without any booster compressor.
44.	B240-910-80-42-SS-5010 Rev B Page no 337/1280	337/1280	Note-13	PLC Sizing	Since PLC is to be sized for scope of Purchase Instruments also. Kindly provide IO count input for sizing PLC.	As per the P&ID's and Job specification attached with the tender document.
45.	B240-910-80-42-SS-5010 Rev B	330/1280	15.5	Customer Training-15 Persons X 2 weeks at bidders works/Sub vendor works	Bidder will decide the no of man weeks (i.e. in 30 man weeks) training at bidder's works and vendor's works.	Please comply with RFQ requirements.
46.	B240-910-80-42-SS-5010 Rev. B	326/1280	5.3	Seal gas heater	Seal gas heater is not required: Heating is not required for Seal Gas as per gas composition / available pressure & temperature.	Noted. However, if at a later stage, it is found that Seal Gas heater is required, then the same shall be provided by the bidder without any time/cost implication to the purchaser.
47.	B240-910-80-42-SS-5010 Rev. B	332&334/1280	1.1.6 / 2.1.10	Anti-surge controllers,Performance / Master controller and load sharing controller (if required)	Only anti-surge controller is applicable. Performance/Master controller and load sharing controller are not applicable as it is a single compressor train.	Noted.
48.	B240-910-80-42-SL-5010 Rev. B	346/1280	5-II, 5-III	Performance/Master controller (if applicable) load sharing controller (if applicable)	Only anti-surge controller is applicable. Performance / Master controller and load sharing controller are not applicable as it is a single compressor train.	Noted.

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BIDDER : BIDDER 1

SL. NO.	REFERENCE OF TENDER DOCUMENT				BIDDER'S QUERY	EIL/GAIL RESPONSE
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49.	B240-910-80-42-SP-5010 Rev. B	362/1280	9.2.17	Seal Gas Panel	Seal gas panel shall be manufactured by BIDDER. Seal gas skids are fabricated items (aggregate of filter, control valve and instruments along with piping). DGS vendor is not manufacturer of these skid items. Bidder has proven experience. Recent EIL projects include CPCL DCU (A133), IOCL Haldia CGC (A609)	Please comply with RFQ requirements.
50.	B240-910-80-42-DS-1001 Rev. No. B	386/1280	Notes-9	Seal gas cooler (Air-cooled type), if required, shall be included in the bidder's scope of supply.	Seal gas cooler is not required. High temperature for seal gas is an advantage. Cooling may lead to condensation and thereby damage the DGS.	Noted.
51.	B240-910-16-51-SP-5010	509/1280	2.5/2.5.1	Anti-surge controllers, Performance / Master controller and load sharing controller (if required)	Only anti-surge controller is applicable. Performance/Master controller and load sharing controller are not applicable as it is a single compressor train	Noted.
52.	B240-910-16-51-SP-5010	517/1280	Other Notes-11.6.2 / 11.6.4.9 (11.6.4.9.1)	Emergency Surge Detectors	Emergency Surge Detectors. Emergency Surge Detectors are not required for Centrifugal Compressor	Noted.
53.	B240-910-16-51-SP-5010	517/1280	Other Notes-11.6.3 (11.6.3.1 to 11.6.3.17)	Load Sharing / Performance Master Pressure Control	Not applicable. Performance/Master controller and load sharing controller are not applicable as it is a single compressor train	Noted.
54.	B240-910-16-51-SP-5010	517/1280	Other Notes-11.6.4.11	A maintenance notebook computer with the latest version of CCC's Engineering Utilities shall be supplied	A maintenance notebook computer with the latest version of ASC System Engineering Utilities shall be supplied	Noted.
55.	B240-910-16-51-SOW-5010	533&534/1280	2.1.3 / 2.1.11	Anti-surge controllers, Performance / Master controller and load sharing controller (if required)	Only anti-surge controller is applicable. Performance/Master controller and load sharing controller are not applicable as it is a single compressor train	Noted.
56.	B240-910-16-51-SK-0001	540/1280	---	Performance/Master controller	Only anti-surge controller is applicable. Performance/Master controller and load sharing controller are not applicable as it is a single compressor train	Noted.
57.	B240-910-16-51-SK-0002	541/1280	---	Performance/Master controller	Only anti-surge controller is applicable. Performance/Master controller and load sharing controller are not applicable as it is a single compressor train	Noted.
58.	BIDDER TQ		BIDDER TQ-2	Anti-surge Controller	Anti-surge controller shall be part of Compressor PLC. Anti-surge control is part of Integrated compressor control (compressor PLC), hence separate anti-surge controller + spares are not applicable.	Noted
59.	BIDDER TQ		BIDDER TQ-3	MMS	The MMS sensors / MMS monitors for Gas Turbine shall be separate from Compressor MMS. The MMS for Gas Turbine is supplied by GT OEM and are integral to GT Control System / PLC. The MMS for Compressor shall be supplied by BIDDER.	Noted. However, vendor to provide one complete integrated system.
60.	B240-910-80-42-SS-5010 B240-910-80-42-SP-5010	4 of 16 12 of 23	4.3 9.8.1 (iv)	Emergency Overhead Lube oil rundown tank...	Emergency Overhead Lube oil rundown tank will be provided only if required. Clarification only.	Please refer Sl. No. 19 above.
61.	B240-910-80-42-SS-5010 B240-910-02-42-DS-1501 B240-910-80-42-SP-5010	5 of 16 5 of 6	5.7 Note Note 11	Start-up/ emergency external seal gas	During normal operation, seal gas will be from compressor discharge. During, transient conditions like, start-up/ shutdown/ settle-out/ emergency, process gas will be used as seal gas. Seal gas booster will be used. Nitrogen bottle bank will not be considered.	Noted. Bidder to ensure that N2 B/L conditions as per Site & Utility data is sufficient for secondary seal. If the B/L conditions (of Normal/Emergency/Start-up seal gas/Nitrogen etc.) indicated in the RFQ are not

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BIDDER : BIDDER 1

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		5 of 23	9.2.5, 9.2.6, 9.2.9		Clarification only.	sufficient, bidder may include boosters in his scope.
62.	B240-910-80-42-SS-5010	7 of 16	13.3	Detailed fabrication, installation drawings & bill of materials for structural supports, access/maintenance platforms, ladders for LO rundown tank	Not in vendor scope for Lube oil run down tank (if applicable). Clarification only.	Please refer Sl. No. 5.0 above.
63.	B240-910-80-42-SS-5010 B240-910-83-41-SP-0002 B240-02-42-910-1111	16 of 16 3 of 6	Sec-D (i) 3.0 (3)	Manually operated full bore ball valves upstream & downstream of PSVs	These valves are not '*' marked in the P&ID. Request to confirm the scope of supply for these valves.	These Ball Valves to the Upstream and Downstream of PSVs with Tag Nos. 910-PSV-1401A and 910-PSV-1401B are in the Scope of Compressor Vendor.
64.	B240-910-80-42-LP-5010	2 of 6, 6 of 6 Annexure-1	2.0, 2.1, 2.3	Rated/Guarantee case	We understand that BkW _G corresponds to Guarantee case (i.e., CASE 1B) only as per compressor process datasheet and not the Rated case. Please confirm.	Case-1B is mentioned as Guarantee Case as it is envisaged to be of the highest BkW among Cases-1A, 1B, 1C and 1D. As such, the max. power case in Case-1 shall be considered as the Rated/Guarantee case.
65.	B240-910-80-42-SU-5010 B240-02-42-910-1111	4 of 4	6.0 Note-21	Flare Header pressure	Request to inform the normal flare header pressure.	Please refer Site & Utility data
66.	B240-910-80-42-SU-5010, B240-910-80-42-SS-5010 B240-910-80-42-SP-5010, B240-910-83-41-11901	4 of 4 5 of 16 3 of 23 (Equipment layout)	7.0 (a), (b), (d) 8.4 7.2	Auxiliary piping, Utility piping, Vent & drain piping	a) Complete Auxiliary piping (seal gas/Lube oil) within the skids & between various skids is in vendor scope. Please confirm. b) We understand that all utilities (N2, CW, Inst air, external seal gas etc) shall be provided by purchaser as single inlet point and single outlet point at vendor's battery limit as defined in equipment layout. Further distribution within the vendor's battery limit shall be by vendor. Please confirm. c) Vent & drain piping (for vendor equipment) within vendor's battery limit is in vendor scope. Please confirm.	(a). Confirmed. (b). Confirmed. (c). Confirmed.
67.	B240-910-80-42-SP-5010	3 of 23	7.1	Process gas piping	Complete process gas piping including anti-surge piping is not in vendor scope.	Bidder's Scope of piping shall be as per P&IDs and Piping Job Specification B240-910-83-41-SP-0002
68.	B240-910-80-42-SP-5010 B240-910-80-42-DS-1001	14 of 23 5 of 7	9.10 Line 292	Baseplate	Baseplate will be separate compressor & driver. However, the same will be integrated (bolted & dowelled) at site. 4/6 point lift of complete skid is not feasible. Clarification only.	Noted. Please refer Sl. No. 1.6 of Scope of supply (Doc. No. B240-910-80-42-SS-5010) which is self-explanatory.
69.	B240-910-80-42-SP-5010	18 of 23	15.0	Equipment layout	Will be discussed.	Bidder to confirm compliance with the space provided.
70.	B240-910-80-42-SP-5010 B240-910-80-42-VDR-5010	18 of 23	16.0	VDR	VDR shall be mutually discussed & settled during kick off meeting.	Documentation requirements as per VDR shall be complied with.
71.	B240-910-80-42-SP-5010	19 of 23	17.0	Sub-vendor list	Sub-vendor list will be as per vendor standard list.	Please comply with RFQ requirements.
72.	B240-910-80-42-DS-1001 B240-910-80-42-SP-5010	2 of 7 19 of 23	Line 106 18.1	Outdoor storage	Outdoor storage will be up to 12 months (max)	Minimum 12 months to be considered.
73.	B240-910-80-42-DS-1001	5 of 7	Line 270	Individual stage drain	Individual stage drains will not be provided, common drain will be provided. This being a barrel type machine, common drains will be provided. For	Noted. However, bidders to ensure that double block valves in the Casing drain lines are provided.

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					barrel type machines, during maintenance diaphragm bundle will be removed in horizontal direction, hence for easy maintenance individual stage drains will not be provided.	
74.	B240-910-80-42-DS-1001, B240-910-80-42-SP-5010	5 of 7 14 of 23	Line 280 9.9	Coupling type	Non-lubricated SS flexible membrane type (disc type) coupling will be provided. Coupling will be as per API 671, 4 th ed. Clarification only.	Noted.
75.	B240-910-80-42-DS-1001	6 of 7	Line 335	MRT	Dry gas seals will not be used during mechanical run test because during this test compressor has to run under vacuum and vacuum is detrimental to these types of seals. Dry gas seals will be used during compressor performance test. This is only clarification.	Noted.
76.	B240-910-80-42-DS-1001	6 of 7	Line 346	GTC Train Unitization	As per compressor datasheet, Unitization is required at SPRV work. Please confirm that bidder understanding is correct. We recommend to have Unitization @ bidder work before dispatch of GTC Train to site.	GTC train unitization shall be at Bidder's (SPRV) shop.
77.	B240-910-80-42-DS-1003	3 of 3	Remark 5	Complete unit test	Complete unit test is not applicable. Clarification only.	Noted and confirmed.
78.	B240-910-80-42-DS-1005	1 of 1	Line 47	DGS tests	Following tests for dry gas seal system are not considered: Check controls, Changeover filters and Sound level. Skid will be tested without compressor. Hence, it is not possible to do these tests.	Please comply with RFQ requirements.
79.	B240-910-80-42-DS-1010	2 of 2	Line 90	Contract Guard to be used during Shop Test	Contract guard will not be used during shop test as the compressor will be driven by shop motor and shop gearbox.	Noted.
80.	B240-910-02-42-DS-1501	5 of 6	Notes 20	Settle-out pressure	Since all process equipment & complete process gas piping is in customer scope, we request customer to inform the settle-out pressure.	Settle-out pressure shall be calculated and provided by bidder.
81.	B240-02-42-910-1112			Process gas line material	Request to confirm the process gas line material.	Please note that no process gas piping is envisaged i bidder's scope. However, please refer P&IDs and PMS attached.
82.	B240-02-42-910-1115			Natural gas Dryer and filter package	Natural gas Dryer and filter package is not in Vendor scope. Please confirm.	Confirmed
83.	General			coupling rating	Coupling between Compressor & GB will be designed for maximum compressor power. Clarification only.	Noted. Service factor to be selected as per RFQ.
84.	B240-910-80-42-SP-5010	13 of 23.	9.8.3.ii	The cooler tubes shall be series 300 stainless steel. The header boxes shall be made of hardened stainless steel plate.	The cooler tubes shall be high finned welded series 300 stainless steel with aluminum fins. The header boxes shall be made of series 300 stainless steel plate..	Noted.
85.	B240-910-80-42-SP-5010	13 of 23.	9.8.3.vi,	ASME code stamp is required on all coolers.	The coolers shall be designed using ASME, but ASME stamping is not envisaged.	Please comply with RFQ requirements. However, code stamping is not envisaged.
86.	B240-910-80-42-SP-5010	13 of 23.	9.8.3.iv,	Oil cooler shall be provided with adequate number of fans with 100% spare capacity. Cooling area shall be 200% of the required surface area.	This is a clarification. Provision of 200% surface area requires 100% spare capacity fans also. If one condition followed, other will automatically followed.	Please comply with RFQ requirements.
87.	B240-910-16-51-MD-5010, Rev 0			Vendor List for Instrumentation	Bidder propose to source the controllers for GT and compressor from	Noted

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				Items	respective OEMs or their approved vendors. Please confirm.	
88.	B240-910-80-42-SS-5010, Rev-B	15 of 16	13	All indications, recording of instruments, status, control and alarms of Instruments (which are NOT marked as * in attached P&IDs) shall also be in common facility PLC supplied by GTC Package vendor. Vendor to size the PLC accordingly.	Bidder understand that these feature are to be provided in PLC HMI only. Please confirm if any backup panel is needed for the same.	Noted
89.	B240-910-80-42-SS-5010, Rev-B	2 of 9	Section-C 1.1.6	Antisurge controllers, Performance/Master controller and load sharing controller (if required).	Bidder understand that master controller, load sharing controllers,etc. are required only when there is an existing compressor already operational in the plant. Customer to furnish details of existing compressor & their control system.	Noted.
	B240-910-16-51-SP-5010	4 of 21	2.5	Antisurge controller for compressor along with a dedicated Load Sharing / Performance (if required) Master Controller mounted in unit control panel.	Bidder understand that Anti-surge controller, Load sharing / Performance / Master Controller (if required) shall be part of proposed GT + Compressor control system. No separate standalone equipment will be required. Please confirm.	
	B240-910-16-51-SP-5010	15 of 21	11.6.3.1	Bidder shall supply Load Sharing / Performance Master Pressure Control System of Gas compressor Units. The same shall be a separate dedicated standalone Controller System suitably interfaced with the UCP PLC for the Logic and Sequence control.	In case of requirement of separate standalone system, customer to provide list of suggested or approved vendors.	
90.	B240-910-80-42-SS-5010, Rev-B	3 of 9	Section-C 1.1.8	Integration of Compressor control systems with existing DCS/PLC systems.	1) EIL to give details of existing system & requirement of integration. Bidder understands that only monitoring of GT + Compressor parameters are required in the existing system & no operation is required in existing DCS system. Please confirm. 2) Bidder understand that modification of existing system is not in bidder scope. Please confirm. 3) Bidder understand that the connection link is only for monitoring the signals from existing control system. Please confirm. 4) Bidder understand that terminal points is at suitable terminals in bidder control system. All the cabling from existing purchasers control system to DCS shall be in customer's scope. Please confirm.	1) Signals required to be integrated are indicated in the P&ID, Job specification etc. Vendor to follow the same. 2) Noted 3) Noted 4) cables are in vendor's scope
	B240-910-16-51-SP-5010		2.3	Signals to / from purchaser's Station PLC. Existing Purchaser control system (RTU/SCADA/DCS). All other signal shall be connected to DCS through serial link.		
91.	B240-910-16-51-SP-5010	20 of 21	11.8.1	The PLC console (control room mounted) shall be used as	Panel mounted HMI can be provided depending on OEM's standard. Alternately, bidder may propose to provide additional HMI to be	Please follow RFQ requirement.

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				operating cum engineering console. The UCP Panel mounted HMI shall be used as operator console only. The Engineering workstation shall be used for PLC Programming, MMI development, Program storage, and fault diagnostics in addition to the monitoring and Plant operation. The MMI software shall be from the original manufacturer of PLC and should not be third party software.	mounted on separate desk. It shall be placed near to the UCP panel. Please confirm.	
92.	B240-910-16-51-SP-5010	20 of 21	11.8.2	Operator console shall have data equalization and clock synchronization among each other. If alarm is acknowledged on one console then same shall be acknowledged automatically in other console.	Please confirm whether the master clock for time synchronization of UCP/PLC is to be provided by the bidder or it is in customer's scope.	Clock synchronisation signal to be taken from existing control system by vendor.
93.	B240-910-16-51-SP-5010	21 of 21	11.10.3	All shutdown / interlocking, sequential start-up and other auxiliary equipments shall be located with in the compressor unit control panel / PLC.	Depending on OEM standard, bidder many propose all indications, operations, push buttons, etc. in HMI and not panel mounted. Please confirm.	Bidder to follow RFQ requirement
94.	API 617 7 th edition					Please refer Sl. No. 2 above.
95.	Other API deviations (if any)					

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SR NO.	RFQ CLAUSE REFERENCE	CLAUSE DESCRIPTION	BIDDERS QUERIES /DEVIATIONS	EIL/GAIL RESPONSE
1	Form SP-3 - A1	Supervision Charges	The price mentioned is inadequate. Bidders must be allowed to quote their own price and client can evaluate the offer holistically duly including supervision charges quoted by respective OEMs, as done in past projects and as being done for training and HAZOP in this tender.	SCM Response- Bidder proposal Not accepted. Bidder to follow issued RFQ Document.
2	Form SP-3 - Sr 13	Supervision Charges - Escalation	8% annual escalation - This is not acceptable. We are unable to foresee supervision charges of our company multiple years from now.	SCM Response- Bidder proposal Not accepted. Bidder to follow issued RFQ Document.
3	B240-910-80-42-LP-5010 & B240-910-80-42-SP-5010 & B240-910-80-42-SU-5010	Temperature for Loading & Penalty	The tender specifies 47 Deg C to be temperature for Fuel Loading of Gas Turbine. Request to please clarify considering that 47 Deg C is the max temperature which shall occur only for few hours in a day for approx 2-3 weeks in a year. Loading at such high temperature on a continuous basis for 5 years does not represent true operating conditions. We strongly suggest to please provide an average temperature which will be more realistic to arrive at a logical value for loading and penalty.	Loading is defined for the maximum ambient operating condition for the Gas Turbine. Please comply with RFQ requirement.
4	B240-910-80-42-SP-5010 Clause 6.2 (ii)	GT Sizing	For Case -2, Tender specifies no margin on compressor power. Bidder clarifies the absence of any power margin for the case 2 operating case which is really required considering the below losses occurring during machine life cycle: -Gas turbine aging -Turbine blade fouling that cannot be recovered by washing -Inlet Air Filter Fouling -Centrifugal compressor Wear Further any over-firing if possible, to cover the above losses will result in early and increased maintenance costs. Hence a 10% margin is to be kept for all cases. Additionally, in past even for "off design" cases, EIL has not even allowed bidders to utilize the 10% margin between compressor power and driver rating or go above 100% speed. In this case none of the cases are off-design cases. Bidder strongly recommends to re-instate the margin of 10% between compressor and GT power for all cases. Bidder is unclear as to the reasons behind such a high risk where no margin is being taken on Compressor Max Power case.	Please comply with RFQ requirement. Case-2 operating case is not a prevalent case of operation.
5	B240-910-80-42-SL-5010	Mandatory Spares - Starter System	a) We understand starter spares need to be supplied irrespective of the type of system. Please confirm.	a) Starter motor critical spares need to be supplied as part of Mandatory spares. TECHNICAL AMENDMENT WILL BE ISSUED.
			b) Bidder would like to clarify that starter is required to work for very limited period of time and not for continuous operation. Hence, unclear as to why complete system is being asked as spare. In the past for Critical systems (having no stand-by/ spare), EIL has never asked for complete spare. We strongly request to please re-visit the rationale for specifically asking full GT starter system as spare.	b) Starter motor critical spares need to be supplied as part of Mandatory spares. TECHNICAL AMENDMENT WILL BE ISSUED.
			c) Tender specifies all components of Motor and VFD separately as spare and also complete Motor and VFD as spare. As clarified in "b" above, full starter motor and VFD are not required. Section B Sr no. 1.1 and 1.2 sufficiently cover the parts that may need spare parts at site.	c) Starter motor critical spares need to be supplied as part of Mandatory spares. TECHNICAL AMENDMENT WILL BE ISSUED.

6	B240-910-80-42-SL-5010	Mandatory Spares - Gas Generator	On one hand items which will be in operation for few minutes are having complete spare in tender. On the other hand the heart of the machine- Spare Gas Generator is missing. Bidder would like to re-emphasize that this is one of the most long lead item and can lead to significant production and revenue loss for months at a stretch. GAIL in existing sites always maintains spare rotor / gas generator as spare. Additionally, out of the complete list of mandatory spares, this is one item which will act as both insurance and also future operation use whereas most of the other mandatory spares in RFQ are dependant on failure of the main part. Considering the above, bidder strongly recommends to include Gas Generator in spare part list.	Please follow RFQ requirements
7	JOB SPECIFICATION;B240-910-80-42-SP-5010 Rev. B; 9.7.5 Air Inlet System (i)	The air intake shall be from safe area (16 m from nearest leakage source) and the air intake filter shall be at a height of minimum 6 meters from grade level.	For the air intake from safe area (of 16 m from nearest leakage source) ,Bidder clarifies that Filter House and Air inlet will be designed for safe area,but the distance of 16m from nearest leakage source (i.e.for eg:Fuel gas supply flange battery limit to the package) is not feasible due to compact and pre-engineered arrangement of the package.Futher Bidder clarifies that Safe area and min distance from leakage source need to be arrived based on the dilution study that has to be done by the customer based on the overall plant layout and prevailing wind directions..	Bidder is to ensure that air intake has to be from safe area only.
8	JOB SPECIFICATION;B240-910-80-42-SP-5010 Rev. B; 9.7.5 Air Inlet System (ix)	The inlet air filter element shall be replaceable while the unit is in operation.	Bidder clarifies only pre-filter can be replaced online. High efficiency filter cannot be replaced during operation due to any chance an of Foreign object damage to the Gas turbine.	Noted
9	JOB SPECIFICATION;B240-910-80-42-SP-5010 Rev. B; 9.7.7 Fuel gas supply (vi)	Fuel gas supply from conditioning skid to each train shall be provided with a PCV	Bidder clarifies Pressure control valve is not required on the Fuel supply line based on the Fuel gas pressure as provided in the MR.Hence this will be excluded from the Scope of Supply. Kindly confirm	Noted, however PCV if required during detailed engineering stage, will be provided by the bidder (in case of award).
10	Mandatory spares;B240-910-80-42-SL-5010 Rev. B/2.4	Bleed valves	Bidder clarifies DLN operation is bleedless.Hence this spares is not applicable and will be excluded from scope of supply.	Noted
11	Mandatory spares;B240-910-80-42-SL-5010 Rev. B/5.1 (b)	Centrifugal pump/mechanical seals	Bidder clarifies Lube oil Centrifugal pumps are vertical and not horizontal as a part of package design. Fully submerged pumps has lip seal instead of mechanical seals.Hence mechanical seals are excluded from spares for centrifugal pump	Noted. Bearings & Mechanical Seals for Lube-Oil Pumps standa deleted. TECHNICAL AMENDMENT WILL BE ISSUED.
12	Lube oil pump (Horizontal-centrifugal);B240-910-80-42-DS-1008 Rev. No. A	General comments	Bidder clarifies Vertical Centrifugal pumps according to ISO5199 with lip seal will be provided instead of Horizontal pumps.	Noted. However, the offered pumps shall be compliant to API 610/API 676 (as per offered type).
13	Lube oil pump (Rotary);B240-910-80-42-DS-1008 Rev. No. A	Relief valve	For Shaft Driven LO Pump - Bidder clarifies Relief valve will be Built in and external option is not feasible.	Please follow RFQ requirements
14	B240-910-80-42-SS-5010 Section C -1.1.8	Integration with existing system	Please clarify scope of integration. Bidders understands that all communication needs to be established with exsiting system. Kindly confirm.	Bidder to refer Job Specification-Instrumentation, Special requirements (Other Notes/S.No. 11.9) for details.
15	B240-910-80-42-SS-5010 Section 2.1.4, B240-910-16-51-SP-5010 Clause 2.1	Integrated Gas Turbine Compressor Control System vs System shown in B240-910-16-51-SK-0001	Basis referred clauses, Bidder understands that Integrated Gas Turbine Compressor Control System is acceptable. Hence, Anti Surge Controller and Performance Controller will be integrated with GT System. Temperature & Vibration montioning system will be in separate cabinet within the UCP.	Noted.
16	JOB SPECIFICATION INSTRUMENTATION GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR PACKAGE; B240-910-16-51-SP-5010; REV A/2.6.5	Ingress protection for instruments and enclosures in field: Weatherproof to IP55 as a minimum. IP65 for transmitters, solenoid valves, junction boxes and field switches (wherever applicable)	Bidder clarifies all instruments are IP65 min, except for below as they are housed in purged enclosure : -Position transmitter for IGV,NGV,Fuel gas metering valve - Solenoid valves of Fuel gas shut off valve Considering, the above instruments are housed in purged enclosure, kindly accept.	Bidder to note that all Instruments shall be minimum IP65 certified. However for instruments inside purged enclosure bidder to provide and indicate IP rating suitable for the given conditions.
17	JOB SPECIFICATION INSTRUMENTATION GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR PACKAGE; B240-910-16-51-SP-5010; REV A/2.8	All instruments shall be suitable to Area classification Zone-1 Gr IIC T3 (minimum requirement for instruments).	Refer B240-910-80-42-SP-5010 Clause 9.7.9 (v) . In line with this clause, Bidder clarifies all instruments inside enclosure which will be active before pressurisation or remain energised after loss of pressurization will be suitable for Zone-1 as per clause 2. 8 of Instrument Job Spec . Rest all instruments (inside enclosure) are suitable for Zone 2 area classification in line with Clause 5 of B240-910-16-50-SP-5010 (Electrical Job Spec).	All instruments shall be suitable to Zone-1 Gr IIC T3.

18	JOB SPECIFICATION INSTRUMENTATION GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR PACKAGE; B240- 910-16-51-SP-5010; REV A/2.8	Intrinsically safe in general. Solenoid valves shall be flameproof.	1) Bidder clarifies All instruments inside enclosure which will be active before pressurisation or remain energised after loss of pressurization will be of Intrinsic Safety type except for the below for which Exd are provided which is suitable for Zone 1: -Fire detectors,Gas detectors & solenoid valves will be Exd as intrinsic safety is not technically feasible in these instruments.Gas detector technology needs heaters to keep lenses clear of water, so use more power and hence Exi is not feasible.Same for heat rise detectors where the working principle does not allow to have Exi. 2)Instruments which will not be active before pressurisation or remain energised after loss of pressurization will be either Exd or Exn. 3) Outside enclosure instruments - Vibro-switches which needs min power for the working will be Exd as Exi is not possible.	All Instruments shall be either Intrinsically safe or Explosion proof type only. Ex-n Instruments are not acceptable.
19	JOB SPECIFICATION INSTRUMENTATION GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR PACKAGE; B240- 910-16-51-SP-5010; REV A/2.11.1	Integral LCD type outputmeter : Required (Display output in user configurable engineering units) with each transmitter.	Bidder clarifies Fast response pressure transmitters are not provided with display due to reliability reasons. The same has been accepted by EIL in past jobs for Frame machines.	Only fast reponse type pressure transmitter without display, required for specific application, is acceptable. However, all other transmitters shall be with integral display.
20	JOB SPECIFICATION INSTRUMENTATION GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR PACKAGE; B240- 910-16-51-SP-5010; REV A/2.17	Control valve limit switches : Proximity type, intrinsically safe	Bidder clarifies Fuel gas Woodward consoles (shut off+ metering),IGV and NGV are of Exd and not Exi. Exi solutions is not validated and not proven in field Limit switches will be Exd.	Exd type Limit Switches are also acceptable
21	JOB SPECIFICATION INSTRUMENTATION GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR PACKAGE; B240- 910-16-51-SP-5010; REV A/2.20(b)	Thermocouple : Grounded type	Bidder clarifies Grounded thermocouple though have faster response has a big disadvantage of high errors since it is connected to ground .For gas turbine since reliability is a much more important factor ,reliable ungrounded thermocouples are used whose errors are less since isolated from ground. Hence, Grounded thermocouples are strongly not recommended.	Un Grounded thermocouples are also acceptable.
22	JOB SPECIFICATION INSTRUMENTATION GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR PACKAGE; B240- 910-16-51-SP-5010; REV A/5.1	1.5 mm ² twisted in pair individually and overall shielded with aluminium Mylar tape with drain wire and armoured. Multipair cable shall be 6P(1.5mm ²) or 12P(1.5mm ²) type	Bidder clarifies that cables of GT Package shall be as per bidders proven standard accepted globally.	Not acceptable. All cables pair and thickness shall be as per MR requirement.
23	JOB SPECIFICATION INSTRUMENTATION GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR PACKAGE; B240-	Flame retardant+Low Smoke : Required, as per IEC 60332 Cat. A.	All cables will be flame retardant as per IEC 60332 except below 1) Fire and gas signal cables ,they are fire resistant as per IEC 60331. 2)Cables Inside GT enclosure are customized for High temperature cables without low smoke which is not feasible to be changed.	Noted
24	JOB SPECIFICATION INSTRUMENTATION GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR PACKAGE; B240- 910-16-51-SP-5010; REV A/6.1	Separate JB's for for different type of signals	Bidder clarifies System wise segregation is not followed and separate Junction box will not be used Signal segregation is determined by voltage level. IS loops will be segregated from not-IS loops.	System wise segregation is not envisaged in the MR. Segregation shall be type wise i.e. IS and non IS and on voltage level wise.
25	JOB SPECIFICATION INSTRUMENTATION GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR PACKAGE; B240- 910-16-51-SP-5010; REV A/6.2	Type of JB's: Flame proof for Ex-proof instruments	As per clause 5.1.1 of B240-910-16-50-SP-5010 (Electrical Job Spec) area classification of compressor package is Zone 2, Ex-de. Hence, Exe JB's shall be provided. Exe JB's are also suitable for Zone 1 as only terminal strips are present inside JB.	Not acceptable. Flame proof type JB shall be provided for for all Ex- proof Instruments

26	Scope of Supply;B240-910-80-42-SS-5010 Rev. B;section b electrical /1.5	Flameproof Local control station/ local control panel for local operation of motors with Start, Stop push buttons, ammeter etc. It shall also contain other devices like selector switches, indications, etc as per operational/ process requirements.	1) Bidder clarifies Local control station for the motors will be excluded for the Starting motor as accidental operation may damage the machinery.Once GT speed becomes self sustaining the Starting motor will be swithced off & Post that the motors are not expected to be started. This shall be controlled only by UCP. 2) Bidder clarifies additional Local control station will not be provided for Water washing motor and Lube oil purifier motor as the trolley has local panel with start/stop buttons included.	1). Noted. 2). Noted.
27	JOB SPECIFICATION (ELECTRICAL) GAS TURBINE COMPRESSOR B240-910-16-50-SP-5010. 5.1	Area classification for GT starter motor	Considering the starts of GT motor (LV) is very limited and operation is also limited to few minutes during starting, Exn / Exe motors are suitable for Zone 2, Gas Group IIA / IIB, T3. Bidder requests to kindly accept Exn / Exe motor only for GT starting motor.	Not Acceptable. Bidder to follow RFQ requirements.
28	JOB SPECIFICATION (ELECTRICAL) GAS TURBINE COMPRESSOR B240-910-16-50-SP-5010. 6.6.7	Combined testing of VFD and Motor	Please remove requirement of Combined Testing of VFD and Motor. Bidder shall ensure to provide valid CCOE certificate for the motor.	Combined Testing of VFD & Motor is deleted. PESO approval with type test certificate is mandatory. TECHNICAL AMENDMENT WILL BE ISSUED.
29	JOB SPECIFICATION (ELECTRICAL) GAS TURBINE COMPRESSOR B240-910-16-50-SP-5010. 6.9.4	Interface with LCS	Considering that LCS will not be provided for GT Starting Motor due to safety reason, interface with LCS as required by clause6.9.4 shall not be provided.	Noted. However the same is applicable only for Starting motor.
30	JOB SPECIFICATION (ELECTRICAL) GAS TURBINE COMPRESSOR B240-910-16-50-SP-5010. 6.9.7	Installation in Non AC area	Please ensure that the drive room is dust free and fully ventilated to dissipate heat loss from drive.	Noted.
31	JOB SPECIFICATION (ELECTRICAL) GAS TURBINE COMPRESSOR B240-910-16-50-SP-5010. 6.11.6	Lamps used shall be of LED type	Bidder clarifies LED lamps are not used because of High temperature inside enslosure.Instead Halogen or Mercury vapour lamps are used.	TECHNICAL AMENDMENT REGARDING DELETION OF LED REQUIREMENT WILL BE ISSUED.
32	JOB SPECIFICATION (ELECTRICAL) GAS TURBINE COMPRESSOR B240-910-16-50-SP-5010. 6.11.5	Interface with Purchaser's Motors starters	Please provide the details of Purchaser's motor starters.	Same shall be read as Bidder's Motor starters. TECHNICAL AMENDMENT WILL BE ISSUED.

PROJECT : INSTALLATION OF GTC AT GANDHAR

CLIENT : GAIL INDIA LIMITED

JOB NO.: B240

SUBJECT: PRE-BID QUERIES AGAINST RFQ. NO. TENDER NO: SM/B240-910-KA-MR-5010/504

BIDDER : BIDDER 3

Sl. No.	Ref./Clause no.	Description	Item	Query	EIL/GAIL Response
1	15.3 of GCC; 4 of SCC	Delivery & Documents: Delivery Schedule		After the words "essential" please add the following "with Liquidated Damages being the sole and exclusive remedy of the OWNER" After the words "shall be the essence of the contract" please add the following "with Liquidated Damages being the sole and exclusive remedy of the OWNER"	Bidder's proposal Not accepted. Bidder to follow issued RFQ Document.
2	10 of SCC	Price Reduction Schedule		Please replace PRS with Liquidated Damages	Bidder's proposal Not accepted. Bidder to follow issued RFQ Document.
3	SCC - Ann 1 to SCC				
	1.2	Terms of Payment	Foreign Bidder	Since the equipment are highly customized and have many bought out components, we request for the following payment terms: 1. 10% advance payment against the submission of the order acknowledgement and equivalent advance payment bond. 2. 15% against submission of Key Vendor Data 3. 15% against ordering of main material: 4. 20% against receipt of main material: 5. 10% against run test at Vendor works 6. 20% against delivery on FOB basis 7. 5% against commissioning however if commissioning is delayed for reasons not attributable to the Vendor, then this milestone shall be released not later than 6 months from the date of delivery. 8. 5% against successful site PGTR however if this activity is delayed for reasons not attributable to the Vendor, then this milestone shall be released not later than 8 months from the date of delivery.	Bidder's to refer commercial Amendment no -1 to be issued.
4	28.3 of GCC	Termination for convinience		Since the equipment is with bought out components, hence all the cancellation charges and fees with a reasonable margin and overheads has to be reimbursed to the VENDOR. Accordingly request you to change the language in the said sub-clause with the foll In case of termination for convinience by OWNER, the VENDOR shall be reimbursed the cancellation fee basis the cancellation curve as provided in the bid.	Bidder's proposal Not accepted. Bidder to follow issued RFQ Document.
5	38 of GCC	Fall Clause		As the equipment is different than the other projects, hence this claus is not applicable.	Bidder to refer Bid Data sheet .

6	9.7.4	B240-910-80-42-SP-5010_RevB_Job Specification.pdf	Gas Turbine starting system	BIDDER' standard starting system is by hydraulic motor pump - Motor Driven as the same is acceptable in the Scope of supply document B240-910-80-42-SS-5010 in section B - Electrical 1.3 MV induction motor for the electro-hydraulic starting system of GT	Please refer Clause No. 9.7.4 (i) of Job Specification (Rotating Equipment) as per which the Gas-Turbine starting system has to be either of the following: (1). Gas Starting (Expansion Turbine) system. (2). VFD fed electric motor starter. Electro-hydraulic system is not as per RFQ requirements. As such, please offer the starting system in compliance to RFQ requirements.
7	9.8.1	B240-910-80-42-SP-5010_RevB_Job Specification.pdf	(c). Vendor shall design the lube oil consoles from the point of view of easy accessibility, 500 mm free space around and maintainability of the major pieces of equipments such as coolers, pumps, drivers, control valves, filters etc. Vendor to ensure easy personal movement and no criss crossing of piping in the consoles. Vendor shall not consider his standard congested consoles but shall design the layout in spread out manner. The layout shall be furnished for review and approval by the purchaser during detailed	Lube oil module is installed within acoustic enclosure in the baseframe. Due to the compact nature of the components installed within the acoustic enclosure, the space requirement can only be met where possible, and as such, modifications of the standard module are not possible.	Vendor standard proven design, as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided.

8	9.8.1	B240-910-80-42-SP-5010_RevB_Job Specification.pdf	(d). The LO system shall be complete and include oil reservoir, lube oil pumps (main & auxiliary), Emergency Oil Pump (EOP), hydraulic oil pumps (main & auxiliary oil pumps), an overhead emergency lube oil run-down tank suitably sized so as to ensure supply of lube oil to compressor train for complete coast down time and cool off (separate accumulators shall be provided for pump change over), twin filters, air-cooled oil cooler, and all necessary valves, fittings, gauges etc. as required by purchaser's specifications.	Overhead run down tank is not required. DC driven emergency pump is provided to ensure safe coast down and cooling off	Noted. However, alternate arrangement such as Main Pump & DC driven emergency pump provided to ensure safe coast down and cooling off shall be designed and sized to cater to Lube-oil requirements for the complete package. Bidder shall guarantee the functionality of the offered arrangement in lieu of emergency overhead lube oil run down tank.
9		B240-910-80-42-SP-5010_RevB_Job Specification.pdf		For items within enclosure , Bidder standard design shall be accepted.	Please follow RFQ requirements
10	Section I , E	Invitation for BID	Contractual Delivery date	Bidder request if the delivery FOB can be 14 months instead of 13 months for foreign bidder.	SCM Response- Bidder proposal Not accepted. Bidder to follow issued RFQ Document.
				For Compressor related exception's , bidder shall follow previous agreed deviations for executed contract's.	Please note that the bid submission shall be on NO DEVIATION basis as already mentioned clearly in RFQ. However, Deviations (if any) against API standards shall be reviewed during detailed engineering stage (in case of an order). Only machine inherent design related TECHNICALLY INFEASIBLE deviations to API standards will be permitted. All other API related deviations which can be complied with time/cost implication shall not be permitted and bidder shall have to withdraw the same (if raised during detailed engineering) without any time/cost implication to the purchaser As such, Bidder shall comply with the RFQ requirements with only TECHNICALLY INFEASIBLE(as above) deviations.

PROJECT : INSTALLATION OF GTC AT GANDHAR CLIENT : GAIL INDIA LIMITED JOB NO.: B240 SUBJECT: PRE-BID QUERIES AGAINST RFQ. NO. TENDER NO: SM/B240-910-KA-MR-5010/504 BIDDER : BIDDER 4						
DOC. NO. B240-910-80-42-DS-1002 DATASHEET - COMBUSTION GAS TURBINE						
SI No.	Document No.	Clause No.	Descriptions	Vendor Deviation	Reason for Technical Deviation/Technical Justification	EIL/GAIL response
1	B240-910-80-42-DS-1002	Line item #45	Tropicalization Reqd	Tropicalization package is not required for the given weather and hence will not be provided.	Clarification	Please comply with RFQ requirements.
2	B240-910-80-42-DS-1002	Line item #45	API Standard 616, 5th edn.	Compliant with Vendor Standard exceptions which can be provided as a part of bid.	Clarification	Please note that the bid submission shall be on NO DEVIATION basis as already mentioned clearly in RFQ. However, Deviations (if any) against API standards shall be reviewed during detailed engineering stage (in case of an order). Only machine inherent design related TECHNICALLY INFEASIBLE deviations to API standards will be permitted. All other API related deviations which can be complied with time/cost implication shall not be permitted and bidder shall have to withdraw the same (if raised during detailed engineering) without any time/cost implication to the purchaser As such, Bidder shall comply with the RFQ requirements with only TECHNICALLY INFEASIBLE(as above) deviations.
3	B240-910-80-42-DS-1002	Line item #122	Lateral Critical Speeds (Damped): [As per API 616]	The lateral critical speed is not verified during the engine acceptance test. This data is available on the datasheet.	Clarification	Noted. However, the Lateral Critical speeds shall be evaluated or shall have been evaluated (in the past) in the Lateral critical speed study and separation margins w.r.t. MCS shall be established. Documentary proofs would need to be provided during detailed engineering stage (in case of order).
4	B240-910-80-42-DS-1002	Line item #128	Undamped stiffness map reqd.	Please note that this data is not provided at is a Vendor Proprietary data.	Clarification	The data needs to be shared as part of Lateral critical speed study, during detailed engineering stage (in case of order). Generic statements (proprietary data etc.) need to be withdrawn.
5	B240-910-80-42-DS-1002	Line item #143	Weather Protection Required	Weather protection is not required as our onskid HMI and the control panel are suitable for outdoor installations.	Clarification	Follow Instrumentation specification of RFQ for Weather protection of respective Instrumentation items.
6	B240-910-80-42-DS-1002	Line item #158	Starting System: Semi Automatic	We understand that Starting System is required to be Automatic and as such requiremetn of semi automatic is not applicable	Clarification	Please refer Line no. 158 as per which Automatic starting system is envisaged. A two push-button semi-automatic starting system is the minimum specified requirement of RFQ.
7	B240-910-80-42-DS-1002	Line item #168	Regulation, NEMA Class : 'D'	Not applicable to Vendor package as we do not have the governor hardware as such for turbine controls. The governor prgram is the algorithm programmed in the RSLogix.	Clarification	Noted. However, bidder to clarify the basis for governeor response time which needs to be verified during governor response test.
8	B240-910-80-42-DS-1002	Line item #194	Bearing Temperature Devices: As per API 670 (Note-5&6)	Compliant with Vendor Standard exceptions which can be provided as a part of bid.		Please refer SI. No. 2 above.
9	B240-910-80-42-DS-1002	Line item #214	Each journal bearing (tilting pad) shall have RTD's in no less than 50% of the shoes.	Vendor uses RTD to measure the bearing drain temperatures on the journal bearing drain instead of at the the bearing itself.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL..	Noted only for Gas Turbine . Vendor standard proven design, for Gas Turbine as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided.
10	B240-910-80-42-DS-1002	Line item #218	Each Thrust bearing(tilting pad) shall have RTD's in no less than 50% of the active shoes and two in the inactive side shoes.	RTDs are provided only on the active side of thrust bearing as per Vendor proprietary design.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Noted only for Gas Turbine. Vendor standard proven design, for Gas Turbine as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided.
11	B240-910-80-42-DS-1002	Line item #360	INSPECTION AND TESTING	1. The engine is not operated above 100% of its maximum continuous speed. The overspeed is simulated electronically. An mechanical overspeed is not performed to avoid any damage to the engine and prevent an unsafe condition. This is Vendor standard practice followed in all projects 2. Please be informed that the noise test is not performed at Vendor works during package test and shall be carried out at site during comissioning.	Clarification	1. Noted. 2. Please comply with RFQ requirement.
12	B240-910-80-42-DS-1002	Line item #395	Speed-Torque Curve	Speed-Torque curve is not required for Gas Turbine and hence will not be provided.	Clarification	Please comply with RFQ requirement.

13	B240-910-80-42-DS-1002	Line item #424	The make and model of bearing temperature monitoring system, vibration and axial displacement monitoring system shall be as per Instrumentation specification forming part of inquiry document.	The make and model of bearings, vibration, and axial displacement cannot be changed per customer's requirement. Vendor uses well-qualified suppliers for instrumentations and devices on its packages, which are accepted globally.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	All items to be supplied shall have proven references as per RFQ.
14	B240-910-80-42-DS-1002	Line item #425	The location of bearing temperature monitoring system, vibration and axial displacement monitoring system shall be as per Instrumentation specification forming part of inquiry document.	The location of bearing temperature, vibration and axial displacement are pre-engineered by Vendor and it cannot be changed per customer's requirement.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Noted only for Gas Turbine . Vendor standard proven design, for Gas Turbine as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided.
B240-910-80-42-DS-1004 DATASHEET - CENTRIFUGAL COMPRESSOR (CONTROLS & INSTRUMENTATION SYSTEM)						
15	B240-910-80-42-DS-1004	ALL		Vendor has retained the requirements of this datasheet for reference but alarm/indication/ location shall be based on Vendor standard control system and specific requirements for the given application will be taken during detailed engineering to the extent feasible for integration with Vendor standard control proven system.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Please note that minimum functional requirements as indicated in the datasheet shall be complied with for the Centrifugal Compressor & associated systems. For Gas turbine & it's accessories, vendor standard proven design, as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided.
16	B240-910-80-42-DS-1004	Line Item #7	LGB: Local Gage Board: By Vendor	Please be informed that the Local guage board is not provided on Vendor skid, however the local HMI display provides all the parameters of the equipment.	Clarification. Local Guage board is old design concept. Local HMI On the package will provide the required parameters which were traditionally covered through gauge board.	Local HMI (suitable for the area classification) in place of LGB can be accepted, provided it is of vendor's standard proven design, supplied for the GTC packages supplied worldwide. Also refer response to Sno.5 regarding Weather Protection. [Note: For reading out of parameters, buttons need to be pressed to scroll between the readings, whereas in LGB, all the parameters are displayed locally.]
17	B240-910-80-42-DS-1004	Line Item #33	INDICATION LAMPS (STATUS INDICATIONS)	For Vendor's drive skid, the following Status indicators are provided: 1. For local control panel (on package): Fire System Auto (green), Fire System Inhibit (yellow), Fire System Auto/Inhibit (red), Engine Stop (red), Backup system Active/Reset (green), Reserve System (yellow). 2. For UCP (offskid): Horn Silence (amber), Acknowledge (amber), Reset (amber), Lamp Test (amber), Normal Stop (amber), Cooldown (amber), Stopping (red), Alarm Summary (amber), Backup Active (amber), Shutdown Summary (amber), Ready (amber), Starting (amber), Ready to Load (amber), On Load (green), Local/Aux (amber), Start (green), Speed Decrease/Increase (amber). Vendor offered limited additional indication lamps for status indications, which can be discussed during project execution phase.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Refer response at Sno.15 above.
18	B240-910-80-42-DS-1004	Line Item #79	Selector Switch Auto/Remote Manual/Local Manual for the following: - Main L.O. Pump - Standby L.O. Pump - Emergency L.O. Pump (D.C. pump) - Control oil/Hydraulic oil pumps (as applicable) - Ventilation Fan	Vendor has identified risks and responsibilities related to the use of hand-off-auto (HOA) switches. Assuming manual control of a device by way of an HOA switch reduces the control processor's ability to properly sense and control the overall system. Processor-driven safety and equipment-protective actions can fail to function properly, if at all. When an HOA switch is taken out of the "auto" position, processor control is disengaged from the targeted device. The operator of the switch has assumed control of the affected device thereby overriding the control processor. As per recent safety assessments, Vendor has identified HOA switches as safety hazard and accordingly HOA switches are not recommended.	As per recent safety assessments, Vendor has identified HOA switches as safety hazard and accordingly HOA switches are not recommended/provided.	Please comply with RFQ requirement.

19	B240-910-80-42-DS-1004	Line Item #80	Auto/Manual Selector switch for selection of main and standby pump for each auxiliary	Auto/manual selector for AC & DC Lube oil pumps, Ventilation fan motors are not provided.	Considering the integrity and safety of the package, manual switch over is not provided for stand-by or back up equipment. This change over is auto. This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Please comply with RFQ requirement.
20	B240-910-80-42-DS-1004	Line Item #82	PUSH BUTTONS	Vendor provides push buttons (driver skid) for the following commands: Start, Stop, Acknowledge, Reset,lamp test and Emergency Shutdown and does not provide push buttons for auxiliaries start /stop, lube oil pumps.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL. Please note that modification in the vendor standard control system is not possible.	Please comply with RFQ requirement.
21	B240-910-80-42-DS-1004	Line Item #144	Compressor Anti surge controller, If Offered (located in SRR , with LCD in CCR)	Vendor’s standard anti-surge control system is fully integrated in the Turbotronic system and is part of the UCP.	Vendor Standard proven anti-surge control system is fully integrated in the turbine unit control panel (UCP). This integration allows for better interface with the capacity and/or fuel control loops for optimum performance and compressor safety. All unit parameters are available to the station process control system for station optimization based on compressor performance and optimum envelopes. Because the anti-surge control is part of the control processor program, all parameters and status indications are available via a serial link, e.g., transmitters, control parameters, PV, SP, OUTPUT, SM and status variables. Integration of the process control, anti-surge control, and the unit control minimizes interaction complications. A seamless process provides control from a reactive mode to a coordinated mode of surge and process control. With an integrated control system, the anti- surge, process and station control valves can all be used to avoid surge. This results in superior performance through better resolution, faster response (reduced risk of surge), and significantly less noise.	Noted.
22	B240-910-80-42-DS-1004	Line Item #230	Accelerometer for Casing vibration (X & Y)☒	Accelerometer is not required for casing vibrations for Gas Turbine engine as per Vendor's machine monitoring philosophy. Vendor prefer to use displacement sensors for all radial vibration at each bearing.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Vendor's standard proven design , as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided. However, technical & functional requirements as per RFQ shall be complied with.
23	B240-910-80-42-DS-1004	Line Item #239	Lube oil Reservoir purge (N2) flow	This is not provided as per Vendor standards design.	Clarification based on Vendor Standard design	Refer response at Sno.15 above.
24	B240-910-80-42-DS-1004	Line Item #257	Accumulator (lube & control oil) pre-charge gas pressure	There is no hydraulic oil circuit is used in Vendor package, electronic actuators are used. DC powered lube oil pump is used as a back up pump for lube oil circulation. Lube oil accumulator is not required as per Vendor standard design.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Vendor standard proven design, as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided.
25	B240-910-80-42-DS-1004	Line Item #266	Lube Oil Temp.at the outlet of each Journal bearing of GTC package	Lube oil temperature at the bearings outlet is not measured, however the drain temperature of the bearings are monitored by Vendor. This is as per Vendor standard design including all the projects worldwide.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Vendor standard proven design, as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided.
26	B240-910-80-42-DS-1004	Line Item #266	Lube Oil rundown tank-Oil level	DC powered lube oil pump is used as a back up pump for lube oil circulation. Lube oil rundown tank is not required as per Vendor standard design.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Vendor standard proven design, as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided. Also note that the alternate arrangement i.e. Main pump & DC driven emergency pump provided to ensure safe coast down and cooling off shall be designed and sized to cater to Lube-oil requirements for the complete package. Bidder shall guarantee the functionality of the offered arrangement inlieu of emergency overhead lube oil run down tank
27	B240-910-80-42-DS-1004	Line Item #268	Sight flow indicator -Lube Oil circulation lines between filters, coolers to Tank	Please be informed that the sight flow indicators are not provided as per Vendor standard design as Lube Oil System is integrated in the package base frame.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Refer response at Sno. 15 above.

28	B240-910-80-42-DS-1004	Notes:	(7). Journal (Radial) bearings: - For tilting pad bearings, each bearing shall have RTD's in no less than 50% of the shoes. - For sleeve bearings, each bearing shall have two (2) RTD's located at two locations. (8). Thrust bearing: - For tilting pad bearings, each bearing shall have RTD's in no less than 50% of active side & 2 in the active side.	Vendor uses RTD to measure the bearing drain temperatures on the journal bearing drain instead of at the the bearing itself.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL..	Noted only for Gas Turbine. 'Vendor standard proven design, for Gas Turbine as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided.
29	B240-910-80-42-DS-1004	B240-910-80-42-DS-1004	(11). Separate ASC system shall be provided for each compressor stage/section as per the purchaser's specification and P & ID attached elsewhere.	Vendor proposes to use Vendor standard integrated Anti Surge System on this project which is proven and beign supplied on worldwide projects.	Vendor Standard proven anti-surge control system is fully integrated in the turbine unit control panel (UCP). This integration allows for better interface with the capacity and/or fuel control loops for optimum performance and compressor safety. All unit parameters are available to the station process control system for station optimization based on compressor performance and optimum envelopes. Because the anti-surge control is part of the control processor program, all parameters and status indications are available via a serial link, e.g., transmitters, control parameters, PV, SP, OUTPUT, SM and status variables. Integration of the process control, anti-surge control, and the unit control minimizes interaction complications. A seamless process provides control from a reactive mode to a coordinated mode of surge and process control. With an integrated control system, the anti- surge, process and station control valves can all be used to avoid surge. This results in superior performance through better resolution, faster response (reduced risk of surge), and significantly less noise.	Noted. (Duplicate query at Sno.21above)
B240-910-80-42-DS-7 DATASHEET - OIL SYSTEM (Special Purpose)						
30	B240-910-80-42-DS-1007	Line Item #22	Separate Console	Vendor will offer combined/common lube oil system/tank for both driver and driven skids.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Vendor standard proven design, as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided.
31	B240-910-80-42-DS-1007	Line Item #32	Piping & Tubing (All Section)	Vendor will follow Vendor standard Gas Turbine package piping specifications, which are specially designed for Gas Turbine package. This is proven standard package. Vendor pressure piping Manufacturing is in accordance with ASME B31.3 for Process Piping. Standard package piping follows ASME B31.3, which does not require a stamp. Piping is seamless stainless steel Type 316L; piping less than or equal to 2 inches uses schedule 80 pipe and piping greater than 2 inches uses schedule 40. Flanges are in accordance with ANSI B16.5. Pipe fittings are in accordance with ANSI B16.11 and are minimum 3000 psi rated. Pressure and discharge piping manifolds are hydrostatically tested at 1.5 times the maximum allowable working pressure for a minimum of 30 minutes in accordance with ASME Boiler and Pressure Vessel Code, Section VIII. turbine fuel, system, water, and air assist manifolds are leak tested at 780.0 +/- 20.0 psig for a minimum of 10 minutes. Piping support are as per Vendor standard package design.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Vendor standard proven design, as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided.

32	B240-910-80-42-DS-1007	Line Item #33	Material SS304/SS316	Lube oil filter system is SS316; however, the lube oil tank and tank cover are Carbon Steel painted.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Vendor standard proven design, as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided. However expoxy paint coated CS will only be permitted. Also, all items downstream of filters shall be SS300 series stainless steel.
33	B240-910-80-42-DS-1007	Line Item #35	Welding & Special Fabrication Requirements - Liquid Penetrant	Vendor can offer only 20% Radiography on the lube oil system.	Clarification based on Vendor Standard Manufacturing process used on world wide projets	Shall be as per approved QAP.
34	B240-910-80-42-DS-1007	Line Item #69	Reservoir - Material SS 304	Lube oil reservoir being an integral part of the baseplate will be carbon steel. Tank does not come in contact with atmosphere. Interior of the reservoir is coated with Brayco 785 for preservation and protection from corrosion.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Refer response at Sno.32 above.
35	B240-910-80-42-DS-1007	Line Item #82	Oversize Flanged Vent - Lube Oil Tank	Lube oil tank vent is provided. It is a 8" Class 150 RF Flange for customer connection.	Clarification based on Vendor Standard Package design	Noted.
36	B240-910-80-42-DS-1007	Line Item #99	Pump Type	Vendor uses a lube oil system with a Turbine driven main lube oil pump, an AC pre/post lube oil pump and a DC back-up post lube oil pump. The Turbine) driven pump is the main lube oil pump and produces oil flow in proportion to turbine speed (operating from turbine rotation). Once primed, the turbine driven main pump provides sufficient lubrication flow to the entire rotating equipment train for all phases of operation, including “coast down” to a complete stop. The AC motor driven pre/post lube oil pump provides supplemental lube oil flow for: 1. Pre-lubrication of the bearings of the entire train, prior to start 2. Low speed starting lubrication, until the turbine comes to a sufficient speed for the turbine driven main lube oil pump to fully prime. 3. Post lube cooling of the hot turbine bearings, after turbine shutdown. The DC motor driven back-up post lube oil pump provides post lube cooling of the hot turbine bearings, in the event of AC power loss, or AC pre/post pump failure.	Clarification based on Vendor Standard Package design	Please comply with Sl. No. 4.1 of Scope of supply Doc. No. B240-910-80-42-SS-5010.
37	B240-910-80-42-DS-1007	Line Item #113	Rotary Pump Relief Valve by Purchaser/Vendor (P /V)	Rotary pump relief valve is not provided.	Clarification based on Vendor Standard Package design	Please comply with RFQ requirements.
38	B240-910-80-42-DS-1007	Line Item #158	Code: Construction Stamp - Lube Oil Filter	There will be no stamping on the lube oil filter.		Noted.
39	B240-910-80-42-DS-1007	Line Item #184	Lube oil accumulators	There is no hydraulic oil circuit is used in Vendor package, electronic actuators are used. DC powered lube oil pump is used as a back up pump for lube oil circulation. Lube oil accumulator is not required as per Vendor standard design.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	<u>Hydraulic-Oil circuit:</u> Deviation noted. <u>Lube-Oil accumulators:</u> Vendor standard proven design, as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided.
40	B240-910-80-42-DS-1007	Line Item #205	Overhead or Run-down Tank	DC powered lube oil pump is used as a back up pump for lube oil circulation. Lube oil rundown tank is not required as per Vendor standard design.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Refer response at Sno.15 above. Also note that the alternate arrangement such as Main Pump & DC driven emergency pump provided to ensure safe coast down and cooling off shall be designed and sized to cater to Lube-oil requirements for the complete package. Bidder shall guarantee the functionality of the offered arrangement inlieu of emergency overhead lube oil run down tank
41	B240-910-80-42-DS-1007	Line Item #263	INSPECTION & TESTING	Lube oil system testing on Vendor's packages is not conducted separately. It is part of Vendor's standard Gas Turbine package test.	Clarification based on Vendor Standard Manufacturing process / Testing Procedures used on world wide projets	It is understood that the offered LO system is a combined system for both the driver and driven equipment. Accordingly, the tests as mentioned in the datasheet shall be conducted separately.

B240-910-80-42-SP-5010 JOB SPECIFICATION (GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR PACKAGE)

42	B240-910-80-42-SP-5010	8.1 - Page 4	The unit start-up shall be essentially automatic with two button operation along with “Confirm operation Button”.	Vendor's operating philosophy consists of "Start" and "Stop" buttons only, which automatically starting , sequential start-up of gas turbine compressor train and stopping the engine. Two button operation philosophy with “Confirm operation Button” will not be adopted. This is in ine with all our supplies for worldwide applications including the existing installations with GAIL.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Please refer Line no. 158 of DS-1002 as per which Automatic starting system is envisaged. A two push-button semi-automatic starting system is the minimum specified requirement of RFQ.
43	B240-910-80-42-SP-5010	9.3.2 - Page 7	The surge controller shall be installed at a location as indicated in the Instrument Specifications/P&IDs.	Vendor's standard anti-surge control system is fully integrated in the Turbotronic system (UCP). This is Vendor standard system supplied to projects worldwide.	Clarification based on Vendor Standard design	Noted.
44	B240-910-80-42-SP-5010	9.7.1 - Page 8	The Gas Turbine and associated equipment shall conform to API Std. 616, 5th edition	Compliant with Vendor Standard exceptions	Clarification based on Vendor Standard design	Please refer Sl. No. 2 above.
45	B240-910-80-42-SP-5010	9.7.4 - Page 8	(iv). Bidder shall refer the battery-limit conditions of start-up seal gas in Process Datasheet and Compressor datasheet. Any boosting system (if required) to boost the starting gas pressure shall be included by bidder in his scope.	Vendor understands that as per note 14 of Process Data Sheet for Compressor the fuel gas pressure available upstream of Fuel Gas Conditioning skid needs to be considered as 25 kg/cm2g for the determining the requirement for fuel gas booster for operation fo the Gas Turbine across the ambient temperature range of 6 to 47 deg C. Please confirm our understanding	Clarification	The fuel gas supply pressure to be considered as per note-14 upstream of Turbine meter. Note-14 to be followed for fuel gas supply process condition. However, bidder to note that Fuel Gas Boosting system is not envisaged. Bidder shall comply to the B/L conditions of the fuel gas without any booster compressor.
46	B240-910-80-42-SP-5010	9.7.5 - Page 9	(ii). At still higher pressure drop, turbine shall shutdown by 2 out of 3 voting logic.	Please be informed that Vendor uses single Pressure differential transmitter for monitoring the Air inlet filter DP and therefore voting logic is not applied on Turbine Air Inlet (TAI) pressure drop. This is a proven design and used in all Vendor's packages for worldwide applications including exisiting pacakges at GAIL (Gandhar).	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Please comply with RFQ requirements.
47	B240-910-80-42-SP-5010	9.7.5 - Page 9	(vi). Air filtration capacity shall have an overdesign margin of 20% over capacity. Filters shall be sourced from reputed manufacturers. Complete details of filter along with filter manufacturer's catalogues along with list of references shall be reviewed & approved by Purchaser during detailed engineering stage.	TAI filter is pre-engineered and is desinged per Vendor's specifications and standards for each suitable condition/application. Air inlet system design capacity is detemined keeping the provision for pressure drop upto the extent specified by GT supplier and hence additional margin of 20 % is not required. This proven desing inline with worldwide installations icluding the existing GAIL units. details of filter and catalogues will be provided during project for customer's review.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Please comply with RFQ requirements.
48	B240-910-80-42-SP-5010	9.7.6 - Page 9	(i). The exhaust shall be routed to atmosphere through exhaust stack/chimney. The offered Gas Turbine shall mandatorily meet the emission norms/standards (latest in force) of “Central Pollution Control Board (CPCB)” of Government of India and the emission norms/standards of “Gujarat State Pollution Control Board (GPCB)” of Government of Gujarat state, whichever is stringent.	PLease provide the the details of the emission levels applicable for the Gas Turbine at it's exhaust in the referred “Central Pollution Control Board (CPCB)” of Government of India and the emission norms/standards of “Gujarat State Pollution Control Board (GPCB)”	Clarification	This statutory data is to be obtained and complied with, by the bidder.
49	B240-910-80-42-SP-5010	9.8.1 - Page 12	(i) The lube oil system shall conform to API standard 614, 4th edition	Compliant with Vendor Standard exceptions	Clarification based on Vendor Standard design	Please refer Sl. No. 2 above.

50	B240-910-80-42-SP-5010	9.8.1 - Page 12	(iv) The LO system shall be complete and include oil reservoir, lube oil pumps (main & auxiliary), Emergency Oil Pump (EOP), hydraulic oil pumps (main & auxiliary oil pumps), an overhead emergency lube oil run-down tank	Vendor is offering a lube oil system with an engine driven main lube oil pump, an AC pre/post lube oil pump and a DC back-up post lube oil pump. The engine driven pump is the main lube oil pump and produces oil flow in proportion to engine speed (operating from engine rotation). Once primed, the engine driven main pump provides sufficient lubrication flow to the entire rotating equipment train for all phases of operation, including “coast down” to a complete stop. The AC motor driven pre/post lube oil pump provides supplemental lube oil flow for: 1. Pre-lubrication of the bearings of the entire train, prior to start 2. Low speed starting lubrication, until the engine comes to a sufficient speed for the engine driven main lube oil pump to fully prime. 3. Post lube cooling of the hot engine bearings, after engine shutdown. The DC motor driven back-up post lube oil pump provides post lube cooling of the hot engine bearings, in the event of AC power loss, or AC pre/post pump failure and hence an overhead emergency lube oil run-down tank is not required	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Please comply with Sl. No. 4.1 of Scope of supply Doc. No. B240-910-80-42-SS-5010.
51	B240-910-80-42-SP-5010	9.8.1 - Page 12	(v) The material of construction of lube oil reservoir, lube oil supply and return piping, valve internals etc. shall be of Series 300 Stainless Steel.	Lube oil reservoir being an integral part of the baseplate will be carbon steel. Tank does not come in contact with atmosphere. Interior of the reservoir is coated with Brayco 785 for preservation and protection from corrosion. Offered system is Vendor proven proprietary design and is same as provided in previous GAIL projects.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Please refer Sl. No. 32 above.
52	B240-910-80-42-SP-5010	9.8.1 - Page 12	(vii) Reservoirs, pumps, coolers, filters and control valves shall be provided in an assembled console.	Lube oil tank/reservoir, pumps, coolers, filters, and control valves, are part of lube oil system. However, they are located in different location within package limit. Lube oil cooler will be located at customer's desired loction (offskid).	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Noted. All interconnecting piping with the LO system components and to/from the main equipment shall be in bidder's scope.
53	B240-910-80-42-SP-5010	9.8.3 - Page 13	(iii) The oil cooler shall be equipped with temperature-controlled bypass valves and sized for a minimum temperature approach of 10 deg.C to the maximum ambient air temperature.	The temperature control valve will be installed inside the skid with a pre-determined setting based on the engineering inputs during detail engineering.	Clarification based on Vendor Standard design	Noted.
54	B240-910-80-42-SP-5010	9.10 - Page 14	Common Skid and Base-Plate (All Section)	Driver (Gas Turbine) and Driven (Compressor & Gear Box) will be mounted on separate skids which will be bolted together.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Please refer sl. no. 1.6 of Scope of supply (Doc. No. B240-910-80-42-SS0-5010) which is self explanatory. Please comply with RFQ requirements.
55	B240-910-80-42-SP-5010	10.3 - Page 16	Sound Level Test (All Section)	Please be informed that the Sound level test is part of commissioning test at site and performed at Vendor factory during package test. The gas turbine generator is within the A-weighted noise level is 85 dBA at 1-meter distance from the enclosure walls and 1.5 meters from the enclosure base. The estimation is based on free-field installation.	This is a proven design and has been used on all Vendor products and supplied worldwide including the existing installations at GAIL.	Please comply with RFQ requirements.
56	B240-910-80-42-SP-5010	11.0 - Page 16	PARTICIPATION OF PURCHASER'S ENGINEERS DURING ASSEMBLY AND OTHER IMPORTANT ACTIVITIES (All Section)	Extent of participation of Purchaser's engineers to be discussed and mutually agreed during the execution of the project. Some of the details such as clearances/tolernaces are considered as Supplier's proprietary manufacturing information and can not be shared in to-to with Customer. Details for the same to be finalized during order execution.	Clarification based on Vendor Standard Manufacturing process / Testing Procedures used on world wide projects	Noted.

57	B240-910-80-42-SP-5010	14.0 - Page 18	SUPERVISION DURING ERECTION AND COMMISSIONING (All Section)	Vendor doesnot depute engineers from each dicipline duiring installation & comissioning of the Vendor packages. Vendor Field Engineers are mutli-disciplined and trained & developed to for the complete installation & commissioning of the Vendor packages. Kindly advise how the benefit of multi-disciplinary Field Engineers will be passed on to the Supplier as it will reduce the significant amount stand-by time & installation time	Clarification	Requirements w.r.t.. Supervision for Erection, Testing and Commissioning, as specified in the RFQ, shall be complied with, without any deviation. Further please refer commercial section of RFQ.
B240-910-17-44-SP-01 JOB SPECIFICATION FOR FIRE SUPPRESSION SYSTEM (GAS TURBINES ENCLOSURE)						
58	B240-910-17-44-SP-01	ALL	ALL	Fire and gas monitoring and detection are managed by a separate control system that interfaces with the main Turbotronic™ 5 unit control system. It consists of a control unit, a local operating network and a number of sensors of different types that detect the presence of combustible gas, excessive heat, or flame. The detection of combustible gas concentrations above certain established levels generates an alarm or a package shutdown as appropriate. The detection of fire or excessive heat results in the immediate shutdown of the package and activation of the fire suppression system using carbon dioxide as the extinguishing agent. In addition, a separate connection is hardwired from the EQP to the backup shutdown system in the Turbotronic 5 system. This provides additional protection in the unlikely event of malfunction of the control processor.	This is just a description of Vendor Design. This is Vendor standard proven design for all the packages supplied worldwide including the existing installations at GAIL.	Vendor's standard proven design , as has been supplied for the GTC packages supplied worldwide (including the existing installations at GAIL. Or India) needs to be provided. However, technical & functional requirements as per RFQ shall be complied with.
59	B240-910-17-44-SP-01	2.3 - Page 2	CO2 Fire suppression system for the turbine enclosure shall be designed so that it can be activated automatically by receiving a signal from any of the two different type of fire detection instruments located in that area. i.e. UV detectors and thermal detectors.	The CO2 Fire Suppression system will activate when receiving signals from any of the Fire Detectors, Thermal Detectors installed inside the enclosure.	Clarification.	Noted. Please also refer Sl. No. 58 above.
60	B240-910-17-44-SP-01	2.5 - Page 2	A suitable time delay sound and flashing red light alarm shall be provided before the release of CO2, to facilitate escape of the personnel.	The CO2 discharge signal is part of the alarm summary and will be alarmed on the HMI, by the horn and strobe on the enclosure roof, and by an audible alarm in the Auxiliary Control Console. Vendor's CO2 system does not have discharge delay or pre-release alarm, as our enclosures are classified non-occupied. Personnel that enter the enclosure during operational checks need to inhibit the CO2 system at a key-switch outside the enclosure. With inhibit mode any fire will be detected and annunciatees the fire alarm but CO2 will not be released. This allows the personnel to evacuate and normalise the inhibit switch which will immediately result in CO2 release.	This is just a description of Vendor Design. This is Vendor standard proven design for all the packages supplied worldwide including the existing installations at GAIL.	Noted. Please also refer Sl. No. 58 above.
MISCELLANEOUS						

61	II	8	1.3 / 1.4	Experience Criteria	Bidder has noted the requirement of offered compressor model having the experience of similar fluid handling (HC)/flow/head, etc and understand this requirement is to ensure that proposed equipment has the experience of similar duty/application. This is critical as under current project configuration, there is no stand-by unit and hence requirement of field proven unit matching the project requirements will help GAIL in sourcing field proven/reliable equipment. Based on above understanding and using the similar interpretation for Gas Turbine, as per the details mentioned under the clause 1.4 bidder understands that offered Gas Turbine model should have at least 1 unit with 1 year of continuous operation operating in similar site (climate)conditions as the Gas Turbine design/performance consideration differ based on the climatic conditions. Kindly confirm Bidders' understanding for Gas Turbine Model experience.	Please follow RFQ requirements. Bidder is supposed to provide GT correction curves (or duly OEM signed and Stamped alternate technical documents) which can be used to predict the following: 1. Deration w.r.t. off-design conditions. 2. GT output for various ambient conditions.
62	III	5	4.1	One Bid per Bidder	Bidder understands that in addition to submitting the bid for the entire scope. Bidder can act as sub-contractor/vendor to other bidder for supply of their equipment. Kindly confirm Bidders' understanding.	Provision mentioned in BQC.
63	SCC		Annex I	Terms of Payment	Bidder requests kind consideration for below mentioned payment terms as current tender terms of payment are heavily backloaded towards delivery. 10% of Order price upon receipt of Order 10% of Order price on submission of critical engineering documents. 20% of Order price on approval of critical engineering documents. 20% of Order price upon commencement of package assembly or receipt of major components. 35% of Order price upon shipment. 5% of Order price on commissioning provided or 6 months from shipment incase the commissioning is delayed due to the reason not attributable to Bidder.	Bidder to refer commercial Amendment no -1 to be issued.
64	VII	317 of 1280	2.0	Special Instruction to Bidders Clause 2. i), iii) & iv)`	Bidder requests that deviations which are equipment specific or technically infeasible to be implemented or based on vendor standard proven design shall be permitted for submission with bid as it is not possible for submitting to submit the detailed deviations to the specification before the pre-bid meeting and also based on pre-bid replies there could be a need of resolution of more queires/deviations/clarification, etc. Justification/more details for such deviations can be provided during technical bid evaluation process based on as need basis	Please refer Sl. No. 2 above.
65	VII	341 of 1280	2.6	Mandatory Spares Gas Turbine	Bidder understands that spares for Gas Turbine start system including Motor, VFD , Other Auxillaries etc is required only if Electric Start System is proposed by GT Vendor. Kindly confirm.	Starter motor critical spares need to be supplied as part of Mandatory spares. TECHNICAL AMENDMENT WILL BE ISSUED.
66	VII	341 of 1280	5	Lube Oil Pump Spares	Kindly note that the lube oil pump offered are part of the integrated lube oil system supplied by GT vendor and GT vendor recommends only to replace the Pump assembly as whole and mechanical seals/bearing of pump are not recommended to be repaired/repaced and hecne can not be supplies as sapre. Bidder proposes to quote pump assembly with drive motor.	Noted. Bearings & Mechanical Seals for Lube-Oil Pumps stand deleted. TECHNICAL AMENDMENT WILL BE ISSUED.

67	VII	343 of 1280	5	Mandatory Spares (Instrumentation)	Kindly note that Bidder will use the the list as general reference for quoting the mandatory spares and for package items like GT, GT vendor can quote the instrumentation spares based on their design and recommendation as some of the spares mentioned in the list may not be applicable for given design or may not be available as spares. For example : GT vendor doesn't recommend the repair of items like control valve on component instead complete valve is recommended to be replaced.	Mandatory Spares (Instrumentation) attached with the bid package only depicts the philosophy as per P&ID's. Accordingly Bidder to provide spares as per P&ID's.
68	VII	344 of 1280	5	Mandatory Spares (Instrumentation) // Compressor Control System	Kindly note that Bidder is proposing the integrated control system and hence accordingly will quote one spare main PLC in lieu of the items mentioned herein.	Mandatory Spares (Instrumentation) attached with the bid package only depicts the philosophy as per P&ID's. Accordingly Bidder to provide spares as per P&ID's.
69	VII	348 of 1280	2.1	Compressor BkW	Bidder understands that Case 1B mentioned in the compressor datasheet should be considered for calculating the power.	Case-1B is mentioned as Guarantee Case as it is envisaged to be of the highest BkW among Cases-1A, 1B, 1C and 1D. As such, the max. power case in Case-1 shall be considered as the Rated/Guarantee case.
70	VII	348 of 1280	2.3	Gas Turbine Heat Rate/ Power	Kindly advise the site rated temperature which needs to be considered for calculating these values.	Please refer site & utility data attached in the MR.
71	VII	351 of 1280	4.2.5	Gas Turbine Correction curves	GT Vendor can not provide requested correction curves to correct heat rate/power instead we can provide the signed/stamped output of GT vendors' software which is used for calculating the data for site conditions. Kindly accept the same.	Please comply with MR requirements. However, standard GT correction curves (or duly OEM signed and Stamped alternate technical document) is to be submitted by the bidder, which should be sufficient for the following: 1. To estimate the deration w.r.t. off-design conditions. 2. To correlate the GT output for various ambient conditions.
B240-910-16-51-SK-0001: Overall System configuration & interface schematic for Gas Turbine driven Compressor package						
72	B240-910-16-51-SK-0001	All		1. Reference to the overall system configuration & interface, please be informed that Vendor's standard proven proprietary design uses a Control Logix 1756-LX processor in our control systems. The Control Logix control processor provides primary package control. The Control Logix processors, manufactured by Allen-Bradley, are part of a scalable family of "Logix" processors representing the state-of-the-art for industrial process control. The device offers several important advances. The processor mounts in an Allen-Bradley 1756 style rack, which has an integral power supply and can accommodate various communications modules such as ControlNet, Data Highway Plus, Modbus, and Ethernet. Vendor provides RSLogix 5000 Programming. The operating software for the control processor is created using Rockwell Automation's RSLogix 5000 programming environment. RSLogix 5000 supports symbolic programming with structures and arrays and provides for predefined and qualified sub-system software modules. Each software module is a self-described building block and each building block supports a corresponding control system feature. RSLogix 5000 is compliant with the IEC 61131-3 software-programming standard. The ControlLogix processor, together with RSLogix 5000 programming software, provides a solid and flexible platform for Vendor's control systems. Vendor uses only Allen Bradley PLC for all its entire product range. These PLCs have been used on all the units worldwide including	Clarifications based on Vendor Standard Proven design supplied on various worldwide projects and change is not possible	Bidder's proposal Not Acceptable. Bidder to meet all technical specifications of the offered PLC system including redundancy, I/O's etc in line with Job specification Instrumentation, PLC datasheet, standard specification 6-52-0040 & 6-52-0052 attached with the Bid Package. Requirement of PLC based Integrated gas turbine compressor control system is already indicated in clause 2.0 of Instrumentation Job specification attached with the Bid Package Bidder to Refer the same

73	B240-910-16-51-SK-0001	All	`	3. The Flex I/O's for the each sub-systems (Fuel, Lube Oil, Ventilation, Start system etc) are looped separately which later through the respective processor communicates with the main PLC. The Fire & Gas has a independent controller & I/O modules by Eagle Quantum Premier which independently functions for monitoring & actions for F&G system and provides signals to the main PLC. 4. Vendor Standard proven anti-surge control system is fully integrated in the turbine unit control panel (UCP). This integration allows for better interface with the capacity and/or fuel control loops for optimum performance and compressor safety. All unit parameters are available to the station process control system for station optimization based on compressor performance and optimum envelopes. Because the anti-surge control is part of the control processor program, all parameters and status indications are available via a serial link, e.g., transmitters, control parameters, PV, SP, OUTPUT, SM and status variables. Integration of the process control, anti-surge control, and the unit control minimizes interaction complications. A seamless process provides control from a reactive mode to a coordinated mode of surge and process control. With an integrated control system, the anti-surge, process and station control valves can all be used to avoid surge. This results in superior performance through better resolution, faster response (reduced risk of surge), and significantly less noise. 5. Vendor is proposing Rockwell Automation Dynamix 1444 vibration monitoring system, which is integrated with their control system. By integrating the vibration system, the diagnostic information is readily	Clarifications based on Vendor Standard Proven design supplied on various worldwide projects.	
B240-910-16-50-SP-5010: JOB SPECIFICATION ELECTRICAL						
74	B240-910-16-50-SP-5010	5- Page 3	Area Classification & Equipment Selection	Please note below clarification for Gas Turbine Skid. Fire & Gas detection system equipment, main fuel pump, AC pump, DC pump, primary gas solenoid valve, are Ex de rated. All RTD's for the engine will be Ex nA rated. Vendor uses CMP cable glands that are Exd/Exe rated. Installation is done in accordance with cable gland manufacturer's instructions. Electrical equipment installation is done in accordance with IEC 60079-14:2007.	This is Supplier's proven design and has been used on Vendor products and supplied worldwide.	Follow RFQ requirements.
75	B240-910-16-50-SP-5010	6.6 - Page 4	MV MOTOR (All Section)	Motors which are part of Gas Turbine will be in accordance with CENELEC standards for electrical equipment in Zone 2, Group IIA/IIB hazardous locations.	This is Supplier's proven design and has been used on Vendor products and supplied worldwide.	Follow RFQ requirements.
76	B240-910-16-50-SP-5010	6.9 - Page 5	VARIABLE FREQUENCY DRIVE PANEL (All Section)	Variable Frequency Drive will be per Vendor's Engineering Standard. This is a proven design and supplied for all worldwide projects. Please note that VFD Panle are part of Standard Product design and hence it can not be customized based on projects	This is Supplier's proven design and has been used on Vendor products and supplied worldwide.	Follow RFQ requirements.
77	B240-910-16-50-SP-5010	6.10.1 - Page 7	Flameproof control stations (IP-55) for all motors, emergency stop push buttons for motors as required for plant operation and safety etc., shall be provided by the vendor in accordance with standard specification no. 6-51-0006.	Solar has identified risks and responsibilities related to the use of hand-off-auto (HOA) switches. Assuming manual control of a device by way of an HOA switch reduces the control processor's ability to properly sense and control the overall system. Processor-driven safety and equipment-protective actions can fail to function properly, if at all. When an HOA switch is taken out of the "auto" position, processor control is disengaged from the targeted device. The operator of the switch has assumed control of the affected device thereby overriding the control processor.	As per recent safety assessments, Solar has identified HOA switches as safety hazard and accordingly HOA switches are not recommended/provided for motors which are part of GT skid	Follow RFQ requirements.

78	B240-910-16-50-SP-5010	6.11.6 - Page 7	Gas turbine enclosure shall be provided with interior flameproof lighting fixtures wired to a switch mounted outside the enclosure. Flameproof 15A (SPN+E) power receptacles (Plug and socket) shall also be provided. Lighting fixtures shall be LED Type with mechanical protection and other accessories.	1) Fluorescent lighting is provided to illuminate the enclosure interior and is designed per project's classification (Cenelec, Zone 2). Lighting on/off switches are provided on the enclosure exterior. 2) No receptacles are provided.	This is Supplier's proven design and has been used on Vendor products and supplied worldwide.	1) Noted. TECHNICAL AMENDMENT shall be issued. 2) Not Acceptable. Follow RFQ Requirements.
79	B240-910-16-50-SP-5010	6.11.8 - Page 7	Lux level for lighting design shall be as follows; a. Instt and control faces: 300 Lux (Locally mounted on skid) b. Turbine enclosure: 150 Lux.	Only inside of Turbine enclosure is provided with lightings.	This is Supplier's proven design and has been used on Vendor products and supplied worldwide.	Follow RFQ requirements.
80	B240-910-16-50-SP-5010	8 - Page 8	Makes of Electrical Equipment/Component (All Section)	Vendor uses well-qualified suppliers on its packages, which are accepted globally. Vendor cannot change its sub-suppliers per customer's requirement for the Electrical Equipment which are part of Gas Turbine Skid as these equipment are standard products	Clarfication based on Vendor Standard design	Follow RFQ requirements.

SR NO.	RFQ CLAUSE REFERENCE	CLAUSE DESCRIPTION	BIDDERS QUERIES /DEVIATIONS	EIL/GAIL RESPONSE
1	Bid Due Date	23-Oct-19	Bidder requests 2 months extension for the bid due date.	
2	SECTION I- INVITATION FOR BID (IFB) Clause 2 Point E	Contractual delivery Date	Request to provide delivery of 15 (Fifteen) Months on FOB international seaport Port of exit basis as per INCOTERMS 2010 from the date of Fax of Acceptance for Foreign Bidder.	Delivery period shall be as per RFQ document.
3	ANNEXURE-I TO SCC TERMS OF PAYMENT Clause 1.2	Payment Terms	15% of the order value as advance via T/T transfer against equivalent ABG (Advance Bank Guarantee) and upon submission of Contract Performance Bank Guarantee (CPBG) equivalent to 10% of total Order value with a validity till Warranty Period + 90 days. 20% of the order value via T/T transfer against approval of drawings in code 2 against equivalent ABG. 60% of total invoice value will be paid progressively through irrevocable LC after adjustment against PRS, if any, and submission of following documents (i) Invoice in triplicate (ii) Bill of Lading. (iii) Inspection Certificate / Inspection Release Note issued by Purchaser/Purchaser's TPI agency (iv) Packing List (v) Country of Origin 5% Against submission of final documentation as specified in PR.	Bidder is requested to refer Commercial Amendment No 1
4	GENERAL CONDITIONS OF CONTRACT-GOODS Clause 11	Patent Rights, Liability & Compliance of Regulations	Please add:- Buyer agrees to Indemnify Seller Group from and against any and all Claims for bodily injury, illness, or death suffered by any Buyer Group's personnel, and/or for damage to or loss of any property of any Buyer Group member (whether owned, hired, or leased, and including the Products and Parts (after Delivery), the Site, and any facilities or property thereon), arising out of or in connection with the Contract, REGARDLESS OF CAUSE OR ACTION. - Buyer agrees to Indemnify Seller Group from and against any rightful Claims of third parties on account of bodily injury, illness or death, or damage to or loss of property, to the extent resulting directly from the negligence of Buyer Group in connection with the activities performed under this Contract. - In the event the injury or damage to third parties is caused by the joint or concurrent negligence of the parties or their respective Groups, each party shall bear such injury or damage proportionally to its Group's negligence. For the avoidance of doubt, no members of either party's Group shall be considered third parties and, for purposes of Seller's indemnity obligation in Article 16.2(i), no part of the Site or any property or facilities thereon shall be considered as third party property, and the Site owner and its partners, affiliates and contractors/subcontractors shall not be considered third parties. The reciprocal	Bidder's proposal not acceptable. Bidder is requested to follow RFQ document.
5	GENERAL CONDITIONS OF CONTRACT-GOODS Clause 20 Page 14 para 2	Guarantee	Please add: Notwithstanding the foregoing, all warranties under this agreement shall terminate 12 months after the end of Defect liability period	Bidder's proposal not acceptable. Bidder is requested to follow RFQ document.
6	GENERAL CONDITIONS OF CONTRACT-GOODS Clause 41	Limitation of Liability	Please add: All liabilities under this Contract shall terminate upon expiration of the applicable Guarantee / Warranty Period as or any agreed extension thereof.	Bidder's proposal not acceptable. Bidder is requested to follow RFQ document.
7	Training	30 Man Weeks requirement	Cost of class room training is dependent on the time the trainer has to spend and not on the number of trainees. Cost of Training remains same for a minimum batch size of 5-7 persons going upto 12-15 persons. Cost of Training changes above 15 persons as more trainers are required. Hence, please specify the minimum days of training that would be required. In bidder's experience minimum days are 5 days. Please also note that in 2 weeks, 10 days of training will be provided.	Bidder's proposal not acceptable. Bidder is requested to follow RFQ document.

Pre bid Commercial Deviations/Clarifications

Tender No.: SM/B240-910-KA-MR-5010/504 dated 24.09.2019

Client: GAIL (India) Limited

Project: GTC for GAIL Gandhar

Sl. No	RFQ Reference	Page No. (Out of 1280)	Specification Description	Clarification /Comments/ Deviations	EIL/GAIL Reply
1	Cover Page	1	"PMC services for Installation of GTC at GAIL Gandhar"	Since PMC services are in in bidder scope of work, we understand that title at cover page would be corrected accordingly.	Shall be read as GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR PACKAGE
2	IFB, 1.E	8	Contractual Delivery	We request to kindly accept delivery period of 16 months on FOT dispatch point for Indian Bidder. Further, delivery will subject to receipt of PO and PR within 14 days from receipt of LOA/FOA, drawings/documents to be commented/ approved within 7 working days of submission, inspection & dispatch clearance within seven days of intimation.	Bidder's proposal not acceptable. Bidder to follow conditions of Tender document.
3	IFB, 1.I	9	Bid due date & Time	As BHEL would be sourcing Gas Turbine from potential Gas Turbine vendor. BHEL is required to finalize Gas Turbine vendor before bid submission. Due to availability of limited number of gas turbine vendor, we would require two months for bid submission from the date of pre bid replies/ amendment (if any). We request to kindly provide minimum bid due date extension by 2 months.	Not acceptable
4	Bid evaluation Criteria	19	Authentication of documents- Technical criteria of BEC	Supporting Documents, issued/signed by M/s EIL or M/s GAIL will not be certified by TPI. Also, we request to kindly add "Certification Engineer International Ltd" as TPIA for verification and certification of documents pertaining to Technical Bid.	Bidder's proposal not acceptable. Bidder to follow conditions of Tender document.

5	Bid evaluation Criteria	19	Authentication of documents- Financial criteria of BEC	Annual Financial statements or part of Annual Report, available on public domain, will not be duly certified/ attested by Notary Public.	Not acceptable
6	Bid evaluation Criteria, "D"	20	Evaluation Methodology	Bidder to be allowed to quote their per diem rate for supervision of erection and commissioning and further request you to consider per diem rate supervision charges quoted by bidder for bid evaluation.	Not acceptable
7	Bid evaluation Criteria, "D"	21	Evaluation Methodology	As per tender, there is no loading for Port Handling and clearance charges at Mumbai port for foreign bidders. We request to kindly consider the cost incurred by M/s GAIL towards Port handling and clearance charges for bid evaluation of foreign bidders so as to provide parity to Indian bidders.	Evaluation methodology shall be as per Tender Document
8	ITB, 2,7	41	Power of Attorney	Power of Attorney issued by competent person as per our Company policy, having "Company Seal" in presence of Director, shall be submitted as valid Power of Attorney.	Refer Instructions to Bidders
9	ITB, 7	43	GCC	GCC Rev0:May'04 will be applicable for this project as available on https://gailtenders.in/Gailtenders/gccs.asp	Noted
10	ITB, 12. C	48	Bid price	Please confirm that Essentiality Certificate along with required documents for project rate of custom duty shall be provided within 4 months of date of Order for import of Raw material or component by Indian Bidder.	As per Tender Document
11	ITB,13.1.4	50	New taxes & duties	Any new taxes & duties imposed by the State/Central GOI beyond the Contractual delivery period shall be to GAIL account and shall be reimbursed to Supplier, in case GAIL is entitled to input tax credit on new taxes & duties.	Shall be as per RFQ document

12	ITB, 14.3	52	Bid currency	As per clause 14.3 bidder is allowed to quote in more than one currency, however there is no such provision in price schedule.	Bidder to refer revised Price Schedule issued in Commercial Amendment No 1.
13	ITB, 20	56	Mode of Payment	We request to kindly provide irrevocable L/C to Indian Bidder also. In case of direct payments, all payments to be released within 30 days of invoice submission. In case of delay in payment, interest prevailing @SBI MCLR shall be payable to Supplier.	Shall be as per provision of Tender document.
14	ITB.31	61	Conversion to single currency for bid evaluation	We understand that forward rate applicable on expected date of delivery as available on M/s Bloomberg portal shall be considered for evaluation of bids. We are unable to locate forward cover rate on M/s Bloomberg. Kindly provide us the link to access forward rates at M/s Bloomberg.	Shall be provided after Price Bid opening.
15	ITB, 38	64	Contract Performance Security/ Security Deposit	We propose to submit Contract performance security 30 days before the schedule dispatch date. Format of CPBG shall be mutually discuss after receive of order. Bank comment on CPBG format shall be submitted for GAIL approval during the execution.	Format of Contract Performance Security shall be as per the Format enclosed in Tender Document.
16	SCC, 1.1	185	Effective date	We request to kindly change the effective date to the "date of release of Advance payment".	Not acceptable.

17	Annexure-1 to SCC		Payment Terms	We request you to accept following payment terms. 1. 10% of total order price as advance payment along with LOA/FOA. 2. 10% of total order price, against approval of drawings, wherever required, (identified in PO/ PR or identified during kick off meeting, if not defined in PO/PR) at least in Code-2 and against submission of ABG of equivalent amount valid till scheduled delivery date. 3. 10% of total order price against identification of raw materials at Supplier's works (Castings/forgings for Compressor casings and compressor rotors/ shaft) and against submission of ABG of equivalent amount valid till scheduled delivery date. 4. 60% of total order price along with 100% GST, against dispatch documents on pro rata basis thru irrevocable Letter of credit, opened 30 days prior to schedule date. 5. 5% of total order price against receipt of material at site on prorated basis. 6. 5% of total order price on receipt of Final/As built Drawings/Documents/Data/Manual in requisite number of copies/sets/CDs as per VDR specified in Purchase Requisition.	Bidder is requested to refer Commercial Amendment No 1.
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19	Price schedule	302	Preamble to price schedule, Note 11	As per Bid Evaluation Criteria Bid are being evaluated based on evaluation methodology, clause "D". However, as per price schedule, evaluation is being done on bottom line basis, where Indian bidder is asked to quote for landing cost at site and Foreign bidder is asked to quote CFR [Mumbai port] Hence, this note may be deleted or corrected accordingly.	Shall be as per Tender Document.
20	Price Schedule	303	Form SP-1A	There is no provision of quoting price in dual currency, in present price schedule for Indian Bidder. Same may please be provided.	Bidder to refer revised Price Schedule issued in Commercial Amendment No 1.
21	Price Schedule	305	Form SP-2, Note 3	It is requested to keep the price validity of 2 year O&M spares upto the validity of original bid.	Not acceptable.
22	Price Schedule	305	Form SP-2, Note 5	Payment terms for 2 year O&M spares shall be as that of Mandatory spares.	Not acceptable.