OIL INDIA LIMITED

(A Government of India Enterprise)
P.O. Duliajan – 786602, Assam, India
Website: www.oil-india.com

Corrigendum No. 2 to IFB No. CPI9725P19

Engineering, Fabrication and Supply of Modular Instrumentation Packages respectively for OCS at Nadua and GGS at East Khagorijan in Dibrugarh district, Assam

1. This Corrigendum is issued to notify the following:

a) In view of queries received from bidders in matter corresponding to technical SOW, the final OIL's responses to the queries are generated. All the bidders are requested to refer to **Annexure- I** attached herewith.

b) Ambient air quality monitoring system specification sheet is attached herewith as **Attachment – 1**.

c) PTZ camera specification sheet is attached herewith as **Attachment – 2**.

d) Revised Price Bid format/SOR is attached herewith as **Attachment – 3.**

e) Revised TOR is attached herewith as **Attachment – 4.**

f) Revised SCC is attached herewith as **Attachment – 5.**

g) Revised BOQ of instrument package for GGS at East Khagorijan and OCS at Nadua are uploaded separately under "Notes and Attachment" tab in e-Tender portal.

h) Revised Volume-II Technical Bid Document is uploaded under "Technical attachment" tab in e-Tender portal.

2. Extension of the Bid Closing/Technical Bid Opening date as under:-

i) Bid Closing Date & Time **:** 04.12.2018, 11:00 hrs. IST.

ii) Technical Bid Opening Date & Time **:** 04.12.2018, 14:00 hrs. IST.

3. All other terms and conditions of the tender remain unaltered.

4. All the prospective bidders are requested to regularly visit OIL's website: www.oil-india.com and e-procurement portal https://etender.srm.oilindia.in/irj/portal for further announcements/latest information related to this tender.

5. Bidder to submit this Corrigendum No. 02 along with **Annexure – I and Attachments 1-5** duly signed & stamped in all pages as token of acceptance and shall upload this document in the un-priced folder of the e-bid**.**

Annexure – I

SUMMARY OF CONSULTANT/OIL's RESPONSE TO PRE-BID QUERIES

SL No	RFQ Section	Ref. Clause	Existing Clause / Vendor Query	Modified Clause / OIL / Consultant Response
1.	VOLUME I: COMMERICAL PART III SECTION - 2 SCC - Page 135		Schedule of Rates- Bidder understands that Bidder needs to quote on Lumpsum basis based on SOR Format provided in NIT Document of Tender on Pg 135. Bidder requests OIL to confirm the same.	Bidder shall quote on lumpsum in SCHEDULE OF RATES/PRICES (SOR/P) FOR INSTRUMENTATION PACKAGE.
2.	Technical -1- General	General	Bidder understands quantity of containers shall sized based on details provided in the tender or Bidder requests OIL to provide the actual quantity of containers.	Bidder to note that minimum quantity of containers can be 2 Nos. for control room and exact requirement shall be decided based on bidder's Engineering layout/ requirements. This is a lumpsum contract. Quantity mentioned in SOR is tentative. Bidders have to estimate required and quote accordingly.
3.	Section-I VOLUME-II & VOLUME I: COMMERICAL PART III SECTION - 2 SCC - Page 10-11, 14 & 26 and 90	2.1, 2.34 & 12	One clause states "TPIA should be done by the approved agency of OIL at suppliers cost in presence of OIL representative" whereas other clause states "Consultant will arrange Third Party Inspection wherever necessary."- Bidder understands that Third Party Inspections as required shall be arranged by Consultant and all charges for the same shall be borne by the consultant as per Special Conditions of Contract. Bidder requests OIL to confirm the same.	Confirmed. Bidder understanding is correct
4.	Section-I VOLUME-II - Page 11 & 26	2.1	Design, Engineering, Manufacturing, Assembling, Supply, Installation, Testing & Commissioning of Control System. Online integrated advanced communication based control system shall be assembled and wired up in a containerized control room.	Bidder to note that ESD F&G System shall be TMR/QMR based

SL No	RFQ Section	Ref. Clause	Existing Clause / Vendor Query	Modified Clause / OIL / Consultant Response
			Dedicated Triple Modular Redundancy (TMR) PLC based Safety Instrumentation System (SIS) shall be provided with dedicated HMI and mimic panel for safe automatic operation and control as per IEC61508 & IEC61511 standards.- Bidder requests OIL to note that the terms "TMR/ QMR" are OEM specific terms. Thus, bidder requests customer to provide the reply against query no. 5.	
5.	Section-I VOLUME-II - Page 11 to 12 & 26	2.1 & 2.2	One Clause states requirement of TMR architecture for PLC and other clause states requirement of SIL 2 PLC. Also, System architecture states SIL 2 rated system. Bidder understands the requirement is of SIL 2 configuration. Thus, Bidder requests OIL to clarify the exact requirement	Bidder shall provide ESD F&G system as SIL 3 rated configuration with TMR/QMR based.
6.	Section-I VOLUME-II - Page 12 & 27	2.11	Supply and Installation of Clean Agent System for control room. Clean agent shall be Novec 1230- Bidder understands the Clean agent System shall be considered for the Container where the Control Room is envisaged. Bidder requests OIL to confirm the same.	Bidder understanding is correct.
7.	Section-I VOLUME-II - Page 12 & 27	2.11	Supply and Installation of Clean Agent System for control room. Clean agent shall be Novec 1230- Bidder understands the shed for Clean Agent System Cylinders shall be provided by OIL. Bidder requests OIL to confirm	Bidder understanding is incorrect. Bidder shall provide Clean Agent shed.
8.	Section-I VOLUME-II - Page 12 & 27	2.11	Clean agent shall be Novec 1230- Bidder requests OIL to note that the term "Novec 1230" is OEM specific term. Thus, Bidder requests OIL to mention the requirement of Fire Suppression as per NFPA 2001 or latest	Bidder to note that Fire Suppression shall be as per NFPA 2001 or latest guidelines and chemical composition of FK-5-1-12 or equivalent

SL No	RFQ Section	Ref. Clause	Existing Clause / Vendor Query	Modified Clause / OIL / Consultant Response
			guidelines which states the chemical composition of FK-5-1-12 for gas based suppression.	
9.	Section-I VOLUME-II - Page 13 & 28	2.17	Clause mentions requirement of "Radio transmission, Antenna fitted in communication tower (communication tower shall be installed in concrete platform provided in free ground area), Radio signal converter and interconnecting cables"- Bidder requests OIL to provide specifications for the mentioned requirement. Details shall include frequency of operation, Licensed/ free band, confirmation of Location for which radio link is envisaged, size of band, tower details etc.	Bidder to note that only radio transmission provision shall be made available in Control System. Antenna, communication tower, radio signal converter and interconnecting cables shall be excluded from MPC-10 bidder's scope
10.	Section-I VOLUME-II - Page 13 & 28	2.17	Clause mentions requirement of "Radio transmission, Antenna fitted in communication tower (communication tower shall be installed in concrete platform provided in free ground area), Radio signal converter and interconnecting cables"- Bidder requests OIL to confirm the radio link is to be provided for free band or licensed band. Bidder requests OIL to note that in case of Licensed band all WPC licensing and formalities shall be done by OIL. Necessary Liasoning for the same shall be in OIL scope. Bidder requests Purchaser to confirm that Line of Sight is available between the Control Room and envisaged location for radio communication. Please note the same is must for establishment of Link for Radio System	Bidder to note that only radio transmission provision shall be made available in Control System. Antenna, communication tower, radio signal converter and interconnecting cables shall be excluded from MPC-10 bidder's scope

SL No	RFQ Section	Ref. Clause	Existing Clause / Vendor Query	Modified Clause / OIL / Consultant Response
			Bidder requests OIL to confirm whether Radio Connectivity shall be Point to Point/ Point to multipoint.	
11.	Section-I VOLUME-II - Page 13 & 28	2.17	Clause mentions requirement of "Radio transmission, Antenna fitted in communication tower (communication tower shall be installed in concrete platform provided in free ground area), Radio signal converter and interconnecting cables"- Bidder understands all required permits for Constructing a Tower for Establishment of Radio Link shall be by OIL.	Bidder understanding is correct
12.	Section-I VOLUME-II - Page 13 & 28	2.17	Clause mentions requirement of "Radio transmission, Antenna fitted in communication tower (communication tower shall be installed in concrete platform provided in free ground area), Radio signal converter and interconnecting cables"- Bidder understands that the mentioned radio tower mentioned under clause 2.17, we understand that the piling along with civil foundation will be done by OIL. We also recommend excluding the construction of mentioned tower from bidders' scope as this requires altogether different competency.	Bidder understanding is correct. Piling along with civil foundation and construction of communication tower excluded from bidder's scope
13.	Section-I VOLUME-II - Page 13 & 28	2.19	Supply, installation, testing and commissioning of Tank Instruments as per typical instrument list breakup- Bidder understands the required manholes, matching flanges and spool pieces, isolation valves shall be provided by OIL for mounting instruments on the tank.	Bidder understanding is correct. This is a lump sump contract. Quantity mentioned in SOR is tentative. Bidders have to estimate required and quote accordingly.

SL No	RFQ Section	Ref. Clause	Existing Clause / Vendor Query	Modified Clause / OIL / Consultant Response
14.	Section-I VOLUME-II - Page 15 & 31	4.19	Installation of Loose Supplied Third Party Panels in Control Room (LP Gas Compressor Control Panel, ETP Control Panel, Burner Management System A and B) Panels dimensions shall be 1200mm(L) x 2200mm(H) x 600mm(D). Bidder requests OIL to confirm the no. of Panels which need to be mounted in the Control Room.	Bidder to note that required details are indicated in clause 4.20
15.	Section-I VOLUME-II - Page 16 & 31	4.21	Supply, Installation, Testing & Commissioning of Ambient Air Quality Monitoring System. AAQMS shall consist of CO & CO2 analyser, NO, NO2 & NOx analyser, Suspended particulate measurement analyser, PC based data logger, calibrators, calibration cylinders and zero gas generators. Gas Filter Correlation principle. 15" LED Display shall be provided. Bidder requests OIL to provide specification for AAQMS system as bidder cannot size the system without proper specifications. Bidder understands that no connectivity of AAQMS system is envisaged with State Pollution Control Board. Bidder requests OIL to confirm.	Bidder to note that required specification is provided as separate attachments to this Corrigendum. Bidder to note that Ambient air quality continuous monitoring including data display in the entrance of the facility. Display unit shall be suitable for parameters visible/readable
16.	Section-I VOLUME-II - Page 16 & 31	4.21	Supply, Installation, Testing & Commissioning of Ambient Air Quality Monitoring System. AAQMS shall consist of CO & CO2 analyser, NO, NO2 & NOx analyser, Suspended particulate measurement analyser, PC based data logger, calibrators, calibration cylinders and zero gas generators. Gas Filter Correlation principle.15" LED Display shall be provided. Bidder requests OIL to note that	Bidder understanding is correct

SL No	RFQ Section	Ref. Clause	Existing Clause / Vendor Query	Modified Clause / OIL / Consultant Response
			incase of any connectivity of the mentioned system with Pollution Control Board, necessary broad band arrangements shall be done by OIL.	
17.	General	General	There is no line item for requirement of structural steel. Bidder requests OIL to note that structural steel shall be required for mounting panels, cable trays etc. Bidder requests OIL to include nominal quantity of steel in Tons for the same.	Bidder has to estimate the structural steel quantity required for mounting their panels. This is a lump sum contract. Quantity mentioned in SOR is tentative. Bidders have to estimate required and quote accordingly.
18.	Section-I VOLUME-II - Page 16 & 31	7	Supply, installation, testing and commissioning of Instrument Tray and Accessories as per MTO. (Refer Item No 12.0)- Bidder understands that Bidder needs to quote for trays against Item no. 12 and not this line item. Bidder requests OIL to Confirm the same.	Bidder shall quote for all line items; This is a lump sum contract. Quantity mentioned in SOR is tentative. Bidders have to estimate required and quote accordingly.
19.	Section-I VOLUME-II - Page 17 & 32	10	Supply, installation, testing and commissioning of 6 Nos. Of outdoor PTZ CCTV Cameras- Bidder requests OIL to provide specifications of CCTV System. Bidder requests OIL to provide location of CCTV Cameras. Bidder understands that all cables are included under line item 11 and no separate cables are to be considered. Bidder requests OIL to confirm.	Bidder to note required specification provided. Bidder to note that location of CCTV will be provided during detail engineering and necessary cable length covered in tender document. Bidder shall refer to ND & EK Schedule of rates (SOR) for all cables. This is a lump sum contract. Quantity mentioned in SOR is tentative. Bidders have to estimate required and quote accordingly.

SL No	RFQ Section	Ref. Clause	Existing Clause / Vendor Query	Modified Clause / OIL / Consultant Response
20.	Section-I VOLUME-II - Page 20 & 36	12	Design, Supply and laying of Cable trays with covers made up of FRP, corrosion resistant and flame retardant 2mm thick heavy duty, straight cable tray with outside rail for outdoor areas. For FRP Material 2mm thickness is not in manufacturing practices of FRP Tray OEMs. Thickness of trays is based on loading and thickness of FRP trays is usually is 3mm and above based on manufacturer. Bidder requests OIL to reconfirm the same. Bidder requests OIL to provide the dimensions of Cover.	Noted. 3mm thickness FRP trays can be considered Bidder shall provide covers to suit width of cable trays/ladders
21.	Section-I VOLUME-II - Page 16 & 31	6	Supply, installation, testing and commissioning of Ex 'd' Junction Box - Aluminium Casting Alloy LM6- The quantity of Junction Box is mentioned and thus, Bidder requests OIL to provide details of No. of Entries for Junction Boxes.	Bidder shall consider 24 Pair cable entries typically for JBs. This is a lump sum contract. Quantity mentioned in SOR is tentative. Bidders have to estimate required and quote accordingly.
22.	Section-I VOLUME-II - Page 13 & 28	2.27	Third Party Integration- Bidder requests details of third party systems to be integrated - No of Systems, type of systems, Protocols available, etc.	Bidder shall refer to System Architecture drawing in tender. Any updates to be taken care during Detail Engineering stage.
23.	Section-I VOLUME-II - Page 13 & 28	2.27	Third Party Integration- Bidder requests OIL to note that Third party systems can be interfaced with supplied systems provided the provision at these systems' end shall be made available by OIL. Bidder requests OIL to confirm the same.	Confirmed. Provisions shall be made available for connectivity with third party assistance.
24.	SECTION – II: SPECIFICATIONS 4.0 INSTRUMENT DESIGN BASIS - Page 100	7.25 & 7.26	Detail SIL (Safety Integrity Level) study based on HAZOP & Risk analysis study results/data shall be carried out to comply IEC61511 & IEC61508 standard requirements- Bidder	Confirmed.

SL No	RFQ Section	Ref. Clause	Existing Clause / Vendor Query	Modified Clause / OIL / Consultant Response
	& 161		understands HAZOP & Risk Analysis study shall be OIL scope. Bidder requests OIL to confirm the same.	
25.	General	General	Bidder requests OIL to confirm how OIL intends to compensate the bidder in case any quantity of supplied items varies or any new item is added based on HAZOP study or Risk Analysis study.	This is a lump sum contract. Quantity mentioned in SOR is tentative. Bidders have to estimate required and quote accordingly.
26.	SECTION – II: SPECIFICATIONS 4.0 INSTRUMENT DESIGN BASIS - Page 101 & 162	7.27 & 7.28	Instrumentation Trench shall be RCC cable trenches in the plant area. Cabling shall not be buried. Cable crossing at roads shall be through rack structure. Bidder understands the Instrument Cable is envisaged to be run in RCC Trenches. These RCC Trenches shall b provided by OIL. Bidder requests OIL to confirm the same.	Bidder to note that no RCC trenches. All cables routed through cable trays/ ladders.
27.	General	General	The specifications have been listed for multiple items (EPABX, intercom, Acoustic detector, VSAT, etc.)- Bidder understands the Bidder needs to supply items as per Schedule of rates and specifications given are generic. Bidder requests OIL to confirm the same.	Bidder shall supply, installation, testing and commissioning as per Schedule of rates (SOR). This is a lump sum contract. Quantity mentioned in SOR is tentative. Bidders have to estimate required and quote accordingly.
28.	General	General	Quantity of Cables/ Trays seen for certain sizes is vey less. Bidder requests OIL to note that supply of minimum order quantity of cables/ trays is 500 m as recommended by OEMs. Bidder requests OIL to equalize the same and revise the BOM to reflect the minimum cable quantity as per Cable / tray manufacturers.	Bidder to note that quantities of cables/trays are based on preliminary engineering. Actual quantity shall be as per detail engineering. This is a lump sum contract. Quantity mentioned in SOR is tentative. Bidders have to estimate required and quote accordingly.
29.	General	General	SOR items especially for cables, trays, earthing, other engineered items which are quantified,	This is a lump sum contract. Quantity mentioned in SOR is tentative. Bidders have to estimate required and

SL No	RFQ Section	Ref. Clause	Existing Clause / Vendor Query	Modified Clause / OIL / Consultant Response
			whether Bidder should treat them as "Quantity to Order" or "Quantity to be Paid" by the Purchaser.	quote accordingly.
30.	Section-I VOLUME-II - Page 13 & 28	2.20	Supply and installation of instrument earth pit for clean grounding system. Bidder shall provide Chemical treated earth rod for earthing. Bidder requests OIL to provide the quantity of Earth pit and its locations.	Bidder to note that 2 earth pits (1 No. for IS and 1No. NON IS) and location shall be close to the control room.
31.	General	General	Bidder requests OIL to confirm whether Bidder needs to provide any Surge Protection Devices. If yes, Bidder requests OIL to provide the Quantities/ basis of the same.	Bidder to note that surge protection devices not required
32.	Technical part 3 SECTION – III: ANNEXURE	General	SCHEDULE OF RATES & SCOPE OF SUPPLY- Bidder understands the mentioned documents are redundant to each other and the master document shall be Schedule of Rates and no cognizance needs to be given to Scope of Supply document. Bidder requests OIL to confirm the same.	Bidder to note that Schedule of rates and Scope of Supply (Terms of Reference) both are same. This is a lump sum contract. Quantity mentioned in SOR is tentative. Bidders have to estimate required and quote accordingly.
33.	Technical part 3 SECTION – III: ANNEXURE – Page 49 & 75	11 & 12	SCHEDULE OF RATES - Bidder requests OIL to clarify whether the mentioned document is given as the Billing document for the purpose of execution. Bidder requests OIL to confirm the same.	SCHEDULE OF RATES referred in Technical part 3 is not a commercial billing document.
34.	Technical Part 2 SECTION – III: ANNEXURE	General	Control Room Layout- AC - Bidder understands that Acs are to be considered under line item 2.14 and the same shall be for Control Room housed in the container as per SECTION – III: ANNEXURE 8 of Technical Document. Bidder requests OIL to confirm the same.	Confirmed
35.	MPC10_Volume-I TOR - Instrumentation - Attachment -11 Page 6,	General	Network/Ethernet Switches - Specifications not available	Bidder to consider standard network switches

SL No	RFQ Section	Ref. Clause	Existing Clause / Vendor Query	Modified Clause / OIL / Consultant Response
	16			
36.	MPC10_Volume-I TOR - Instrumentation - Attachment -11 – Page 10,23	General	Supply, installation, testing and commissioning of Ex 'd' Junction Box - Aluminium Casting Alloy LM6 - Specifications and Sizes not available.	Bidder shall consider junction boxes with number of terminals and entries suitable for 24 pair cable. This is a lump sum contract. Quantity mentioned in SOR is tentative. Bidders have to estimate required and quote accordingly.
37.	MPC10_Volume-I TOR - Instrumentation - Attachment -11 Page 10,24	General	Supply, installation, testing and commissioning of Nickel plated brass Double compression type Cable Glands (M20 - 626 Nos , M25 - 52 Nos., M32- 246 Nos., M40 - 36, M50 - 170) Cable glands Explosion proof certified to NEMA 7 - As per the document "Technical Part 2", Pg No. 70: For Ex d junction boxes cable entries shall have NPT threads; Where this is not possible certified 316 SS adaptor shall be fitted. With respect to the line item, there is no requirement of NPT Glands. Where is the requirement of NPT Glands covered in?	Bidder shall consider suitable NPT glands for Ex d Junction boxes. This is a lump sum contract. Quantity mentioned in SOR is tentative. Bidders have to estimate required and quote accordingly.
38.	MPC10_Volume-I TOR - Instrumentation - Attachment -11 Page 10,24	General	FIRE AND GAS DETECTORS/DEVICES - Specifications not available.	Bidder shall refer to corrigendum-1 for specification
39.	MPC10_Volume-I TOR - Instrumentation - Attachment -11 Page 11,24	General	TELECOM EQUIPMENT AND SYSTEM & ITS ACCESSORIES - Specifications not available.	Bidder shall refer to corrigendum-1 for specification
40.	MPC10_Volume-I TOR - Instrumentation - Attachment -11 Page 12-14,25-27	General	INSTRUMENT CABLES - For the cable specifications, it is specified as "Design, Supply and laying of 250V grade," while the last line mentions as "Voltage Grade - 660V/1100V"	For instrument signal cables voltage grade shall be 250V. For control cables voltage grade shall be 660/1100V

SL No	RFQ Section	Ref. Clause	Existing Clause / Vendor Query	Modified Clause / OIL / Consultant Response
41.	MPC10_Volume-I TOR - Instrumentation - Attachment -11 Page 6	General	GPS based 10 Time Sync ports - Specifications not available. Is the customer here asking for Ethernet switch with GPS receiver?	Bidder shall provide time synchronization port for synchronizing a slave system to master system for packet exchanges where each exchange is a pair of request and reply.
42.	MPC10_Volume-I TOR - Instrumentation - Attachment -11 Page 6,16	General	Supply, Installation, Testing & Commissioning of Temperature Element with Indicator - Should the general specifications mentioned in the document "Technical Part 2" Pg.15 be considered?	Data sheets provided in corrigendum-1
43.	Technical Part 1 - Page 11/249 Page 26/249	2.0	TMR PLC system shall be Provided. - Please note that TMR is an architecture of one specific vendor and SIS (safety PLC)is also a brand name of a specific vendor with QMR architecture We are having QMR architecture and our Brand Name of Safety PLC is Pro Safe RS, which is EIL approved and satisfactory working in various Oil and Gas Industries in India and Global. Please change the same as TMR/QMR	Noted. Please refer corrigendum.
44.	Technical Part 1 - Page 12/249	2.2	SIL-2 rated ESD/F&G system - Please accept SIL-3 system for ESD/F&G which is better system compared to SIL-2.	Accepted
45.	Technical Part 1 Page - 60/249	6.7	Relative Humidity required is 99% - Please consider RH of 95%	Accepted
46.	Technical Part 1 - Page 61/249	6.8	All relays and switches shall be hermetically sealed - Relays/switches shall be in safe area, hence hermetic sealing relays are not required. Please confirm if we can quote Normal relays.	For safe area switches and relays, normal relays are acceptable.
47.	Technical Part 1 Page -	7.0 Pg 18/61	DCS shall be open type and shall be compatible with any third-party integration -	Accepted

SL No	RFQ Section	Ref. Clause	Existing Clause / Vendor Query	Modified Clause / OIL / Consultant Response
	62/249		DCS is open type. However, integration with any third party shall be checked during detail engineering	
48.	Technical Part 1	General	SIL-2 rated ESD/F&G system - Please confirm if we must consider any SIL-3 Safety relays for ESD & F & G Systems	ESD and F&G PLC shall be SIL 3 rated
49.	Technical Part 1	General	SIL-2 rated ESD/F&G system - We presume that all barriers shall be SIL-2. Please confirm.	Confirmed
50.	Technical Part 1	General	UPS monitoring through DCS shall be provided - Please clarify the same , what all data to be required in DCS	Consider minimum 6 parameters.
51.	Technical Part 1	General	Flow Computation in DCS for Fiscal Measurement Instruments - As we understand this feature is only for monitoring. Let us know either you need AGA and API methodology in DCS	Follow API Methodology
52.	Technical Part 1 Page - 14/249	2.29	SCADA Integration - Provision to Connect the Control System to SCADA will be limited the Providing OPC Connection Facility. However please confirm if we must connect any FO Cables, Accessories and other hardware to meet the interface requirements. Also note that any modifications at the SCADA end shall be by respective OEM.	Bidder to note that only radio transmission provision shall be made available in Control System.
53.	Technical Part 1 Page - 4/109	General	IO Summary - As F&G IOs are Non-IS we feel that barriers are not required. Please confirm.	Bidder understanding is correct
54.	General	General	Scope of coverage of insurance of third party free issued system?	Tender Prevails Refer Clause 39.

SL No	RFQ Section	Ref. Clause	Existing Clause / Vendor Query	Modified Clause / OIL / Consultant Response
55.	General	General	LD applicable is inclusive of GST or not?	Bidder to note that LD is inclusive of GST and LD amount will be calculated on order value and applicable GST.
56.	General	General	ABG validity period should be capped and statement "such extended period as may be required" to be removed from the page 137 of 192 of the NIT document.	ABG will be retained for 15 months
57	VOL-I COMMERCIAL PART I	Clause – 54, Liquidated Damages	Bidder requests OIL to review the clause, bidder request following amendments: (a) The maximum cap of LD is requested as 5% instead of 7.5%. Many of the contemporary PSU Oil companies are accepting this clause as max 5%. (b) Bidder also requests Purchaser to consider LD on the 'Undelivered Portion' and not on the total contract value due to the nature of contract.	LD: 0.5% of the total order price as stipulated in order, per week for such delay or part thereof as mentioned in SOS/TOR, subject to maximum of 7.5%. The Company may without prejudice to any other method of recovery, deduct the amount of such liquidated damages from any amount due to the Contractor. Note: Normally, a Packaged Item is considered as Unit and the supply and delivery should be in totality as Unit and the LD on the delayed period will be levied considering the value of the Unit with GST. However, in a situation, if a part of the Unit could not be supplied with the packaged item, then the value for purpose of LD will be the declared value of the part item which is stated in the Consignment Note or the value taken for Transit Insurance. Both the Contractor & the Company agree that the above percentages of liquidated damage is genuine pre-estimates of loss /damage, which the Company would have to suffer on account of delay/breach on the part of the Contractor and the said amount will be payable on demand without there being any proof of the actual loss /or damage caused by such delay/breach. Decision of the Company in the matter of applicability liquidated damage shall be final & binding on the Contractor.

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AMBIENT AIR QUALITY MONITORING SYSTEM (AAQMS)

CARBON MONOXIDE (CO) ANALYSER

SL NO.	DESCRIPTION		
1	PRINCIPLE	:	GAS FILTER CORRELATION
2	MEASUREMENT	:	CO
3	DISPLAY	:	15” LCD/LED DISPLAY
4	RANGES	:	0-1000 PPB
5	MINIMUM DETECTABLE LIMIT	:	0.04 PPM
6	NOISE LEVEL	:	<0.1PPM
7.	ZERO DRIFT AT LOWEST RANGE	:	<0.1 PPM/ 7 DAYS
8.	SPAN DRIFT AT LOWEST RANGE	:	+ 1% IN 7 DAYS
9.	RESPONSE TIME AT LOWEST RANGE	:	2 MINUTES OR LESS
10	LINEARITY	:	±1% OF FULL SCALE READING
11.	CALIBRATION	:	BUILT IN THROUGH CALIBRATION ALONG WITH GAS CYLINDER
12.	CONSUMABLES AND SPARES	:	RECOMMENDED REQUIREMENTS OF 2 YEARS OF CONTINUOUS OPERATION
13.	DIGITAL SIGNAL TRANSMISSION	:	RS 232 LINK , ANALYZER SHALL BE CAPABLE TO TRANSFER ALL THE DATA THROUGH RS 232 LINK TO A PC BASED DATA LOGGER

OXIDES OF NITROGEN (NO/ NO2/ NOx) ANALYSER

SL NO.	DESCRIPTION		
1	PRINCIPLE		CHEMI LUMINESCENCE
2	MEASUREMENT		NO, NO2, NOx in Ambient Air
3	DISPLAY		15” LCD/LED DISPLAY
4.	RANGES		0-1000 PPB IN MULTI-RANGES(MINIMUM FOUR SELECTABLE RANGES) PREFERABLY AS BELOW: 0-100 PPB, 0-200 PPB, 0-500 PPB AND 0-1000 PPB
5	MINIMUM DETECTABLE LIMIT		1 PPB
6	NOISE LEVEL		0.5 PPB OR LESS
7.	ZERO DRIFT AT LOWEST RANGE		<1PPB IN 24 HOURS WITH AUTOMATIC ZERO COMPENSATION
8.	SPAN DRIFT AT LOWEST RANGE		+ 2% IN 7 DAYS OF FULL SCALE
9.	RESPONSE TIME AT LOWEST RANG		2 MINUTES OR LESS
10	LINEARITY		+/- 1% OF FULL SCALE READING
11	CALIBRATION		BUILT IN CALIBRATION FACILITY.

	12.	CONSUMABLES AND SPARES		RECOMMENDED REQUIREMENTS OF 2 YEARS OF CONTINUOUS OPERATION
	13.	DIGITAL SIGNAL TRANSMISSION		RS 232 LINK , ANALYZER SHALL BE CAPABLE TO TRANSFER ALL THE DATA THROUGH RS 232 LINK TO A PC BASED DATA LOGGER
	1	VENDOR SHALL SUBMIT ALL ROUTINE TEST CERTIFICATES		
	2	VENDOR SHALL SUPPLY LED DISPLAY FOR MOUNTING AT MAIN GATE.		
	3	VENDOR SHALL SUPPLY UPS SYSTEM FOR THE SYSTEM		
	4	COMMUNICATION SHALL BE PROVIDED FOR MONITORING THE STATUS IN DCS AND LED DISPLAY AT MAIN GATE.		
	5	VENDOR SHALL SUPPLY NECESSARY SOFTWARES FOR DATA ACQUISITION AND PC CONSOLES.		
	NOTE TO MPC CONTRACTOR			
	1	AS PER SITE REQUIREMENT NOX & CO MONITORING SHALL BE SUFFICIENT BUT AS PER REFINERY STANDARDS TOTAL HYDROCARBON ANALYZER, BENZENE, TOLUENE & XYLENE ANALYSER, THE SAME SHALL BE TAKEN CARE OF MPC CONTRACTOR		
	2	LOCATION SHALL BE FINALIZED AS PER THE REFINERY AND PCB NORMS		

PTZ CAMERA - OUTDOOR HAZARDOUS AREA DATASHEET			
SL. NO.	**DESCRIPTION**		
1	MAKE	:	*
2	MODEL NUMBER	:	*
3	TYPE OF CAMERA	:	HD IP BASED IR ROTATING PTZ CAMERA
4	IR ILLUMINATORS	:	INTEGRATED FOR 150 METERS
5	VIDEO RESOLUTION	:	NOT LESS THAN 530 TV LINES OR BETTER
6	LENS WITH ZOOM	:	26X OPTICAL OR BETTER
7	DAY/NIGHT OPERATION	:	REQUIRED/ AUTOMATIC
8	HEATER & WIPER	:	REQUIRED
9	LOCATION	:	OUTDOOR / HAZARDOUS AREA
10	MOUNTING	:	POLE MOUNTING
11	POWER INPUT	:	24V AC 2A, SURGE PROTECTOR
12	HOUSING	:	WEATHERPROOF TO IP66 EXD
13	COMMUNICATION	:	IP BASED
14	MINIMUM ILLUMINATION	:	LESS THAN 0.5 LUX
15	VIDEO ENCODER	:	H.264, MOTION JPEG SIMULTANEOUSLY
16	VIDEO PROFILE	:	4 CIF/ CIF/ QCIF
17	SIGNAL TO NOISE RATIO	:	>50 DB
18	STREAMING	:	CONSTANT & VARIABLE BIT RATE
19	SECURITY	:	PASSWORD PROTECTION, IP ADDRESS PROTECTIO
20	ETHERNET	:	10/100 M AUTO NEGOTIATION
21	VIDEO BUFFER	:	PRE AND POST ALARM BUFFERING
22	BLC	:	BLC ON/OFF
23	PAN ANGLE	:	360°
24	TILT ANGLE	:	120°
25	PAN SPEED	:	0. 1°~300°/SEC
26	TILT SPEED	:	0. 1°~120°/SEC
27	PRESET SPEED	:	360°/SEC
28	PRESET POSITION	:	MAXIMUM 128
29	ACCURACY	:	0.1°
30	AUTO SCAN	:	ON/OFF
30	WHITE BALANCE	:	MANUAL/AUTO/INDOOR/OUTDOOR/ATW
31	WIDE DYNAMIC	:	ON/OFF
32	FRAME RATE	:	50/60 FPS
33	SIMULTANEOUS ACCESS BY USER	:	AT LEAST 8 USERS AT A TIME
34	DIGITAL ZOOMING	:	12X OR ABOVE

35	ACCESSORIES:	:	A) FIXTURES AND BOLTS & NUTS SHALL BE MADE OUT OF SS MATERIAL SUITABLE FOR SALINE ATMOSPHERE. B) CAMERA WITH WIPER ARRANGEMENTS FOR FOGGING ATMOSPHERE LOCATIONS.

SCHEDULE OF RATES/PRICES (SOR/P) FOR INSTRUMENTATION PACKAGE

	DESCRIPTION	PRICE (INR)
1.	**Nadua Instrumentation Package "Annexure- II A"** Price covering Engineering, Supply, Installation, Testing and Commissioning including, packing/forwarding on Ex Work's basis.	
2.	**East Khagorijan Instrumentation Package "Annexure- II B"** Price covering Engineering, Supply, Installation, Testing and Commissioning including, packing/forwarding on Ex Work's basis.	
3.	**Nadua Instrumentation Package** Freight & Insurance Charges for delivery & Unloading at site Price	
4.	**East Khagorijan Instrumentation Package** Freight & Insurance Charges for delivery & Unloading at site Price	
	TOTAL (1 +2+3+ 4)	
	GRAND TOTAL PRICE	

Note:

1. Price quoted 1, 2, 3 and 4 above is exclusive of GST, which is extra as applicable

2. The total price(1+2+3+4) in this Schedule of Rates/Prices (SOR/P) shall be considered for evaluation of the price bid.

VOLUME-I Part-III
SECTION-1

TERMS OF REFERENCE & TECHNICAL SPECIFICATIONS

VOLUME-I Part-III

SECTION: 1

TERMS OF REFERENCE & TECHNICAL SPECIFICATIONS

1.0 INTRODUCTION:

OIL INDIA LIMITED (OIL) a Government of India Enterprise, proposes to construct two number of Surface Production facilities primarily for separation of Oil, Gas & Water and processing of non-associated & associated gas in its producing field at Nadua and East Khagorijan. The installation will be constructed on Modular design concept with emphasis on skid mounted prefabricated facilities minimizing civil construction work at site to the extent possible as per functional specifications of various process/utility packages. Instead of permanent civil buildings, containerized offices/structures will be preferred.

KAVIN ENGINEERING AND SERVICES PRIVATE LIMITED(Consultant) has been appointed as Engineering Procurement Construction Management Consultant forconstruction of surface production facilities Oil Collection Station (OCS) at Nadua and Group Gathering Station (GGS) at East Khagorijan, in upper Assam.

The NADUA (OCS) oil field is located near Dibrugarh town in Assam. The field is presently producing from 04 Nos. of wells through a QPS (Quick Production Setup). Considering the potential of the field, it is envisaged that Oil production is expected to rise to a level of 1200 KLPD from 15 HP wells, 15 LP wells. Associated Gas is expected to be around 0.2 MMSCMD. Oil India Limited proposes to construct an Oil Collecting Station (OCS) at NADUA to cater to the production in that area. It is also expected that the field will produce about 800 KLPD of water along with the 1200 KLPD of crude, so the plant design will be for handling 2000KLPD of total well fluid.

The East Khagorijan (GGS) field is located near Dibrugarh town in Assam at a location approximately 200m south (aerial distance) of Loc# TAI at 27°32'N 95°09'E approx. Elevation 121 mMSL. The field is presently producing from 02 Nos. of wells through a QPS (Quick Production Setup). Considering the potential of the field it is envisaged that Oil production is expected to rise to a level of 1000 KLPD from 06 HP wells, 06 LP wells and 06 Non Associated Gas wells. Associated Gas is expected to be around 0.1 MMSCMD. The East Khagorijan gas field is expected to produce about 1 MMSCMD of non-associated natural gas from this area. It is also expected that the field will produce about 800 KLPD of water along with the 1000 KLPD of crude, so the plant design will be for handling 1800KLPD of total well fluid. Oil India Limited proposes to construct a Group Gathering Station (OCS + FGS) at East Khagorijan to cater to the production in that area.

Pipelines carrying well fluids to the proposed surface production facilities and pipelines transporting dry crude, separated gas, treated water from the facilities are not in the project scope.

1.1 SUBJECT:

As part of this development scheme, OIL desires to procure **Instrumentation and Control System** assembled in containerized central control room (CCR) and also avail installation, testing and commissioning of all field instruments, cabling, cable carriers, etc,. for the operation of the Oil Collection Station (OCS) at Nadua and Group Gathering Station (GGS) at East Khagorijan in Upper Assam, India.

1.2 SITE DETAIL: Nadua& East Khagorijan

Location:

Nadua is a village in Panitola Tehsil in Dibrugarh District of Assam State, India. It is located 20 KM towards East from District headquarters Dibrugarh and 426 KM from State capital Dispur. East Khagorijan is close to Chauba town, located 11km from Chabua Railway station.

Dibrugarh Town Rail Way Station is major railway station 23 KM near to Nadua

Airport: Nearest airport Dibrugarh

1.3 FIELD DETAILS:

Nadua and East Khagorijan are Oil producing fields with associated gas. East Khagorijan produces non-associated gas also. Nadua production facility will be connected to 15 LP well and 15 HP wells and will produce 2000 KLPD fluid, out of which 1200 KLPD will be crude. East Khagorijan will be connected with 6 LP wells, 6 HP wells, 6 Non-Associated Gas wells. East Khagorijan will produce 1000 KLPD crude and 1 MMSCFD of non-associated gas.

2.0 OBJECTIVE:

This document specifies the scope of work to be performed by the MPC contractor for the design, engineering, procurement, fabrication & supply of Control systems and Interface Instruments installation, commissioning work of field instruments and cabling, etc,. for creation of surface production facilities Oil Collection Station (OCS) and Group Gathering Station (GGS). Modular Package Construction (MPC) Contractor shall supply Containerized Central Control Room with Control System in accordance with the given Terms of Reference, guidelines, instructions.

The equipments which are to be supplied for Nadua and East Khagorijan shall be latest, suitable, appropriate & proven technology. The proposed installation is designed to meet all the latest and relevant standards for QHSE-ISO and ISRS (International Safety Rating System), OMR (Oil Mines Regulations) 2017, IE Rules, OISD (Oil Industry Safety Directorate), DGMS (Director General of Mines and Safety) and any other relevant laws, by-laws, or Acts in force, etc.

3.0 SCOPE OF WORK:

The Scope of supply involves package design, engineering, procurement, installation, fabrication of Containerized Central Control Room with Control System and Interface Instruments required for OCS Nadua and GGS East Khagorijan. Scope also includes dismantling the system after FAT at vendor's works, transportation, unloading, storing at site, reassemble, install, complete internal cabling of complete package/skid at respective site. The Scope of supply shall be minimum as listed in section 3.1 below but not limited this. MPC Contractor shall be responsible for the supply of all required items for the satisfactory operation of the unit.

3.1 FOR FACILITIES IN NADUA SITE

Item No.	Description	Unit	Quantity
1.0	**PREFABRICATED CONTROL ROOM**		
1.1	Design, Engineering, Manufacturing, Assembling, Supply, Installation, Testing & Commissioning of as required Containers 40' x 8' with all accessories like internal lighting DB, cable tray, MCT, Lighting Fixtures, Exhaust Fans, Cable Trays, Cable conduits, smoke detectors, air conditioners, fire alarm panel, fire extinguishers, etc suitable for housing all the instrument control systems and its accessories (Note-1). Minimum quantity of containers can be 2 Nos. for control room and exact requirement shall be decided based on bidder's engineering layout/requirements.	LOT	1
2.0	**CONTROL SYSTEM**		

Item No.	Description	Unit	Quantity
2.1	Design, Engineering, Manufacturing, Assembling, Supply, Installation, Testing & Commissioning of Control System. Online integrated advanced communication based control system shall be assembled and wired up in a containerized control room. Dedicated TMR/QMR based PLC for ESD F&G System based Safety Instrumentation System (SIS) shall be provided with dedicated HMI and mimic panel for safe automatic operation and control as per IEC61508 & IEC61511 standards. Redundant communication links between its host and sever system. Engineering workstation shall be additionally configured for working as operator workstation also. Panel shall be suitable for cable entry in the bottom with SS 316 gland plate of min. 3mm thk. Panel shall be fabricated of CRCA Sheet steel having min. 2.0mm thk. for door and min. 2.0mm thk. for load bearing sections. Panel shall be powder coated after seven tank process with Shade 631 as per IS-5. Panel shall be of Dust & Vermin proof and shall be confirming of IP42 degree of Protection. All analog inputs, analog outputs, digital inputs are through IS barriers and digital outputs through relays. Panel shall be fabricated as per the relevant Indian Standards, Wiring & GA Drawing. Panel fabricator shall have Type test certificate for Short Circuit, Temperature Rise and IP Protection. Drawing & QAP should be approved before the fabrication of panel. TPIA should be done by the approved agency of OIL at suppliers cost in presence of OIL representative. (Refer Drawing :Control System Architecture :- 17039-ND-I-DW-8009)	EA	1
2.2	Design, Engineering, manufacturing and supply of Marshalling Cabinet for DCS and TMR/QMR based ESD/F&G system in accordance with the Specifications and other documents as mentioned in TOR. Bidder shall consider 20% Installed spares and 20% spare space.	LOT	1
2.3	Design, Engineering, manufacturing and supply of System Cabinet in accordance with the Specifications and other documents as mentioned in TOR.	LOT	1
2.4	Design, Engineering, manufacturing and supply of Operator Consoles in accordance with the Specifications and other documents as mentioned in TOR. (Refer Item No. 2.8)	LOT	1
2.5	Network Cabinet	LOT	1

Item No.	Description	Unit	Quantity
2.6	Network/Ethernet Switches	LOT	1
2.7	GPS based 10 Time Sync ports	LOT	1
2.8	Dual Monitor Operator Stations (DCS and ESD/F&G) configured for both OWS and EWS. Operating System shall be based on Windows 10 or above.	NOS.	2
2.9	Laptop for HART Management Intel Core i7 Processor (Dual Core, 3.5GHz, 3MB Cache, w/HD Graphics 4400) 8GB 1600MHz DDR3 Memory 1TB 3.5inch Serial ATA (7,200 Rpm) Hard Drive 8X Slimline DVD+/-RW drive Intel(R) Core I7 Label / Internal Dell Business Audio Speaker USB Optical Mouse US English (QWERTY) Dell Keyboard Touchpad USB, Ethernet and HDMI port Windows 10 Professional, English 15.6” Display	NO.	1
2.10	Supply and Installation of Panel fixing frames	LOT	1
2.11	Supply and Installation of Clean Agent System for control room. Clean agent system shall as per NFPA 2001or latest guidelines and chemical composition of FK-5-1-12 or equivalent.	LOT	1
2.12	Containerized Central Control Room and support frame for equipment	LOT	1
2.13	Indoor lighting, Light switches, conduit boxes	LOT	1
2.14	Split Air Conditioning Unit	LOT	1
2.15	Furniture shall be provided to accommodate 4 personnel	LOT	1
2.16	Document Rack shall be provided	LOT	1

Item No.	Description	Unit	Quantity
2.17	VSAT Radio transmission provision shall be made available in Control System for monitoring plant operation.	LOT	1
2.18	Software Licenses	LOT	1
2.19	Supply, installation, testing and commissioning of Tank Instruments as per typical instrument list breakup	LOT	1
2.20	Supply and installation of instrument earth pit for clean grounding system. Bidder shall provide Chemical treated earth rod for earthing.	LOT	1
2.21	Hardware for panel base frame, Console and cable tray supports, etc,.	LOT	1
2.22	UPS monitoring through DCS shall be provided	LOT	1
2.23	Software shall be Windows latest version based, Anti-Virus software, Tag License and Firewall protection shall be provided	LOT	1
2.24	Cable Installation, Glanding & terminations	LOT	1
2.25	Flow Computation in DCS for Fiscal Measurement Instruments	LOT	1
2.26	Loop Checking from Field instruments to the Control system.	LOT	1
2.27	Pre-Commissioning & third party system integration.	LOT	1
2.28	As-builting Engineering documents	LOT	1

Item No.	Description	Unit	Quantity
2.29	ENGINEERING DRAWINGS & DOCUMENTATION: Following are the minimum documents/drawings that to be submitted for EPCM approval a) Functional Design Specification of Control System b) Control System Architecture Drawing c) Graphics pages d) Logic drawing e) Interlocs and Protection Specificaiton f) Bill of materials g) General Arrangement Drawing h) Wiring Diagram i) Panel Interconnection Diagram j) Loop Drawing k) Modbus Mapping List l) Integration of SCADA m) Nameplate Detail Drawing	LOT	1
2.30	Protective coating / Painting	LOT	1
2.31	Name plate	LOT	1
2.32	Vendor Documentation as per VDRL	LOT	1
2.33	Quality Assurance	LOT	1
2.34	Third party certification	LOT	1
3.0	**MULTI-CABLE TRANSIT**		
3.1	Design, Engineering, Manufacturing, Assembling, Supply, Installation, Testing & Commissioning of multi cable transit with required number of blocks and frames. SS 316 Frame. Vendor shall decide MCT size and quantity based on cables to Central Control Room	LOT	1
4.0	**INSTRUMENTS**		
4.1	Supply, Installation, Testing & Commissioning of Shutdown Valves	NOS.	17

Item No.	Description	Unit	Quantity
4.2	Supply, Installation, Testing & Commissioning of Control Valves	NOS.	6
4.3	Supply, Installation, Testing & Commissioning of Motor Operated Valves	NOS.	13
4.4	Supply, Installation, Testing & Commissioning of Motor Operated Valves (Local control panel with push button)	NOS.	4
4.5	Supply, Installation, Testing & Commissioning of Level Indicator - Float and Board type	NOS.	2
4.6	Supply, Installation, Testing & Commissioning of Level Indicator – Reflex type	NOS.	4
4.7	Supply, Installation, Testing & Commissioning of Level Transmitters - Radar type with Remote Display Unit	NOS.	16
4.8	Supply, Installation, Testing & Commissioning of Level Transmitters - DP type	NOS.	4
4.9	Supply, Installation, Testing & Commissioning of DP type Flow Indicator	NOS.	1
4.10	Supply, Installation, Testing & Commissioning of Flow element (Orifice)	NOS.	1
4.11	Supply, Installation, Testing & Commissioning of Rotameter type flow indicator	NOS.	2
4.12	Supply, Installation, Testing & Commissioning of Coriolis Type Flow Meter - Fiscal Flow Meter	NOS.	2
4.13	Supply, Installation, Testing & Commissioning of Pressure transmitter	NOS.	1
4.14	Supply, Installation, Testing & Commissioning of Differential Pressure Transmitters	NOS.	4
4.15	Supply, Installation, Testing & Commissioning of Pressure Indicator	NOS.	2
4.16	Supply, Installation, Testing & Commissioning of Temperature Element with Indicator	NOS.	10
4.17	Supply, Installation, Testing & Commissioning of Pressure Safety Valves	NOS.	10
4.18	Supply, Installation, Testing & Commissioning of Temperature Element with Transmitter	NOS.	22

Item No.	Description	Unit	Quantity
4.19	Supply, Installation, Testing & Commissioning of Magnetic type flow transmitter	NOS.	1
4.20	Installation of Loose Supplied Third Party Panels in Control Room (LP Gas Compressor Control Panel Train A and Train B, STP Control Panel, WTP Control Panel, ETP Control Panel, Burner Management System A and B). Panels dimensions shall be 1200mm(L) x 2200mm(H) x 600mm(D).	LOT	1
4.21	Supply, Installation, Testing & Commissioning of Electronic Mimic Panel with large display screen (52”)	NO.	1
4.22	Supply, Installation, Testing & Commissioning of Ambient Air Quality Monitoring System. AAQMS shall consist of CO & CO2 analyser, NO, NO2 & NOx analyser, Suspended particulate measurement analyser, PC based data logger, calibrators, calibration cylinders and zero gas generators. Gas Filter Correlation principle.15” LED Display shall be provided.	NO.	1
5.0	**INSTRUMENT TUBE AND FITTINGS MTO**		
5.1	Supply, installation, testing and commissioning of Tube and Fittings as per MTO	LOT	1
6.0	**INSTRUMENT JUNCTION BOXES**		
6.1	Supply, installation, testing and commissioning of Ex 'd' Junction Box - Aluminium Casting Alloy LM6	NOS.	16
7.0	**INSTRUMENT CABLE GLANDS**		
7.1	Supply, installation, testing and commissioning of Nickel plated brass Double compression type Cable Glands (1/2" (M20) - 626 Nos. , 1" (M25) - 52 Nos., 1 1/4" (M32) - 246 Nos., 1 1/2" (M40) - 36 Nos., 2" (M50) - 170 Nos.) Cable glands Explosion proof certified to NEMA 7.	LOT	1
8.0	**FIRE AND GAS DETECTORS/DEVICES**		
8.1	Supply, installation, testing and commissioning of UV/IR Flame Detectors	NOS.	6
8.2	Supply, installation, testing and commissioning of Point type Gas Detectors	NOS.	6

Item No.	Description	Unit	Quantity
8.3	Supply, installation, testing and commissioning of Open Path Gas Detectors (Range - 60m)	NOS.	3
8.4	Supply, installation, testing and commissioning of Electrical Operated Hooters	NOS.	2
8.5	Supply, installation, testing and commissioning of Manual Operated Hooters	NO.	2
8.6	Supply, installation, testing and commissioning of Manual Call Points. Manual call points shall be addressable type	NOS.	15
9.0	**TELECOM EQUIPMENT AND SYSTEM & ITS ACCESSORIES**		
9.1	Supply, installation, testing and commissioning of 6 Nos. of outdoor PTZ CCTV Cameras and Cables & its accessories including NVR. Bidder shall consider hardwares required to include features for remote operation of particular PTZ Camera and operated. Bidder shall select and supply cables between control room FOP and CCTV Cabinet.	LOT	1
9.2	Supply, installation, testing and commissioning of 6 Nos. of Fibre Optic Patch Panel integral with Power Over Ethernet Switch.	LOT	1
9.3	Supply, installation, testing and commissioning of separate CCTV 52” screen at CCR	NO.	1
9.4	Supply, installation, testing and commissioning of 24” monitor at Installation Manager & security room	NO.	2
9.5	Walkie & Talkie (Intrinsic Safe) - Quantity - 4 Nos.	LOT	1
9.6	Enclosure for Fiber Optic Patch Panel and Ethernet Switch (Outdoor)	NOS.	6
10.0	**INSTRUMENT CABLES**		

Item No.	Description	Unit	Quantity
10.1	Design, Supply and laying of 250V grade, single/multi-pair/core cables Type - Flame retardant, IS cables, Single Pair, Twisted, Screened, Armoured Cable with Overall Shield. Conductor - Annealed tinned copper Conductor Resistance - As per BS-EN-50288 Part 7 Conductor Size - Minimum 1.5Sq.mm Insulation - Extruded polyethylene (PE) as per BS-EN-50290-2 Conductor Color - Pairs : White(+) & Black(-) Screening - Glass mica/PETP tape with the metallic side down helically applied with min 25% overlap Shield thickness shall be as per IEC 60092. drain wire contact with Aluminium side of the shield. Armour -Galvanised steel Outer Sheath - Extruded flame retardant PVC IEC-332, Type ST-2, 90°C as per IS-5831 Outer Sheath Color - Light blue		
10.2	Flame Retardant - 1Px1.5	MTR	1050
10.3	Flame Retardant - 2Px1.5	MTR	4495
10.4	Flame Retardant - 4Px1.5	MTR	1350
10.5	Flame Retardant - 8Px1.5	MTR	3497
10.6	Flame Retardant - 12Px1.5	MTR	8439
10.7	Flame Retardant - 16Px1.5	MTR	6438
10.8	Flame Retardant - 24Px1.5	MTR	18118
10.9	RS-485 - 2P 22/7 AWG	MTR	5500
10.10	CAT-6 - 4P 23AWG	MTR	300

Item No.	Description	Unit	Quantity
10.11	Design, Supply and laying of 250V grade, single/multi-pair/core cables Type - Fire resistant, IS cables, Single Core Amoured Cable with Overall Shield. Conductor - Annealed Electric copper, Class II (7 Stranded) Conductor Size - Minimum 1.5Sq.mm Insulation - Polyvinyl chloride type 'C' as per IS 5831 Conductor Color - Pairs : Black(+) & blue(-) Screening - Glass mica/PETP tape with the metallic side down helically applied with 25% overlap Shield thickness shall be as per IEC 60092. drain wire contact with Aluminium Armour - Galvanised steel Outer Sheath - Extruded flame retardant PVC IEC-332, Type ST-2, 90°C as per IS-5831 Outer Sheath Color - Light blue		
10.12	Fire Resistant - 1Px1.5	MTR	3990
10.13	Fire Resistant - 2Px1.5	MTR	60
10.14	Fire Resistant - 4Px1.5	MTR	2269
10.15	Fire Resistant - 6Px1.5	MTR	2164
10.16	Fire Resistant - 8Px1.5	MTR	4553
10.17	Fire Resistant - 12Px1.5	MTR	5322
10.18	Fire Resistant - 16Px1.5	MTR	7990
10.19	Fire Resistant - 24Px1.5	MTR	15731

Item No.	Description	Unit	Quantity
10.20	Design, Supply and laying of 250V grade, single/multi-pair/core cables Type - Fire resistant NON-IS cables, Single Traid Twisted Screened, Armoured Cable with Overall Shield. Conductor - Annealed tined copper Conductor Size - Minimum 1.5Sq.mm Insulation - Extruded polyethylene (PE) as per BS-EN-50290-2 Conductor Color - Black, blue & brown Screening - Glass mica/PETP tape with the metallic side down helically applied with 25% overlap Shield thickness shall be as per IEC 60092. drain wire contact with Aluminium Armour -Galvanised steel Outer Sheath - Extruded flame retardant PVC IEC-332, Type ST-2, 90°C as per IS-5831 Outer Sheath Color - Black		
10.21	Fire Resistant - 1Tx1.5	MTR	2067
10.22	Fire Resistant - 12Tx1.5	MTR	975
10.23	Design, Supply and laying of CCTV Cables CAT-6 cables shall be 250 MHz Cat.6, 4 Pair Shielded Twisted Pair cable. Solid copper conductors of size minimum 23 AWG shall be provided, Polypropylene/ Polyethylene insulated (Nominal thickness 0.8 mm), shielded with aluminium polyester tape with 0.5 mm tinned copper drain wire, inner sheath of extruded PVC ST-2, and outer sheath of extruded FRLS PVC ST-2		
10.24	4P X 23 AWG, Power Over Ethernet (POE)	MTR	660
10.25	Design, Supply and laying of CCTV FO Cables Multimode, Jelly filled loose tube with central strength member, each fibre & buffer uniquely identified by colour code. inner sheath/ moisture barrier- 1.0mm thick polyethylene compound with 0.2mm thick aluminium foil bonded to the inner surface to act as moisture barrier.		

Item No.	Description	Unit	Quantity
	armouring-2 layers each 0.2mm thick galvanised steel tape applied helically or corrugated steel tape of 0.15mm thickness. outer sheath-HDPE min. thick 1.5 mm.		
10.26	2 Core FO Cable	MTR	65
10.27	6 Core FO Cable	MTR	2930
11.0	**CABLE TRAY**		
11.1	Design, Supply and laying of Cable trays with covers made up of FRP, corrosion resistant and flame retardant 3mm thick heavy duty, straight cable tray with outside rail for outdoor areas. Straight sections shall be provided in standard lengths of 3m.All associated cable tray fittings shall be of the same manufacturing characteristics as the straight sections. All splice plates and assembly hardware shall be SS 316.		
11.2	CABLE LADDER - 300W x 150H TRAY	MTR	228
11.3	CABLE LADDER - 600W x 150H TRAY	MTR	163
11.4	CABLE LADDER - INNER COMBI-RISER R=300	NOS.	5
11.5	CABLE LADDER - LEFT 90 DEG FLAT ELBOW	NOS.	3
11.6	CABLE LADDER - LEFT REDUCER PART (600>300)	NO.	1
11.7	CABLE LADDER - OUTER COMBI-RISER R=300	NOS.	5
11.8	CABLE LADDER - RIGHT 90 DEG FLAT ELBOW	NOS.	3
11.9	150 SS - INNER COMBI-RISER R=300	NOS.	7
11.10	150 SS - OUTER COMBI-RISER R=300	NOS.	7
11.11	PERFORATED TRAY - 100W x 50H 30 DEG 305 OUTSIDE RADIUS ELBOW	NO.	1

Item No.	Description	Unit	Quantity
11.12	PERFORATED TRAY - 100W x 50H 45 DEG 610 OUTSIDE RADIUS ELBOW	NOS.	3
11.13	PERFORATED TRAY - 100W x 50H 90 DEG 305 INSIDE RADIUS ELBOW	NOS.	13
11.14	PERFORATED TRAY - 100W x 50H 90 DEG 305 OUTSIDE RADIUS ELBOW	NOS.	10
11.15	PERFORATED TRAY - 100W x 50H HORIZONTAL 90 DEG BEND	NOS.	3
11.16	PERFORATED TRAY - 100W x 50H TRAY	MTR	621
11.17	PERFORATED TRAY - 150W x 100H 30 DEG 305 OUTSIDE RADIUS ELBOW	NO.	1
11.18	PERFORATED TRAY - 150W x 100H 45 DEG 305 INSIDE RADIUS ELBOW	NO.	1
11.19	PERFORATED TRAY - 150W x 100H 90 DEG 305 INSIDE RADIUS ELBOW	NOS.	4
11.20	PERFORATED TRAY - 150W x 100H 90 DEG 305 OUTSIDE RADIUS ELBOW	NOS.	4
11.21	PERFORATED TRAY - 150W x 100H HORIZONTAL 90 DEG BEND	NO.	1
11.22	PERFORATED TRAY - 150W x 100H TRAY	MTR	143
11.23	PERFORATED TRAY - 200W x 100H 30 DEG 305 OUTSIDE RADIUS ELBOW	NO.	1
11.24	PERFORATED TRAY - 200W x 100H 45 DEG 305 INSIDE RADIUS ELBOW	NO.	1
11.25	PERFORATED TRAY - 200W x 100H 90 DEG 305 INSIDE RADIUS ELBOW	NOS.	3
11.26	PERFORATED TRAY - 200W x 100H 90 DEG 305 OUTSIDE RADIUS ELBOW	NOS.	3
11.27	PERFORATED TRAY - 200W x 100H HORIZONTAL 90 DEG BEND	NO.	1
11.28	PERFORATED TRAY - 200W x 100H TRAY	MTR	193

Item No.	Description	Unit	Quantity
11.29	PERFORATED TRAY - 50W x 50H TRAY	MTR	306
12.0	**INSTRUMENT BULK MTO**		
12.1	Supply, installation, testing and commissioning of Instrument bulk MTO	LOT	1
13.0	**ANCHOR BOLTS**		
13.1	Design, Engineering, Manufacturing, Assembling, Supply & Installation of Anchor bolts for modular package (Container) and Steel foundation template for anchor bolt fixation shall be provided. Anchor bolts and Steel template shall be provided by MPC Contractor 60 days prior to delivery of package. Location: Container	LOT	1

3.2 FOR FACILITIES IN EAST KHAGORIJAN SITE

Item No.	Description	Unit	Quantity
1.0	**PREFABRICATED CONTROL ROOM**		
1.1	Design, Engineering, Manufacturing, Assembling, Supply, Installation, Testing & Commissioning of as required Containers 40' x 8' with all accessories like internal lighting DB, cable tray, MCT, Lighting Fixtures, Exhaust Fans, Cable Trays, Cable conduits, smoke detectors, air conditioners, fire alarm panel, fire extinguishers, etc suitable for housing all the instrument control systems and its accessories (Note-1)	LOT	1
2.0	**CONTROL SYSTEM**		

Item No.	Description	Unit	Quantity
2.1	Design, Engineering, Manufacturing, Assembling, Supply, Installation, Testing & Commissioning of Control System. Online integrated advanced communication based control system shall be assembled and wired up in a containerized control room. Dedicated TMR/QMR based PLC for ESD F&G System based Safety Instrumentation System (SIS) shall be provided with dedicated HMI and mimic panel for safe automatic operation and control as per IEC61508 & IEC61511 standards. Redundant communication links between its host and sever system. Engineering workstation shall be additionally configured for working as operator workstation also. Panel shall be suitable for cable entry in the bottom with SS 316 gland plate of min. 3mm thk. Panel shall be fabricated of CRCA Sheet steel having min. 2.0mm thk. for door and min. 2.0mm thk. for load bearing sections. Panel shall be powder coated after seven tank process with Shade 631 as per IS-5. Panel shall be of Dust & Vermin proof and shall be confirming of IP42 degree of Protection. All analog inputs, analog outputs, digital inputs are through IS barriers and digital outputs through relays. Panel shall be fabricated as per the relevant Indian Standards, Wiring & GA Drawing. Panel fabricator shall have Type test certificate for Short Circuit, Temperature Rise and IP Protection. Drawing & QAP should be approved before the fabrication of panel. TPIA should be done by the approved agency of OIL at suppliers cost in presence of OIL representative. (Refer Drawing :Control System Architecture :- 17039-EK-I-DW-8009)	EA	1
2.2	Design, Engineering, manufacturing and supply of Marshalling Cabinet for DCS and TMR/QMR based ESD/F&G system in accordance with the Specifications and other documents as mentioned in TOR. Bidder shall consider 20% Installed spares and 20% spare space	LOT	1
2.3	Design, Engineering, manufacturing and supply of System Cabinet in accordance with the Specifications and other documents as mentioned in TOR.	LOT	1
2.4	Design, Engineering, manufacturing and supply of Operator Consoles in accordance with the Specifications and other documents as mentioned in TOR.	LOT	1

Item No.	Description	Unit	Quantity
2.5	Network Cabinet	LOT	1
2.6	Network/Ethernet Switches	LOT	1
2.7	GPS based 10 Time Sync ports	LOT	1
2.8	Dual Monitor Operator Stations (DCS and ESD/F&G) configured for both OWS and EWS. Operating System shall be based on Windows 10 or above.	NOS.	2
2.9	Laptop for HART Management Intel Core i7 Processor (Dual Core, 3.5GHz, 3MB Cache, w/HD Graphics 4400) 8GB 1600MHz DDR3 Memory 1TB 3.5inch Serial ATA (7,200 Rpm) Hard Drive 8X Slimline DVD+/-RW drive Intel(R) Core I7 Label / Internal Dell Business Audio Speaker USB Optical Mouse US English (QWERTY) Dell Keyboard Touchpad USB, Ethernet and HDMI port Windows 10 Professional, English 15.6” Display	NO.	1
2.10	Supply and Installation of Panel fixing frames	LOT	1
2.11	Supply and Installation of Clean Agent System for control room. Clean agent system shall as per NFPA 2001or latest guidelines and chemical composition of FK-5-1-12 or equivalent.	LOT	1
2.12	Containerized Central Control Room and support frame for equipment	LOT	1
2.13	Indoor lighting, Light switches, conduit boxes	LOT	1

Item No.	Description	Unit	Quantity
2.14	Split Air Conditioning Unit	LOT	1
2.15	Furniture shall be provided to accommodate 4 personnel	LOT	1
2.16	Document Rack shall be provided	LOT	1
2.17	VSAT Radio transmission provision shall be made available in Control System for monitoring plant operation.	LOT	1
2.18	Software Licenses	LOT	1
2.19	Supply, installation, testing and commissioning of Tank Instruments as per typical instrument list breakup	LOT	1
2.20	Supply and installation of instrument earth pit for clean grounding system. Bidder shall provide Chemical treated earth rod for earthing.	LOT	1
2.21	Hardware for panel base frame, Console and cable tray supports, etc,.	LOT	1
2.22	UPS monitoring through DCS shall be provided	LOT	1
2.23	Software shall be Windows latest version based, Anti-Virus software, Tag License and Firewall protection shall be provided	LOT	1
2.24	Cable Installation, Glanding & terminations	LOT	1
2.25	Flow Computation in DCS for Fiscal Measurement Instruments	LOT	1
2.26	Loop Checking from Field instruments to the Control system.	LOT	1
2.27	Pre-Commissioning & third party system integration.	LOT	1

Item No.	Description	Unit	Quantity
2.28	As-builting Engineering documents	LOT	1
2.29	ENGINEERING DRAWINGS & DOCUMENTATION: Following are the minimum documents/drawings that to be submitted for EPCM approval a) Functional Design Specification of Control System (DCS, ESD) b) Control System Architecture Drawing c) Graphics pages d) Logic drawing e) Interlocs and Protection Specificaiton f) Bill of materials g) General Arrangement Drawing h) Wiring Diagram i) Panel Interconnection Diagram j) Loop Drawing k) Modbus Mapping List l) Integration of SCADA m) Nameplate Detail Drawing	LOT	1
2.30	Protective coating / Painting	LOT	1
2.31	Name plate	LOT	1
2.32	Vendor Documentation as per VDRL	LOT	1
2.33	Quality Assurance	LOT	1
2.34	Third party certification	LOT	1
3.0	**MULTI-CABLE TRANSIT**		

Item No.	Description	Unit	Quantity
3.1	Design, Engineering, Manufacturing, Assembling, Supply, Installation, Testing & Commissioning of multi cable transit with required number of blocks and frames. SS 316 Frame. Vendor shall decide MCT size and quantity based on cables to Central Control Room	LOT	1
4.0	**INSTRUMENTS**		
4.1	Supply, Installation, Testing & Commissioning of Shutdown Valves	NOS.	17
4.2	Supply, Installation, Testing & Commissioning of Control Valves	NOS.	6
4.3	Supply, Installation, Testing & Commissioning of Motor Operated Valves	NOS.	13
4.4	Supply, Installation, Testing & Commissioning of Motor Operated Valves (Local control panel with push button)	NOS.	4
4.5	Supply, Installation, Testing & Commissioning of Level Transmitters - DP type	NOS.	4
4.6	Supply, Installation, Testing & Commissioning of Level Transmitters - Radar type with Remote Display Unit	NOS.	16
4.7	Supply, Installation, Testing & Commissioning of Level Indicator - Float and Board type	NOS.	2
4.8	Supply, Installation, Testing & Commissioning of Level Transmitters - Reflex type	NOS.	4
4.9	Supply, Installation, Testing & Commissioning of DP type Flow Indicator	NOS.	1
4.10	Supply, Installation, Testing & Commissioning of Flow element (Orifice)	NOS.	1
4.11	Supply, Installation, Testing & Commissioning of Rotameter type Flow Indicator	NOS.	2
4.12	Supply, Installation, Testing & Commissioning of Coriolis type flow meter - fiscal flow meter	NOS.	2

Item No.	Description	Unit	Quantity
4.13	Supply, Installation, Testing & Commissioning of Pressure Transmitters	NOS.	1
4.14	Supply, Installation, Testing & Commissioning of Differential Pressure Transmitters	NOS.	4
4.15	Supply, Installation, Testing & Commissioning of Pressure Indicator	NOS.	2
4.16	Supply, Installation, Testing & Commissioning of Temperature Element and Temperature Indicators	NOS.	11
4.17	Supply, Installation, Testing & Commissioning of Pressure Safety Valves	NOS.	10
4.18	Supply, Installation, Testing & Commissioning of Temperature Element with Transmitter	NOS.	22
4.19	Supply, Installation, Testing & Commissioning of Magnetic type flow transmitter	NOS.	1
4.20	Installation of Loose Supplied Third Party Panels in Control Room (LP Gas Compressor Control Panel Train A and Train B, STP Control Panel, WTP Control Panel, ETP Control Panel, Burner Management System A and B). Panels dimensions shall be 1200mm(L) x 2200mm(H) x 600mm(D).	LOT	1
4.21	Supply, Installation, Testing & Commissioning of Electronic Mimic Panel with large display screen (52”)	NO.	1
4.22	Supply, Installation, Testing & Commissioning of Ambient Air Quality Monitoring System. AAQMS shall consist of CO & CO2 analyser, NO, NO2 & NOx analyser, Suspended particulate measurement analyser, PC based data logger, calibrators, calibration cylinders and zero gas generators. Gas Filter Correlation principle.15” LED Display shall be provided.	NO.	1
5.0	**INSTRUMENT TUBE AND FITTINGS MTO**		
5.1	Supply, installation, testing and commissioning of Tube and Fittings as per MTO	LOT	1

Item No.	Description	Unit	Quantity
6.0	**INSTRUMENT JUNCTION BOXES**		
6.1	Supply, installation, testing and commissioning of Ex 'd' Junction Box - Aluminium Casting Alloy LM6	NOS.	16
7.0	**INSTRUMENT CABLE GLANDS**		
7.1	Supply, installation, testing and commissioning of Nickel plated brass Double compression type Cable Glands (1/2" (M20) - 867 Nos., 1 " (M25) - 50 Nos., 1 1/4" (M32) - 306 Nos., 1 1/2" (M40) - 40 Nos., 2" (M50) - 168 Nos.) Cable glands Explosion proof certified to NEMA 7.	LOT	1
8.0	**FIRE AND GAS DETECTORS/DEVICES**		
8.1	Supply, installation, testing and commissioning of UV/IR Flame Detectors	NOS.	6
8.2	Supply, installation, testing and commissioning of Point type Gas Detectors	NOS.	6
8.3	Supply, installation, testing and commissioning of Open Path Gas Detectors	NOS.	3
8.4	Supply, installation, testing and commissioning of Electrical Operated Hooters	NOS.	2
8.5	Supply, installation, testing and commissioning of Manual Operated Hooters	NO.	2
8.6	Supply, installation, testing and commissioning of Manual Call Points. Manual call points shall be addressable type	NOS.	15
9.0	**TELECOM EQUIPMENT AND SYSTEM & ITS ACCESSORIES**		
9.1	Supply, installation, testing and commissioning of 6 Nos. of outdoor PTZ CCTV Cameras and Cables & its accessories including NVR. Bidder shall consider hardwares required to include features for remote operation of particular PTZ Camera and operated. Bidder shall select and supply cables	LOT	1

Item No.	Description	Unit	Quantity
	between control room FOP and CCTV Cabinet.		
9.2	Supply, installation, testing and commissioning of 6 Nos. of Fibre Optic Patch Panel integral with Power Over Ethernet Switch.	LOT	1
9.3	Supply, installation, testing and commissioning of separate CCTV 52” screen at CCR	NO.	1
9.4	Supply, installation, testing and commissioning of 24” monitor at Installation Manager & security room	NO.	2
9.5	Walkie & Talkie (Intrinsic Safe) - Quantity - 4 Nos.	LOT	1
9.6	Enclosure for Fiber Optic Patch Panel and Ethernet Switch (Outdoor)	NOS.	6
10.0	**INSTRUMENT CABLES**		
10.1	Design, Supply and laying of 250V grade, single/multi-pair/core cables Type - Flame retardant, IS cables, Single Pair, Twisted, Screened, Armoured Cable with Overall Shield. Conductor - Annealed tinned copper Conductor Resistance - As per BS-EN-50288 Part 7 Conductor Size - Minimum 1.5Sq.mm Insulation - Extruded polyethylene (PE) as per EN-50290-2 Conductor Color - Pairs : White(+) & Black(-) Screening - Glass mica/PETP tape with the metallic side down helically applied with min 25% overlap Shield thickness shall be as per IEC 60092. drain wire contact with Aluminium side of the shield. Armour -Galvanised steel Outer Sheath - Extruded flame retardant PVC IEC-332, Type ST-2, 90°C as per IS-5831 Outer Sheath Color - Light blue		

Item No.	Description	Unit	Quantity
10.2	Flame Retardant - 1Px1.5	MTR	960
10.3	Flame Retardant - 2Px1.5	MTR	3750
10.4	Flame Retardant - 4Px1.5	MTR	500
10.5	Flame Retardant - 6Px1.5	MTR	537
10.6	Flame Retardant - 8Px1.5	MTR	2721
10.7	Flame Retardant - 12Px1.5	MTR	8368
10.8	Flame Retardant - 16Px1.5	MTR	7111
10.9	Flame Retardant - 18Px1.5	MTR	565
10.10	Flame Retardant - 24Px1.5	MTR	20867
10.11	RS-485 - 2P 22/7 AWG	MTR	3500
10.12	CAT-6 -4P 23AWG	MTR	300

Item No.	Description	Unit	Quantity
10.13	Design, Supply and laying of 250V grade, single/multi-pair/core cables Type - Fire resistant, IS cables, Single Core Amoured Cable with Overall Shield. Conductor - Annealed Electric copper, Class II (7 Stranded) Conductor Size - Minimum 1.5Sq.mm Insulation - Polyvinyl chloride type 'C' as per IS 5831 Conductor Color - Pairs : Black(+) & blue(-) Screening - Glass mica/PETP tape with the metallic side down helically applied with 25% overlap Shield thickness shall be as per IEC 60092. drain wire contact with Aluminium Armour - Galvanised steel Outer Sheath - Extruded flame retardant PVC IEC-332, Type ST-2, 90°C as per IS-5831 Outer Sheath Color - Light blue		
10.14	Fire Resistant - 1Px1.5	MTR	2040
10.15	Fire Resistant - 2Px1.5	MTR	2010
10.16	Fire Resistant - 4Px1.5	MTR	960
10.17	Fire Resistant - 6Px1.5	MTR	1373
10.18	Fire Resistant - 8Px1.5	MTR	2582
10.19	Fire Resistant - 12Px1.5	MTR	3361
10.20	Fire Resistant - 16Px1.5	MTR	7452
10.21	Fire Resistant - 24Px1.5	MTR	15468

Item No.	Description	Unit	Quantity
10.22	Design, Supply and laying of 250V grade, single/multi-pair/core cables Type - Fire resistant NON-IS cables, Single Traid Twisted Screened, Armoured Cable with Overall Shield. Conductor - Annealed tined copper Conductor Size - Minimum 1.5Sq.mm Insulation - Extruded polyethylene (PE) as per BS-EN-50290-2 Conductor Color - Black, blue & brown Screening - Glass mica/PETP tape with the metallic side down helically applied with 25% overlap Shield thickness shall be as per IEC 60092. drain wire contact with Aluminium Armour -Galvanised steel Outer Sheath - Extruded flame retardant PVC IEC-332, Type ST-2, 90°C as per IS-5831 Outer Sheath Color - Black		
10.23	Fire Resistant - 1Tx1.5	MTR	2067
10.24	Fire Resistant - 12Tx1.5	MTR	975
10.25	Design, Supply and laying of CCTV Cables CAT-6 cables shall be 250 MHz Cat.6, 4 Pair Shielded Twisted Pair cable. Solid copper conductors of size minimum 23 AWG shall be provided, Polypropylene/ Polyethylene insulated (Nominal thickness 0.8 mm), shielded with aluminium polyester tape with 0.5 mm tinned copper drain wire, inner sheath of extruded PVC ST-2, and outer sheath of extruded FRLS PVC ST-2		
10.26	4P X 23 AWG, Power Over Ethernet (POE)	MTR	660

Item No.	Description	Unit	Quantity
10.27	Design, Supply and laying of CCTV FO Cables Multimode, Jelly filled loose tube with central strength member, each fibre & buffer uniquely identified by colour code. inner sheath/ moisture barrier- 1.0mm thick polyethylene compound with 0.2mm thick aluminium foil bonded to the inner surface to act as moisture barrier. armouring-2 layers each 0.2mm thick galvanised steel tape applied helically or corrugated steel tape of 0.15mm thickness. outer sheath-HDPE min. thick 1.5 mm.		
10.28	2 Core FO Cable	MTR	65
10.29	6 Core FO Cable	MTR	2364
11.0	**CABLE TRAY**		
11.1	Design, Supply and laying of Cable trays with covers made up of FRP, corrosion resistant and flame retardant 3mm thick heavy duty, straight cable tray with outside rail for outdoor areas. Straight sections shall be provided in standard lengths of 3m.All associated cable tray fittings shall be of the same manufacturing characteristics as the straight sections. All splice plates and assembly hardware shall be SS 316.		
11.2	CABLE LADDER - 2 X VERTICAL ADJ.	NO.	1
11.3	CABLE LADDER - 300W x 150H TRAY	MTR	357
11.4	CABLE LADDER - 450W x 150H TRAY	MTR	76
11.5	CABLE LADDER - 600W x 150H TRAY	MTR	203
11.6	CABLE LADDER - INNER COMBI-RISER R=300	NOS.	12
11.7	CABLE LADDER - LEFT REDUCER PART (600>300)	NO.	1

Item No.	Description	Unit	Quantity
11.8	CABLE LADDER - OUTER COMBI-RISER R=300	NOS.	13
11.9	CABLE LADDER - RIGHT 90 DEG FLAT ELBOW	NOS.	3
11.10	150 SS - INNER COMBI-RISER R=300	NOS.	9
11.11	150 SS - OUTER COMBI-RISER R=300	NOS.	9
11.12	PERFORATED TRAY - 100W x 50H 30 DEG 305 OUTSIDE RADIUS ELBOW	NO.	1
11.13	PERFORATED TRAY - 100W x 50H 45 DEG 305 INSIDE RADIUS ELBOW	NO.	1
11.14	PERFORATED TRAY - 100W x 50H 45 DEG 305 OUTSIDE RADIUS ELBOW	NO.	1
11.15	PERFORATED TRAY - 100W x 50H 90 DEG 305 INSIDE RADIUS ELBOW	NOS.	7
11.16	PERFORATED TRAY - 100W x 50H 90 DEG 305 OUTSIDE RADIUS ELBOW	NOS.	7
11.17	PERFORATED TRAY - 100W x 50H HORIZONTAL 90 DEG BEND	NOS.	4
11.18	PERFORATED TRAY - 100W x 50H TRAY	MTR	300
11.19	PERFORATED TRAY - 150W x 100H 45 DEG 305 INSIDE RADIUS ELBOW	NOS.	3
11.20	PERFORATED TRAY - 150W x 100H 45 DEG 305 OUTSIDE RADIUS ELBOW	NOS.	3
11.21	PERFORATED TRAY - 150W x 100H 90 DEG 305 INSIDE RADIUS ELBOW	NOS.	3
11.22	PERFORATED TRAY - 150W x 100H 90 DEG 305 OUTSIDE RADIUS ELBOW	NOS.	3

Item No.	Description	Unit	Quantity
11.23	PERFORATED TRAY - 150W x 100H HORIZONTAL 90 DEG BEND	NO.	1
11.24	PERFORATED TRAY - 150W x 100H TRAY	MTR	273
11.25	PERFORATED TRAY - 200W x 100H 90 DEG 305 INSIDE RADIUS ELBOW	NOS.	8
11.26	PERFORATED TRAY - 200W x 100H 90 DEG 305 OUTSIDE RADIUS ELBOW	NOS.	9
11.27	PERFORATED TRAY - 200W x 100H 90 DEG 610 INSIDE RADIUS ELBOW	NO.	1
11.28	PERFORATED TRAY - 200W x 100H TRAY	MTR	301
11.29	PERFORATED TRAY - 200W x 100W X 100H CONCENTRIC REDUCER	NO.	1
11.30	PERFORATED TRAY - 50W x 50H TRAY	MTR	306
12.0	**INSTRUMENT BULK MTO**		
12.1	Supply, installation, testing and commissioning of Instrument bulk MTO	LOT	1
13.0	**ANCHOR BOLTS**		
13.1	Design, Engineering, Manufacturing, Assembling, Supply & Installation of Anchor bolts for modular package (Container) and Steel foundation template for anchor bolt fixation shall be provided. Anchor bolts and Steel template shall be provided by MPC Contractor 60 days prior to delivery of package. Location: Container	LOT	1

NOTES :

1. *Container quantity shall be decided based on Vendor Control Room layout*
2. *Quantity estimation required for complete system operation is by Bidder*
3. *All interconnecting cables between various system within control room shall be by Vendor scope*
4. *Bidder shall consider the following as part of their scope*
   a. *Receipt of material from warehouse*
   b. *Shifting material to site by use of crane/ forklift etc., shall are covered*
   c. *Installation, testing, commissioning, PGTR.*
   d. *Scaffolding as required*
   e. *Bidder shall provide unit rates for all instrumentation items supplied*
   f. *Bidder shall provide installation and service unit rates*

For further details, refer to Terms of Reference (TOR)

3.3 GENERAL REQUIREMENT

a) Instrumentation and Control System design shall be as per statutory requirements of OMR-2017, OISD and other Govt. laws and by-laws for the entire installations and also as per the specified codes and standards (national & international).

b) Latest editions of the Codes and Standards shall be followed.

c) Selection of Instrumentation Control System with the following concepts:

d) The operation and control of the process facility shall be fully automatic. Operators shall not be required to control the process parameters locally by executing manual operations in the field and they shall only monitor and supervise the control of the plant from local as well as remote location.

e) The instrumentation and control philosophy shall be based on online integrated advanced communication which takes real-time data of the process, it allows the operator to control, monitor and operate the plant remotely.

f) All materials and equipment furnished shall be new and unused, of current manufacture and the highest grade and quality available for the required service, and free of defects.

g) The software platform for DCS, ESD/F&G System shall be seamless common Engineering and Operator Interface with various level of configurable Access Password protection and Audit Trail Functionality.

h) The software platform for DCS and ESD/F&G System shall support Windows Server latest version and Windows Operating System latest version in all Engineering and Operator Station. Support for Windows latest version is mandatory. Non-Windows platforms for OS/ES shall not be acceptable.

i) The Vendor shall furnish high quality Container and accessories meeting the requirements of this specification and industry standards.

j) The Container shall be self-supporting and suitable for mounting on concrete pillars / Floor / Pedestal / steel support structure. The enclosure shall be designed for Outdoor installation and shall be constructed of reinforced sheet metal. Degree of protection shall be IP-54.

k) Enclosure shall be designed to permit easy accessibility to the equipment and to provide maximum protection for maintenance personnel.

l) The exterior of the enclosure shall consist of mainframe of enough rigidity as lifting frame as well as for foundation on its permanent position at the site. The enclosure after construction shall be required to withstand the specified above site conditions.

m) All external cables shall enter from bottom of the container. Within container cables shall be routed below panels and cut-out to be considered in floor. For cable entry, floor openings shall be provided at appropriate locations of adequate size. The floor openings shall be constructed as removable plates for easy removal at site.

n) All the required approvals shall be in the scope of the MPC contractor and all the required statutory fee and any other required charges, coordination charges, professional charges, etc. shall be in the scope of the MPC contractor.

o) All components included in this specification are not explicitly identified and/or listed herein, these shall be supplied under this contract to ensure completeness of the system and facilitate proper operation and easy maintenance of the control system.

p) All services necessary for the erection, testing and commissioning and all instruments / services required for carrying out performance testing of all items of the plant electrics covered under this specification shall be arranged by the MPC Contractor.

q) MPC Contractor has to prepare and submit all design documents drawings / as-built drawings, calculations and vendor drawings for the approval to the OWNER.

r) Surface preparation and painting

s) Shop inspection and testing, Factory Acceptance Tests (FAT)

t) Packing, marking and forwarding

u) Spares and Special tools

- Mandatory spares as required
- Priced list of 2 year operational spares for smooth operation of the system / equipment.
- Start-up and commissioning spares as required.
- Maintenance tools and tackles including special tools.

v) NDE for the fabricated containers (if applicable) as per ITP & pre-commissioning of all E & I Items and completing all Inspection Test Report Forms

3.3.1 CONTAINERIZED CONTROL ROOM

The bidder shall have designed, engineered, manufactured, assembled control system panels and associated operator consoles, annunciators, printers, CCTV, fire and gas detectors, fire suppression system, hooters and alarm panels etc,. in a ready made / custom built container and did interconnection wiring, conducted testing and supplied least one number as prefabricated control room to any central government / state government/ PSU or any reputed private organization in the last five years.

3.3.2 BOUGHT OUT ITEMS

Bidder shall supply field instruments from their manufacturing range if available or purchase from sub vendors, the major items like Transmitter, control valve, on/off valve, Remote Operated Shutdown Valve, Motor Operated Valve, Shutdown valve, blowdown valve, PSV, Float and Board Level Indicator, junction boxe, cables, cable accessories, tubing, tube fitting, cable trays and tray fittings, telephones and walkie talkies from reputed prospective original equipment manufacturer/supplier who already have past track record of supplied similar or higher rated Instrumentation items specified in tender to oil & gas installation in the last 5 years. Bidder shall obtain from sub-supplier/sub vendor and submit the copies of purchase orders, completion certificates and related documents as evidence.

3.3.3 INSTALLATION WORK

Bidder shall have executed similar installation work at any oil & gas fields, covering installation, cabling, wiring, termination, pre commissioning, testing, commissioning of various Instrumentation items like control systems (DCS/PLC/ESD/FSD) ,

transmitters, gauges, SDV, BDV, PSV, local control panels, impulse line fabrication and erection, fire and gas detectors installation, cable tray installation and proving supports for transmitters, cable trays, cable laying, cable glanding, wiring and cable termination and other miscellanies works. Bidder shall produce the copies of purchase orders and completion certificates either done separately or part of any supply contract or executed through any sub contractor.

Bidder shall note that even though the tender contains supply of bought out items and also field installation Work Company / EPCM would like the warranty/ guarantee/workmanship for this entire package shall be with the sole responsibility of the MPC bidder. Bidder shall submit the credentials of their own, sub vendor, bought out items suppliers and completed purchase orders etc. along with the bid.

Bidder shall have type test certificates fulfilling SIL requirement, redundant configuration, system reliability from a test house/laboratory accredited by National Accreditation Board for testing and calibration laboratories (NABL)India not older than five years from the date of opening of the technical bid.

3.4 CONTAINERS

3.4.1 GENERAL

Complete Control system and its accessories & loose supplied panels as required shall be installed within 40'x8' Containers. Container quantity shall be decided based on Vendor Control Room layout and supplied.

3.5 ARCHITECTURAL MATERIALS, FINISHES AND CONSTRUCTION

3.5.1 FRAME

- The building frame shall be constructed as a rigid, self-supporting steel structure. The frame shall be welded to the skid.
- All mill certificates for the steel shall be submitted.
- The building frame and skid shall be structurally adequate to sustain specified loading, including transportation and lifting, without depending on the wall and roof unless using crimped plate wall and roof design.
- Girts and purlins shall be flush with the exterior face of framing members.
- The roof framing and the building columns shall be designed to support any additional dead load suspended from the roof such as air conditioning duct, false

ceiling, cable trays, electrical buses, light fixtures, cable riser compartment cable tray / grating and piping.

- Openings for equipment, ducting, conduit, windows, doors, and other purposes shall have structural frames. Frames shall be provided for such openings in both the walls and roof.
- The building floor framing (skid) shall be fabricated from I-shaped steel beams to form a rigid rectangular frame. The frame shall be braced with cross members as required to support the equipment installed in the building.
- All primary bolted connections shall be furnished with high strength bolts.
- All primary bolted connections shall contain at least two bolts.
- All fabrication welding and inspection of structural steel shall be in conformance with this Specification and / or attached specifications.

3.5.2 SHELL

The outer shell of the Container Building shall be manufactured with atmospheric corrosion resistant steel. The main load bearing members such as posts, base members, bottom and top side rails, end rails headers are pressed formed profiles of appropriate geometry. Corner Castings shall be provided at all eight corners. All hollow section open ends are to be sealed to prevent corrosion inside.

The door can be locked with the door locking device. The doors can be effectively sealed against water ingress in closed condition by using EPDM gasket profiles. The door panels internal shall be made of 1.6 mm thick aluminum sheets with sufficient frame work and PUF insulated for thermal protection. The shell structure should be rigid enough to withstand handling rigorous transportation hazards etc. and able to stand flexing/distortion even when placed on uneven ground. Doors are to be provided with suitable sheds on the top of door & window openings, to prevent seepage of water when the door is open.

3.5.3 WALLS

External walls shall be vertically corrugated atmospheric corrosion resistant steel or equivalent. The corrugated panels shall be continuously butt welded to form entire side wall and assembled side wall is continuously welded to peripheral frame members.

3.5.4 ROOF (SELF DRAINING TYPE)

The roof shall be manufactured from min 6 mm corrugated atmospheric corrosion resistant steel equivalents. All the corrugated panels have 6-9 mm chamber at the centre for draining

rain water. All the panels shall be continuously seam welded and shall be welded to the peripheral members. Roof shall be provided with adequate slope to allow the accumulated dusts to wash down. Roof sheet shall be plain also.

3.5.5 SURFACE PRE-TREATMENT & PAINTING

Painting shall be done with epoxy paint considering outdoor duty (to be installed under direct sun and rain), highly polluted humid and saline atmosphere loaded with sand & dust particles and strictly as per environmental requirements.

All paint including primer and finished paint shall be epoxy based only. The surface preparation and painting shall be best suited for the application and environment. Detail painting procedure, including surface treatment, adopted by the supplier should be submitted for purchaser review.

Painting shall be of approved colour.

3.5.6 FLOORING SYSTEM

On frame 18mm thick marine plywood / cement board shall be fixed /anchored. PVC vinyl flooring shall be fixed on the panel and bottom of the container shall be enclosed with GI sheet.

Rubber mate shall be provided with anti skid grips.

3.5.7 INSULATION

Container Building side and & end walls, shall be insulated with 50 mm thick Rockwool of A60. The insulation material will have a density in the range of 100 kg/m3. Roof will have an insulation of 50 mm thickness.

3.5.8 INNER PANELING

The interior shall be aesthetically finished so as to give a pleasing appearance with high quality workmanship. All joints as well as vertical and horizontal corners shall be neat and smoothly finished.

3.6 DISTRIBUTED CONTROL SYSTEM

a) A control system (DCS) is a computerized control system for a process plant usually with a large number of control loops, in which controllers are distributed throughout the system, but there is central operator supervisory control. Marshalling cabinet panels provide cross wiring functionality between field instruments and the control system.

b) The system cabinet is a cabinet that is designed to accommodate DCS electronics such as controller, communication card, power supply card, I/O Card etc.

c) Control Desk shall provide user friendly, management capabilities with automatic generation of daily logs/reports, etc,. Consoles shall be supplied with operator console furniture.

d) The DCS Distributed control system shall have a global distributed relational real-time data-base.

e) The system shall be microprocessor based having functional distribution and data base distribution sub-system wise. The system design shall ensure that:

i. All the functions shall be performed in an integrated manner.

ii. The access to the distributed data base is available system wise.

f) This system shall also have networking capability with other systems distributed geographically in the various units of a plant, over a plant wide information network such as Ethernet or other industrially recognized open networks.

g) The DCS shall be of open architecture. The communication protocol shall be open type and shall be compatible for any third party integration in future. Instrumentation and control system with a provision for accommodating 20% extra space for adding I/O modules in future.

h) HART (latest version) based DCS system shall be provided.

i) Instrumentation for automatic operation and safe shutdown shall be as per IEC61508 & IEC61511 standards. All safety related instruments shall be SIL-2 rated as a minimum.

j) The system shall be of modular construction and expandable in future by adding additional modules. The type of modules shall be kept to the minimum possible in order to have interchangeability and low inventory. A redundant high-speed communication network shall be employed as Process Control Network to interconnect the DCS modules.

k) Communication interface between Server/ DCS Controller and Operator/Engineering Workstation shall not be based on Proprietary protocol.

l) Processor and IO Modules used in DCS, ESD/F&G System shall be from same Family so as to have better logistic management. The IO Cards and Processor modules shall be interoperable between the DCS, ESD/F&G systems as much as possible. I/0 modules shall communicate with processor modules serially either through backplane or through I/O communication network. I/O network shall always be redundant. Data transfer through separate hardwired connections shall not be acceptable. Each output channel (conventional

and HART) must maintain its own failure mode value (Output Set Predefined), which is automatically executed upon detection of a communication failure between process and output module.

3.7 CONTROLLER AND IO SUBSYSTEMS

a) The Controllers, IO Modules, Communications cards, power supply, and input output modules for the operation of the plant shall be located in the Central Control room (CCR). Healthiness of each module will be monitored and an alarm shall be generated on operator stations in case of failure of any module.

b) Process controllers shall perform data acquisition and regulatory control functions. They shall have the facility to allow the operator to perform manual control of the controller output from the Operator station.

c) The controller shall have multiple cycle time configurations for different type of loops.

d) Intrinsic safety barriers shall be provided for all AI, AO and DI.

e) 20% spare IOs shall be considered.

3.8 ANALOGUE INPUT / OUTPUT MODULES (CONVENTIONAL)

The input module shall meet the following requirements:

a) It shall accept 4-20mA isolated input with maximum input resistance of 250 ohms or 1—5VDC isolated input with input resistance more than 500 K Ohms.

b) The input module shall support field powered transmitter i.e. 2-wire, 3-wire or 4 wire system.

c) Input faults shall be detected by I/O module. When external isolators / relays are provided for each I/O channel, then detection of these faults in the I/O modules are not applicable.

d) The output module shall provide 4-20mA output driving up to 600 Ohms of total loop resistance at 24V DC.

e) The system shall provide 24V DC for loop powered 2-wire transmitter and shall also loop power the 2-wire outputs.

f) Input / Output module shall not have more than 8 inputs or outputs.

3.9 ANALOGUE INPUT / OUTPUT MODULE WITH HART

a) The Analogue Input /Output modules for HART signal shall meet all requirements for conventional Analogue Input/output Modules.

b) Input / Output shall fully support the HART communication.

c) Intrinsic safe barrier shall be provided for all AI/AO IOs

3.10 OTHER COMMUNICATION INTERFACE MODULES

a) Interface modules shall be capable of communicating with RS-232C, RS-422, RS-485, TCP/IP (Ethernet), and IEC61850 protocol.

3.11 DISCRETE DIGITAL INPUT / OUTPUT MODULE

a) Digital input module shall be capable of detecting close or open status of powered or potential free contacts. The interrogation voltage of the contacts shall be 24VDC or as per selected barrier for barrier powered contacts.

b) The input module shall also be suitable to accept inputs from proximity switches or from open collector output from proximity input barrier.

c) The digital output module shall provide output contact rated for 110VAC, 5 Ampere or 110VDC, 0.5 Ampere.

The type of contact output i.e., normally opens or normally closed shall be user selectable.

d) Maximum number of inputs or outputs shall not exceed 32.

e) Intrinsic safe barrier shall be provided for all DI IOs.

3.12 DATA COMMUNICATION LINK

a) Redundant data communication link shall be provided to interface the operator PC located in the central control room with system "Data Highway". (Control- Network). The system Data Highway (Control Network) shall be redundant. The system Data Highway shall operate on 10/100 MBPS BPS IEEE 802.3, TCP / IP protocol. The system Data Highway shall have bus topology with token passing master less fully deterministic protocol.

3.13 GRAPHIC DISPLAY

a) It shall be possible to display dynamic graphic of different sections of plant on the operator console screens.

b) Graphic displays shall be field configurable only through engineering key—board with standard / user defined graphic symbols.

d) Graphic displays shall be interactive type through which it shall be possible to control the process. It shall also be possible to send motor start/stop and shutdown valve open/close commands, from this display.

e) It shall be possible to view the process variable and alarm points and view and change set point value, manipulated variable, controller mode etc. from the graphic display. Also

rotating machinery (i.e. compressor / pump) status and valve status shall be displayed on the graphic display with different colors.

f) Various colors used in the generation of graphics like color of the process lines, utility lines, Instrument signal lines and event modifier conditions shall be finalized during detailed engineering. The colors used to identify event modified conditions shall be defined during detailed engineering.

g) It shall be possible to go from any graphic page to related graphic pages or any group view or alarm summary in single key stroke using soft key function. ESD/ F&G Graphic Pages shall be accessible from each and every OS & ES. All access to ESD/F&G Control Action shall be password protected.

3.14 LAPTOP

Intel Core i7 Processor (Dual Core, 3.5GHz, 3MB Cache, w/HD Graphics 4400)
8GB 1600MHz DDR3 Memory
1TB 3.5inch Serial ATA (7,200 Rpm) Hard Drive
8X Slimline DVD+/-RW drive
Intel(R) Core I7 Label / Internal Dell Business
Audio Speaker
USB Optical Mouse
US English (QWERTY) Dell Keyboard
Windows 10 Professional, English
14" Display

3.15 CLOSED CIRCUIT TELEVISION WINDOW DISPLAY

a) Separate CCTV 52" screen at CCR and two (2) nos. 24" monitor shall be installed at Installation Manager & security room at the entrance gate for plant monitoring.

3.16 ALARM HISTORY

a) The history of alarm conditions shall be maintained in the database for alarm history display and printed on shift wise basis for the parameters.

3.17 ESD/F&G SYSTEM

a) Safety System shall also ensure that in case of any emergency, may be due to process excursions/deviations or external sabotage like fire, etc,. the plant shall be brought to a safe

state and the incoming process fluids to the plant shall be isolated by shutting down the flow line at both the ends i.e. well head end and manifold end in the plant simultaneously.

b) Automatic fire detection and suppression systems shall be implemented by using flame detectors, gas & smoke detectors and automatic TMR/QMR based ESD/F&G PLC (Programmable logic controller) based fire suppression systems.

c) Each major unit of the plant shall be controlled by PLCs. DCS/PLC shall have HMI facility so that operator shall be able to generate the commands/ view status at the Operator Work Stations.

d) The PLCs shall be provided with redundancy at processor, power supply and communication level.

e) The DCS and ESD/F&G PLC in central control room shall have Control system cabinet, Marshalling cabinet, Engineering cum Operator Workstation, PC, A4 and A3 Printers and other hardware accessories for continuous monitoring, logging and controlling various critical parameters of the process. Engineering workstation shall be additionally configured for working as Operator Workstation also.

f) The DCS / Master ESD/F&G PLC in central control room shall be provided with SCADA software with all available features. Control System Supplier needs to specify all the necessary Software licenses along with the supply.

g) DCS and ESD/F&G PLC shall have provision for connectivity to Central SCADA system at DULIAJAN.

h) Communication tower (steel structure only) with concrete platform shall be provided for installing VSAT antenna for data communication / ERP connectivity in nearby free ground area of radius of approx. 12 m.

i) The system shall be microprocessor based and shall be composed of standard hardware and system software, which can be configured to meet the stated requirements.

j) The PLC shall be OPC enabled so that it can be integrated with other third party control system

k) Memory shall be non-volatile. However in case volatile memory is provided, battery backup shall be provided with a minimum of 15 days lifetime to keep the program storage intact. A battery drain indication shall be provided at least one week before the battery gets drained. A potential free contact shall be provided for hardwired annunciation in the central control room.

l) Wherever dual redundant processor is specified, redundancy shall be provided in such a way that in case of failure of the main processor, the standby shall take over automatically.

m) The changeover shall bump less (within 10ms) and the system shall be fail proof. Redundancy shall be provided for complete processor system including CPU, memory power supply and communication sub system.

n) Logic Solver shall support all programming languages viz. FBD, Ladder, Instruction list for Logic Implementation in Safety Function as per IEC-61131 Standards.

o) Redundancy shall be provided for complete processor system including CPU, Memory Power supply and communication subsystem. However Power Supply for IO sub system shall be separately redundant. Common Power supply for Processor and I/O modules shall not be acceptable.

p) All Electronic cards shall be G3 compliant with conformal protective coating for source of manufacturing (Harsh environment) requirements as per ISA S-71.04 Table 3 / Class 3 (Heavy Contamination) requirements as per 645-4 IEC / equivalent national or international standards.

q) The system shall have very high noise immunity as per EN-61000-6-4 and EN-61000-6-2 standards. The system shall ensure safe and reliable operation when subjected to electrical radio frequency interference and Electro-magnetic disturbances expected in a plant.

r) The system shall be capable to handle Altitude, Shock and Vibration as per Industry Standards.

s) All printed circuit boards shall be able to removed or installed while the system is operating without causing hardware damage or system errors.

t) On-line replacement of any module shall be possible in such a way that removal and addition of a module shall be possible without de-energizing the system. Further there shall not be any interruption the system or the process while replacing a faulty module wherever redundant modules are provided.

u) The scan time of the PLC shall be 250 mille-Seconds or better. Scan time of PLC is defined as the cycle time taken by the system to read input, process input executing logic, and update control output for all the logics configured within the system. Other activities like diagnostic routines, output/dump of data to peripherals, or any other activity that consume processor time shall also be accounted while computing scan time

v) The detail design, installation, commissioning and testing, pre-start-up Safety Review, PLC start-up operation, Maintenance and periodic functional testing and PLC commissioning shall be as per IEC 61508.

3.18 ALARM AND SEQUENCE OF EVENT FUNCTIONALITY

a) First-out indication shall be provided for alarms.

b) System alarms generated by the PLC to indicate system malfunction shall be annunciated in the DCS.

c) Consideration shall be given to implement the required alarm functionality from the application program of the PLC, allowing the use of simple devices in panels. The same signals can then also be used to map through onto the DCS with the same functionality.

d) Sequence of Events (SOE) handling shall be implemented so that time and date stamping provides a correct sequence for troubleshooting. The PLC shall perform SOE recording but the display shall be via the Engineering workstation.. The PLC shall be provided with access to the local printer for printing SOE logged data, program listings, systems alarms and logic & C&E chart.

3.19 TELECOMMUNICATION SYSTEM

a) Plant shall be provided with latest Security Control System. The system shall have surveillance cameras placed along the periphery of the plant and at all entrance points which shall be monitored from security room, installation manager room and Control room. Video recording shall be done centrally or at a remote location through IP network with a facility to take backup in standard video format.

b) Intrinsically safe wireless walkie-talkie sets with license shall be provided by Control System Supplier for interplant communication.

3.20 OTHER REQUIREMENTS

MPC Vendor shall assemble DCS, ESD and F&G Systems along with all marshalling, system, network cabinets & do the internal wiring & install inside containerized CCR. MPC shall carry out the following.

a) Shop inspection and testing, Factory Acceptance Tests (FAT)
b) Dismantling and provide temporary support for transportation as required.
c) Packing, marking and forwarding
d) Transport Insurance
e) Reassemble at site as required
f) List of consumables
g) Assistance for one month PGTR

3.21 SPARE REQUIREMENT

a) I/O racks shall contain 20% installed spare I/O modules.

b) Module types shall be provided in the approximate ratio of non-spare types and distributed throughout I/O racks.

c) Other system components to support installed spare I/O, such as I/O power supply capacity, terminal blocks, I/O cables, I/O communications, etc., shall be installed with capacity for all installed I/O plus an additional 20% spare capacity.

d) If terminal blocks are pre-wired to the process I/O, then these shall also be prewired to the spare I/O.

e) I/O Racks shall have an additional 20% spare rack space without installed modules.

f) Processing modules shall be sized so that the average load uses no more than 60% of the processing capacity and memory. Historical storage shall have 75% spare capacity.

g) Estimating tools to calculate the expected processing and memory capacity usage shall be included with the system.

h) Cabinets that contain terminal blocks shall be provided with 20% spare terminal blocks. This is in addition to the requirements above.

i) Whenever relays & barriers are used to interface process input / outputs with the PLC,

j) 20% additional shall be provided as installed one. In addition, 20% spare space shall be provided in cabinets to install 20% additional relays in future.

k) Spares and Special tools

- Mandatory spares as required
- List of 2 year operational spares for smooth operation of the system/equipment.
- Start-up and commissioning spares as required.
- Maintenance tools and tackles including special tools.

3.22 CABLES

a) MPC Contractor shall supply, install, test and commission all the cables required for the system interconnection, single, multi-core/multi-pair cables from field JB to CCR as per Cable Schedule

b) The Cables shall be continuous between termination points and no intermediate cable joints shall be permitted. Multi-core cables shall be sized that they contain a minimum of20% spare conductors at the completion of design.

c) All multi-pair/core cables from other MPC Contractors junction boxes shall be supplied and installed.

d) All cable trays/ladders shall be supplied and installed appropriate to the weight and dimensions of the cable. Cable shall not be self-supporting at any point on the cable route other than at points where cable tray or racking is not possible or is impracticable.

e) Cables carrying data (i.e. instrument, signal, telecom etc.) shall not be routed in cable trays which carry power cables (other than 24 VDC).

f) Cable routing and installation shall be planned to ensure that the minimum bend radius of all cables on the route is observed. Tray and ladder junctions shall be designed to ensure that no cable is physically stressed beyond the design tolerance.

g) Distance between electrical tray/ladder and instrument tray and ladder are as follows:

- Medium voltage & Instrument - 600mm
- Medium voltage & low voltage – 300mm
- Low voltage & instrument – 300mm

h) Cables shall be supported by cable tray up to 300 mm from the cable entry.

i) Cable trays, ladder etc. shall be filled to a capacity of not more than 70% to ensure that future growth can be accommodated.

j) Cables intended to be used for analogue signal transmission services shall also include individual screen for each pair/triad.

4.0 PACKAGE ENGINEERING

MPC Contractor shall carry out the package engineering as detailed below:

a) The design life of the complete package shall be 20 years.

b) MPC Contractor shall develop package engineering based on the design basis, specifications, drawings, etc. attached. Basic engineering documents provided are for guidance and are minimum / indicative only. It is the responsibility of the MPC contractor to develop any missing information based on good engineering practices for completing the project in all respect meeting quality requirement and desired level of operational efficiency. The successful MPC Contractor shall carry out package engineering over and above of that mentioned in the tender, required to deliver the package with no extra cost. All such activities shall be vetted by EPCM consultant /OIL.

c) Control System engineering shall include but not limited to the Detail Engineering design, supply of hardware/software, Project requirement studies, Panel fabrication & Engineering, PLC Programming, Graphics Display, Internal integration and testing, commissioning, documentation and warranty. The proposed facilities shall be designed and executed on modular concept by MPC contractor.

d) All Engineering which forms a part of the project shall be approved by the EPCM consultant. MPC contractor has to prepare and submit documents, drawings, fabrication drawings, As-built drawings, calculations and information as requested in the tender document and as required for information/ review and approval. Fabrication work shall only be carried out based on Approved for Design / Construction drawings approved by the EPCM consultant.

e) MPC contractor to ensure that containerized central control room shall be sized and located in accordance with the overall plot plan attached in the Vol-II. The design of the modular package shall not exceed the package size specified in the overall plot plan.

f) MPC contractor shall design the modular package Equipment Layout considering the approaches for maintenance, emergency evacuation, fire fighting etc.

5.0 TECHNICAL REQUIREMENTS:

5.1 GENERAL

a) All possible efforts have been made to establish a link between the Basic Engineering, Scope of work, Design basis, Standard Specifications, Standards and Drawings so that the MPC contractor has clear cut frame work of guidelines within which the package engineering would be performed. Despite this, it may still be required to apply judgment and reason to certain areas based on experience and sound engineering practice to achieve desired results.

b) MPC contractor must understand and undertake clearly that it is the sole responsibility of the MPC contractor to complete all works in all respect leading to completion and make the plant ready for commercial operation. Codes and standards included shall be used as guidance and considered as the minimum requirement.

c) In case of any conflicting requirement of various chapters, which are part of this document following order of priority shall govern in general.

- Statutory regulations
- Design Basis
- Functional Specification
- Codes and standards

However, in case of conflict, it shall be referred to EPCM consultant for clarifications and the decision of EPCM consultant shall be final and binding on the MPC contractor without any cost and time implications.

d) The requirement of any statutory body like Tariff Advisory Committee, and Chief Controller of Explosive (CCE), Nagpur, India, Environmental Clearances, Factory Inspector, and Director General of Civil Aviation Authority (DGCA) etc. shall govern where these are more stringent than the requirement specified above.

e) Although the scope of work has been defined package wise, the MPC contractor would be required to interact with other MPC Contractors agencies working in the adjoining areas. It is essential to coordinate the interface through EPCM / OIL and when required to attain unhindered and smooth completion.

f) MPC contractor shall submit the progress report every fortnight or mutually agreed intervals.

6.0 MINIMUM DELIVERABLES:

List of documents to be submitted by MPC contractor during MPC Contract phase for review / approval by EPCM consultant /OIL [after award of contract] is listed in Annexure-1.

Documents specified in the VDRL are minimum requirements. MPC Contractor shall submit any other documents / drawings required for the completion of the project as per EPCM instruction.

Sl No	DOCUMENT DESCRIPTION
PROJECT MANAGEMENT	
1.	Master Document schedule (MDS) / Document Control Index (DCI) for all disciplines
2.	Organization Chart
3.	Vendor document register
4.	Technical query Register
5.	Planning Schedule
6.	Procurement Plan
7.	Manufacturing/Fabrication Plan and Procedure
8.	Progress Report (Weekly/fortnightly and Monthly)
9.	List of Sub-Vendors
INSTRUMENTATION	
1.	Instrument Data Sheets
2.	Instrument Index and IO List
3.	Requisition for quotation (RFQ), Technical Bid Evaluation & Purchase

	Specification for Long Lead Items
4.	Unpriced purchase order along with specification
5.	Bill of Material –DCS and ESD/F&G
6.	General Arrangement Drawings with dimensions, BOM, material of construction, instruments, weight, handling item details etc.
7.	Manufacturing / Fabrication Drawings
8.	CPU Loading Calculations – DCS
9.	CPU Loading Calculations - ESD & F&G
10.	Total Power and Instrument Load Calculation
11.	Heat Dissipation for Overall system for CCR
12.	System Configuration Drawing
13.	Cabinet General Specification
14.	Control Room Layout
15.	Schematic Diagram
16.	Wiring Diagram
17.	Loop Drawings – DCS
18.	Nest Loading & Io Allocation – DCS
19.	Factory Acceptance Test Procedure – DCS
20.	Interconnection Cable Schedule – DCS
21.	Functional Design Specification – DCS
22.	Functional Design Specification – ESD & F&G
23.	Sub System Functional Design Specification – DCS
24.	Graphic Hard Copy – DCS
25.	Data Sheet for Work Station / Monitor
26.	Data Sheet for Printer
27.	Data Sheet for Network Switch
28.	Data Sheet for Intrinsic Safety Barrier
29.	Data Sheet for Relays
30.	Data Sheet for 24VDC Power Supply Unit
31.	Data Sheet for Push Button & Lamps

32.	Site Acceptance Test Procedure/Report - DCS
33.	Site Acceptance Test Procedure/Report – ESD/F&G
34.	Earth Pit Drawing- – DCS and ESD/F&G
35.	Relay & instrument panel arrangement diagram
36.	Logic Diagrams
37.	As-built drawings
QUALITY CONTROL	
38.	Inspection, Testing& Quality plan and Procedure
39.	Material Certificates for Supplier's/Contractor's Materials & Certificates
40.	Painting/Coating Procedure & Result
41.	Test Procedure & Report (Including FAT / SAT)
42.	Dimensional Control Reports/Dimension Inspection Reports & Weighing Reports
43.	Shop & Fabrication Inspection Plan
44.	Notice of Inspection
45.	Inspection & Test Report and Non Conformance Report / Register
46.	Manufacturer Inspection Final Data Record
47.	Material Traceability Reports
MDR (MANUFACTURER DATA RECORD)	
48.	Operating & Maintenance manuals and catalogues
49.	Product Catalogues
50.	Priced Spare Parts List with Part no. and Interchange ability Record
51.	Spare parts list
52.	Packing, Transportation, Storage and Installation procedure
53.	As-built document, drawings & manuals

The MPC Contractor shall maintain an up to date drawing & document register and monitor drawing & document issued. This register shall list all drawings & documents used in the design and construction. The drawing register shall be a controlled document and shall be kept updated / revised and shall be issued on A3 / A4 size sheets.

7.0 DOCUMENTATION:

MPC contractor shall follow the documentation procedure as mentioned below for the drawings / documents submitted for EPCM consultant approval and records.

- MPC contractor shall follow the drawing / document template as per the format provided by the EPCM consultant.
- Drawing and documentation are only accepted by the EPCM consultant/OIL when signed by the MPC contractor as checked and approved in the coversheet.
- All the drawings (package engineering, documents have to be prepared by the MPC contractor in a presentable manner with all texts in the English language.
- Drawings shall show all necessary dimensions and details required for interface information and installation.
- Required clearance for maintenance and weight / dimension of heaviest single piece item to be handled shall be indicated in the drawing.
- MPC contractor shall submit major documents and drawings containing interface information for the EPCM consultant approval according to the minimum document requirement list but in any case prior to start of manufacturing.
- All revised drawings and documents shall clearly show revision cloud, revisions with the issue date and the MPC contractor's checked and approval signature.
- Drawings shall be in AUTOCAD format, other documentation shall be in Microsoft Office format (Excel / Word / Power Point / Access).
- Drawings, documentation and certification requiring an independent certifying authority to approve shall be done at the vendor's initiation, direction and expense.
- All final drawings, manuals and computer based training information for the MPC contractor's equipment (i.e.: operation and maintenance manuals) shall be provided. Further details are specified within the minimum document requirement list.
- MPC contractor shall provide 1 Soft copy of all/each documents, submitted for Review/Approval.
- MPC contractor shall provide 6hard copies plus3 Soft copies (2 copies in CD-ROM and 1 copy in Flash Drive)of all the Final/As-Built documents.
- The Supplier, and his sub-supplier, shall operate a quality system satisfying the applicable provisions of BS5750/ISO 9000 (series). A detailed quality plan shall be provided with the bid.

- The EPCM consultant reserves the right to carry out quality and technical review at both supplier's and sub-supplier's works.

8.0 STATUTORY APPROVALS:

MPC contractor shall make necessary documentation in prescribed format for statutory approvals like PCB, PESO and other statutory bodies. MPC contractor shall submit the documents as applicable and obtain the approval before commissioning of the Plant.

The requirement of DGMS approval can be waived, provided the MPC contractor shall meet the following requirement

a) Ensure that the electrical/instrumentation appliance, equipment, machinery or other material that are used or may be used in zone "1" or zone "2" hazardous area of the project is of a type and specification conforming to an Indian standard or an international standard adopted by the Bureau of Indian Standards through harmonization, specified by the Chief Inspector of Mines by a general order notified in the Official Gazette.

b) Provided that where no such standard exists, the Chief Inspector of Mines on merit, by a general order notified in the Official Gazette may accept an international standard.

c) Also provided that such appliance, equipment, machinery or other material shall not be used in zone "1" and zone "2" hazardous area of the mine unless the same has been tested and passed the test as per the applicable standard and the supplier/vendor has kept a record of the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports and any other relevant details.

MPC Contractor shall carry out any change/ addition required to meet the requirements of the statutory authorities, within the quoted rates. The inspection and acceptance of the work by statutory authorities shall be the responsibility of the MPC Contractor.

List of all documents, drawings, forms, affidavits etc. required for the approvals shall be submitted by the MPC contractor.

9.0 PROCUREMENT:

The scope of work of MPC Contractor is composite in nature which contains broadly:

a) For all critical & major items, the MPC contractor shall take prior approval from EPCM consultant/OIL before procuring these items.

b) The MPC Contractor shall carry out Inspection and expediting services for all the ordered items for the project. Wherever required, EPCM consultant will also visit vendor shops to

witness inspection / testing. Factory Acceptance Tests (FAT) / Site Acceptance Tests (SAT) shall be as per approved QAPs.

c) All equipments required for performance testing to prove the guaranteed performance of the instrument/equipment supplied shall be by the MPC contractor at no extra cost for the duration of the performance test.

10.0 MATERIAL MANAGEMENT:

a) MPC contractor shall be responsible for the Goods Receipt, Goods Issue & other material management activities.

11.0 FABRICATION:

a) The fabrication shall be carried out at MPC Contractor's fabrication shop.

b) All the jobs should be carried out with strict adherence to the relevant Codes and Standards, as well as safety rules and regulations prevailing in Oil/Gas Sector.

12.0 QUALITY CONTROL:

a) Owner/EPCM reserves the right to appoint independent Third Party Agency for quality control/quality surveillance of materials and fabrication activity.

13.0 INSPECTION AND TESTING:

Detailed quality control Plan (Inspection Test Plan) shall be submitted to EPCM consultant for approval before starting the fabrication work. All inspections / tests shall have approval of EPCM consultant.

a) MPC contractor shall provide the certification of material compliance in accordance with relevant standards as specified in the design basis.

b) The testing and inspection shall be in strict accordance with the design code requirements and OIL/EPCM approved ITP.

c) The right to witness all inspection and Non-Destructive Test from raw material certification till final stage of inspection is reserved by EPCM consultant /OIL and their TPI agency.

d) All test procedures shall be forwarded to the EPCM consultant for approval.

e) EPCM / OIL will inspect the various equipment during the various stages of construction at the manufacturer's works. MPC contractor shall intimate EPCM consultant / OIL, the location and date of inspection before fifteen (15) days.

f) The inspector may at his discretion examine the following

- Materials of construction of standard parts prior to start of work

- Complete or part assembled units
- Functional testing and simulation of control system including local control panel.

14.0 PAINTING:

a) Painting covers the general requirements like surface preparation, painting, application sequence, color codes etc.

b) Paint selected shall be such that they should be able to withstand all weather conditions as well as atmospheric conditions of the plant area.

15.0 MARKING:

As it is necessary to separate the unit into different parts for the transportation all components and subassemblies shall be carefully identified and match marked to prevent any error during reassembly at site.

All loose components such as studs, nuts, washer, gasket etc., shall be packed in creates and shall be marked for the project, consignee, consigner, job number, item number, order number, gross and net weight, dimensions etc. A copy of loose component list shall be enclosed in a water tight envelope.

Additional indications such as North / East / South / West along with (COG) center of gravity shall be clearly marked with white paints.

16.0 TRANSPORTATION:

MPC Contractor shall arrange to transport the containerized package equipment to site location at Nadua and East Khagorijan (Dibrugarh district) of Assam. The MPC Contractor shall consider the limitation of transportation dimension to site as follows.

•The dimensions of any package shall not exceed the standard ISO container size (for any mode of transportation).

•The total weight of any package shall not exceed the weight limitation of the "Ministry of road transport and highways and transportation mode.

MPC contractor to undertake route survey, arrange and provide all loading/unloading facilities, transportation of entire skid to Contractor's premises including all roll on, roll off facilities, crane(s), labour etc.

17.0 INSTALLATION AND COMMISSIONING:

MPC Contractor shall reassemble / reconnect all parts/packages at site and install the containerized central control room with control system and other items which were disassembled for transportation purpose.

MPC contractor shall do the commissioning of the Central Control Room with Control System facility to the satisfaction of OIL and training of personnel from OIL during the period of trial run for day to day running and trouble shooting of the facilities is the responsibility of MPC Contractor.

18.0 TECHNICAL COMPLIANCE:

MPC Contractor must furnish answers/clarifications/confirmations of all the following queries and submit along with offer. MPC Contractor shall indicate the reply in the space provided in the Technical Questionnaire. In case space provided is not adequate, the reply may be furnished separately under suitably numbered annexure /attachments duly referred against the comment/query.

The Compliance Statements/Queries are required to be categorically confirmed /answered by the bidder and the completely filled in Tech Questionnaire shall be submitted together with the Bid.

Sl. No.	COMPLIANCE STATEMENT/ QUERY	MPC CONTRACTOR'S CONFIRMATION/ ANSWER
1.	Note that the scope of work consists of 2 (Two) package facilities, which are located at different locations at Nadua and East Khagorijan, Assam. Confirm that all requirements for each location is taken care without any deviations.	
2.	Confirm that all requirements as per tender, design basis and Codes & Standards shall be complied without any technical deviation. MPC contractor to ensure that the offer is complete in first instance itself.	
3.	Confirm that all requirements as per TOR, SOR and Instrument design basis attached in bid package shall be complied	
4.	Confirm that all requirements as per Control System Architecture and Control Room Layout attached in bid package shall be complied	
5.	MPC contractor undertakes to furnish schedule of submission of drawings, documents and schedule of inputs required for review, during kick-off meeting. Delay in review of these drawing /documents due to non-adherence to the agreed schedule or not following sequential submission shall be the MPC contractor's responsibility. MPC contractor to confirm compliance.	

Sl. No.	COMPLIANCE STATEMENT/ QUERY	MPC CONTRACTOR'S CONFIRMATION/ ANSWER
6.	Confirm that all Drawings / Data requirements as per tender and codes referred to documents have been included.	
7.	Confirm that the sequence for submission of the deliverables shall be strictly as per approved master document schedule and that the prerequisites should be satisfied prior to submission of a document/ drawing.	
8.	Understand the requirements of revisions in drawing/documents. Confirm compliance.	
9.	Confirm that all Sub-Vendor / Supplier selected by MPC Contractor would be subject to OIL/ EPCM consultant approval and meeting the equipment qualification criteria Requirements. Confirm Compliance.	
10.	Understand the requirements of Proven track record for similar package engineering activities and confirms that the details required are submitted with the bid.	
11.	Confirm that all requirements for carrying out PGTR shall be complied	
12.	Confirm that guarantee / warranty of Control System are included in MPC contractor's scope of work.	
13.	Confirm that all Inspection & Tests as required for Control System and Codes& standards referred to have been included by the MPC contractor in their proposal.	
14.	Confirm inclusion of Mandatory Spares as required.	
15.	Confirm that Erection & Commissioning Spares as required have been included by the MPC contractor in the proposal. Further, in case any spare is consumed over and above the quoted commissioning spares during start-up/ commissioning, the same shall be supplied free of cost.	

Sl. No.	COMPLIANCE STATEMENT/ QUERY	MPC CONTRACTOR'S CONFIRMATION/ ANSWER
16.	MPC contractor shall obtain and submit the priced list of operation and Maintenance spares required for Two Year Normal Operation as recommended by the equipment manufacturer. Confirm Compliance.	
17.	Confirm that Special Tools & Tackles, as required have been included.	
18.	MPC contractor shall furnish the deviations, if any against the Tender and Codes & Standards shall be duly consolidated at one place (under exceptions/ deviation list). In case no deviations are furnished, it shall be construed that MPC contractor's proposal is in total compliance to the bid document requirements.	
19.	Any deviations/deletions/corrections made elsewhere in the body of the bid (on specs etc.) will not be taken cognizance of and all such deviations shall be deemed to have been withdrawn by the MPC contractor. Confirm compliance.	
20.	Confirm the training of OIL personnel is considered in the proposal	
21.	Confirm the supply and installation of field instruments related to installation of cable trays, cable tray supports, cable laying, glanding & terminations, loop checking, pre-commissioning and commissioning of field instruments	
22.	Confirm the control systems envisaged shall be assembled in adequately sized standard 40 feet containers.	

19.0 ATTACHMENTS

- ND & EK Control System Architecture (Preliminary)
- ND & EK Instrument Design Basis
- ND & EK Instrument Index with IO List
- ND & EK Interface Cable Schedule (Preliminary)

- ND & EK Control Room Typical Arrangement (Preliminary)
- ND & EK Schedule of Rates (SOR)
- ND & EK Tank P&IDs
- ND & EK Overall Plot Plan
- Vendor Document Requirement List
- ND & EK Tank Instrument Index
- ND & EK Item Wise Detail Of Instrumentation Package Annexure IIA & IIB

Bidder's Signatures, with Stamp and Date

END OF VOLUME-I Part-III SECTION-1

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VOLUME I: COMMERCIAL
PART III
SECTION - 2

SPECIAL CONDITIONS OF CONTRACT

VOLUME I: COMMERICAL
PART III

SECTION - 2
SPECIAL CONDITIONS OF CONTRACT

1.0 GENERAL:

Special Conditions of Contract shall be read in Conjunction with the General Conditions of Contract, specification of work, Drawings and any other documents forming part of this Contract wherever the context so requires.

Notwithstanding the sub-division of the documents into these separate sections and volumes, every part of each shall be deemed to be supplementary to and complementary of every other part and shall be read with and into the Contract so far as it may be practicable to do so.

Where any portion of the General Condition of Contract is repugnant to or at variance with any provisions of the Special Conditions of Contract (SCC), unless a different intention appears, the provisions of the Special Conditions of Contract shall be deemed to over-ride the provisions of the General Conditions of Contract and shall to the extent of such repugnancy, or variations, prevail.

Wherever it is mentioned in the specifications that the Contractor shall perform certain work or provide certain facilities, it is understood that the Contractor shall do so at his cost and the value of the Contract shall be deemed to have included cost of such performance and provisions, so mentioned.

The materials, design, and workmanship shall satisfy the relevant Indian Standards, the Job Specifications contained herein and Codes referred to. Where the job specification stipulates requirements in addition to those contained in the standard codes and specifications, these additional requirements shall also be satisfied.

In case of an irreconcilable conflict between Indian or other applicable standards, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings or Schedule of Rates, the following shall prevail to the extent of such irreconcilable conflict in order of precedence:

- Contract Agreement
- Letter of Award
- Schedule of Rates
- Terms of Reference
- Technical/Material Specifications & Drawings
- Special Conditions of Contract.

- Instruction to Bidders and General Conditions of Contract.
- Indian Standards
- Other applicable Standards

It will be the MPC Contractor's responsibility to bring to the notice of Consultant any irreconcilable conflict in the contract documents before starting the work (s) or making the supply with reference which the conflict exists.

In the absence of any Specifications covering any material, design of work (s) the same shall be performed / supplies / executed in accordance with Standard Engineering Practice as per the instructions / directions of the Consultant, which will be binding on the Contractor.

2.0 SCOPE OF WORK:

The scope of work in general includes scope of work specified in Technical Documents enclosed and Schedule of Rates enclosed in Commercial Section of the Bidding Document. Further, it includes any other work not specifically mentioned but required to complete the work as per specifications, drawings and instructions of Consultant.

Scope of work shall be read in conjunction with item description of Schedule of Rates and the Contractor's scope shall include all activities of work specified in the item description of Schedule of Rates.

Rates shall include all costs for the performance of the item considering all parts of the Bidding Document. In case any activity though specifically not covered in description of item under `Schedule of Rates' but is required to complete the work which could be reasonably implied/informed from the content of Bidding Document, the cost for carrying out such activity of work shall be deemed to be included in the item rate.

3.0 SCOPE OF SUPPLY:

The Contractor shall supply Instrumentation Package including all the Materials, Equipments, Tools and Tackles required for delivery of Instrumentation Package in all respects as per the requirement enumerated in Technical Section of Bidding Document, at their sole cost and expense.

4.0 TIME SCHEDULE:

The Work shall be executed strictly as per time schedule given in Annexure- I to SCC. The period of completion given includes the time required for delivery of packages in all respects to the satisfaction of the Consultant.

Project Execution Plan shall be prepared by the Contractor and approved

by the Consultant. This programme will take into account the Time Schedule as mentioned in Annexure- I.

Weekly execution progress shall be reported to Consultant.

5.0 DRAWINGS AND DOCUMENTS:

The drawings accompanying the bid document (if any) are of indicative nature and issued for bidding purpose only. Purpose of these drawing is to enable the bidder to make an offer in line with the requirements of the Company. However no extra claim whatsoever shall be entertained for variation in the "Approved for Construction" and “Bid document drawings" regarding any changes/units.

The drawings and documents to be submitted by the Contractor to the Company after award of the work as per agreed Document Control Index (DCI)/Master Document Schedule (MDS) shall be for the Company/Consultant’s approval, review, information and record. The Contractor shall ensure that drawings and documents submitted to the Company/Consultant’sare accompanied by relevant calculations, data as required and essential for review of the document/drawings. The Company shall review the drawings/documents within two weeks from the date of submission provided the same are accompanied by relevant calculations, data as required and essential for review.

All documents and drawings including those of the Contractor, sub-vendors manufacturer etc. shall be submitted to the Consultant/ Company after having been fully vetted in detail, approved and co-opted by the Contractor & shall bear Contractor’s Seal/Certifications to this effect. All documents/drawings & submissions made to the Company without compliance to this requirement will not be acceptable and the delay & liability owing to this shall be to the Contractor's account.

The review of documents and drawings by the Company shall not absolve the Contractor from his responsibility to meet the requirements of specifications, drawings etc. and liabilities for mistakes and deviations. Upon receiving the comments on the drawings/documents reviewed by the Consultant/Company, the Contractor shall incorporate the comments as required and ensure their compliance.

Copies of all detailed working drawing relating to the works shall be kept at the Contractor’s Office and shall be made available to the Consultant/Company at any time during execution of the Contract. However, no extra claim whatsoever shall be entertained for any variation in the “approved/issued for construction drawings” and “tender drawings” regarding any changes/units unless otherwise agreed.

The Contractor shall rectify any inaccuracies, errors and non-compliance

to contractual requirements. Any delay occurring on this shall not construe a reason for delay/ extension.

6.0 FIRM PRICES:

The quoted price shall remain firm and fixed till the completion of work except for the statutory variations of GST.

7.0 GOVERNMENT OF INDIA NOT LIABLE:

It is expressly understood and agreed by and between the Contractor and the Company that the Company is entering into this agreement solely on its own behalf and not on behalf of any other person or entity. In particular, it is expressly understood and agreed that the Government of India is not a party to this agreement and has no liabilities, obligations or rights there under. It is expressly understood and agreed that the Company is an independent legal entity with power and authority to enter into contract, solely in its own behalf under the applicable laws of India and General Principles of Contract Law. The Contractor expressly agrees, acknowledges and understands that the Companyis not an agent, representative or delegate of Govt. of India. It is further understood and agreed that the Govt. of India is not and shall not be liable for any acts, omissions, commissions, breaches or other wrongs arising out of the Contract. Accordingly, the Contractor hereby expressly waives, releases and foregoes any and all actions or claims, including cross claims, impleader claims or counter claims against the Govt. of India arising out of this Contract and covenants not to sue to Govt. of India as to any manner, claim, cause of action or thing whatsoever arising of or under this agreement

8.0 INTELLECTUAL PROPERTY:

Neither the Company nor the Contractor nor their personnel, agents nor any sub-contractor shall divulge to any one (other than persons designated by the party disclosing the information) any information designated in writing as confidential and obtained from the disclosing party during the course of execution of the works so long as and to the extent that the information has not become part of the public domain. This obligation does not apply to information furnished or made known to the recipient of the information without restriction as to its use by third parties or which was in recipient's possession at the time of disclosure by the disclosing party. Upon completion of the works or in the event of termination pursuant to the provisions of the Contract, the Contractor shall immediately return to the Company all drawings, plans, specifications and other documents supplied to the Contractor by or on behalf of the Company or prepared by the Contractor solely for the purpose of the performance of the works, including all copies made

thereof by the Contractor.

9.0 PROVIDENT FUND ACT:

The MPC Contractor shall comply with the provisions of Employees Provident Fund Act and register them with RPFC as applicable.

10.0 ALTERATIONS IN DESIGNS, PLANS, DRAWINGS, SPECIFICATIONS ORDERS AND INSTRUCTIONS:

a. The Consultant/ The Company shall have the power, by written notice to the Contractor at any time prior to or in the course of the execution of works or any part thereof, to alter or amend the specifications, orders and/or instructions or any of them by addition, omission, substitution or otherwise howsoever with or without altering or amending the plans, drawings and/or design and the Contractor shall carry out the related work in accordance with such altered specifications, orders, instructions, plans, drawings and/or designs as the case may be, on the same terms and conditions in all respects.

b. ALTERATION IN THE SCOPE OF WORK:
The Company may, at any time(s) before or after the commencement of the work, by notice in writing issued to the Contractor, alter the scope of work by increasing or reducing the works or the jobs required to be done by the Contractor or by adding thereto or omitting there from any specific works or jobs or operations or by substituting any existing works or jobs or operations with other works or jobs and/or operations or by requiring the Contractor to perform any additional works in or about the job site, and upon receipt of such notice the Contractor shall execute the job(s) as required within the altered scope of work.

11.0 TERMS OF PAYMENT:

Basis and terms of payment for making "On Account Payment" shall be as set out in Annexure-II to SCC.

12.0 TESTS AND INSPECTION:

Materials to be supplied by the Contractor under his scope of work shall be inspected as per the detailed scope provided in the Technical Part of Bidding Document.

All the tests either on the field or at outside laboratories concerning the execution of the work and supply of materials by the Contractor shall be carried out by the Contractor at his own cost. Consultant will arrange Third Party Inspection wherever necessary.

The work is subject to inspection at all times by the Consultant/Company. The Contractor shall carry out all instructions given during inspection and shall ensure that the work is being carried out according to the technical specifications of this bid document, the technical documents and the relevant codes of practice will be furnished to him during the performance of the work.

Any work not conforming to execution drawings, specifications or codes shall be rejected forthwith and the Contractor shall carryout the rectifications at his own cost.

All results of inspection and tests will be recorded in the inspection reports, proforma of which will be approved by the Consultant. These reports shall form part of the completion documents.

Inspection and acceptance of work shall not relieve the Contractor from any of his responsibilities under this Contract.

13.0 QUALITY MANAGEMENT SYSTEM:

Bidder shall include in his offer the Quality Assurance Programme containing the overall quality management and procedures, which is required to be adhered to during the execution of contract. After the award of the Contract detailed quality assurance programme shall be prepared by the contractor for the execution of the Contract for various works, which will be mutually discussed and agreed to.

The Contractor shall establish document and maintain an effective quality assurance system outlined in recognised codes.

Quality Assurance System plans/procedures of the Contractor shall be furnished in the form of a QA manual. This document should cover details of the personnel responsible for the Quality Assurance, plans or procedures to be followed for quality control in respect of Engineering, Procurement, Fabrication, Testing, Preservation, Packing, Transportaiton and Supply to site. The quality assurance system should indicate organizational approach for quality control and quality assurance at all stages of work including at manufacture's works and dispatch of materials.

The Company/Consultant or its representative shall reserve the right to inspect/witness, review any or all stages of work at shop/site as deemed necessary for quality assurance.

The Contractor has to ensure the deployment of Quality Assurance and Quality Control Engineer(s) depending upon the quantum of work. This QA/QC group shall be fully responsible to carryout the work as per standards and all code requirements. In case Consultantfeels that the Contractor's QA/QC Engineer(s) are incompetent or insufficient, theContractor has to deploy other experienced Engineer(s) as per

requirement and to the complete satisfaction of the Consulant.
In case the Contractor fails to follow the instructions of the Consultantwithrespect to above clauses, next payment due to him shall not be released unless until he complies with the instructions to the complete satisfaction of the Consultant.

The Contractor shall adhere to the quality of work as per laid down Specification elsewhere in the Bidding Document.

14.0 HEALTH, SAFETY AND ENVIRONMENT (HSE) MANAGEMENT:

The Contractor, during entire duration of the Contract, shall adhere to agreed HSE plan.

15.0 COMPLETION DOCUMENTS:

The following documents shall be submitted in hard binder by the Contractor/Sub-Contractor in Six sets (6), as a part of completion documents. These will be in addition to those mentioned in General Conditions of the Contract.

(i) Material Inspection/Test Report for supply of all materials
(ii) TPI release notes and dispatch release notes by Consultant
(iii) As-Built drawings
(iv) Operation & Maintenance Manual of each package
(v) Commissioning Manual
(vi) Any other drawing/document/report specified elsewhere in the bidding document.

16.0 COORDINATION WITH OTHER AGENCIES:

Proper coordination with other agencies will be the Contractor's responsibility. In case of any dispute, the decision of Consultant shall be final and binding on the Contractor.

17.0 RESPONSIBILITY OF MPC CONTRACTOR:

It shall be the responsibility of the Contractor to obtain the approval for any revision and/or modifications decided by the Contractor from the Company/the Consultantbefore implementation. Also such revisions and/or modifications if accepted/ approved by the Company/the Consultant shall be carried out at no extra cost to the Company. Any changes required during and/or after approval for detailed construction drawings due to functional requirements or for efficient running of system keeping the basic parameters unchanged and which has not been indicated by the Contractor in the data/drawings furnished along with the offer will be carried out by the Contractor at no extra cost to the Company.

The procurement and supply in sequence and at the appropriate time of

all materials and consumables shall be entirely the Contractor's responsibility and his rates for execution of work will be inclusive of supply of all these items.

18.0 SINGLE POINT RESPONSIBILITY:

The entire work as per Scope of Work covered under this contract shall be awarded on single point responsibility basis.

19.0 COORDINATION WITH CONSULTANT:

The Contractor shall coordinate with the Consultant, for his day-to-day activities and provide free access and assistance during the inspections and other activities to be carried out by the Consultant.

20.0 DELAYS BY THE COMPANY OR ITS AUTHORISED AGENTS:

No adjustment in Contract Price shall be allowed for reasons of any delays and extensions granted except as provided in Tender Document, where the Company reserves the right to seek indulgence of the Contractor to maintain the agreed Time Schedule of Completion.

21.0 FAILURE BY THE CONTRACTOR TO COMPLY WITH THE PROVISIONS OF THE CONTRACT

If the Contractor refuses or fails to execute the work or any separate partthereof with such diligence as will ensure its completion within the time specified in the Contract or extension thereof or fails to perform any of his obligation under the Contract or in any manner commits a breach of any of the provisions of the Contract it shall be open to the Company at its option by written notice to the Contractor:

a. To determine the Contract in which event the Contract shall stand terminated and shall cease to be in force and effect on and from the date appointed by the Company on that behalf, whereupon the Contractor shall stop forthwith any of the Contractor's work then in progress, except such work as the Company may, in writing, require to be done to safeguard any property or work, or installations from damage, and the Company, for its part, may take over the work remaining unfinished by the Contractor and complete the same through a fresh contractor or by other means, at the risk and cost of the Contractor, and any of his sureties if any, shall be liable to the Company for any excess cost occasioned by such work having to be so taken over and completed by the Company over and above the cost at the rates specified in the schedule of quantities and rate/prices.

b. Without determining the Contract to take over the work of the Contractor or any part thereof and complete the same through a fresh contractor or by other means at the risk and cost of the

Contractor. The Contractor and any of his sureties are liable to the Company for any excess cost over and above the cost at the rates specified in the Schedule of Quantities/Rates, occasioned by such works having been taken over and completed by the Company.

c. The whole or part of the Contract Performance Security furnished by the Contractor is liable to be forfeited without prejudice to the right of the Company to recover from the Contractor the excess cost referred to in the sub-clause aforesaid, the Company shall also have the right of taking possession and utilising in completing the works or any part thereof, such as materials equipment and plants available at work site belonging to the Contractor as may be necessary and the Contractor shall not be entitled for any compensation for use or damage to such materials, equipment and plant.

d. The amount that may have become due to the Contractor on account of work already executed by him shall not be payable to him until after the expiry of Six (6) calendar months reckoned from the date of termination of Contract or from the taking over of the work or part thereof by the Company as the case may be, during which period the responsibility for faulty materials or workmanship in respect of such work shall, under the Contract, rest exclusively with the Contractor. This amount shall be subject to deduction of any amounts due from the Contractor to the Company under the terms of the Contract authorised or required to be reserved or retained by the Company.

Before determining the Contract as per above clauses, provided in the judgement of the Company, the default or defaults committed by the Contractor is/are curable and can be cured by the Contractor if an opportunity given to him, then the Company may issue Notice in writing calling the Contractor to cure the default within such time specified in the Notice.

The Company shall also have the right to proceed or take action as per above, in the event that the Contractor becomes bankrupt, insolvent, compounds with his creditors, assigns the Contract in favour of his creditors or any other person or persons, or being a company or a corporation goes into voluntary liquidation, provided that in the said events it shall not be necessary for the Company to give any prior notice to the Contractor.

Termination of the Contract as provided for in the clauses above shall not prejudice or affect their rights of the Company which may have accrued upto the date of such termination.

22.0 COMPLETION OF WORK:

The Final Report of Completion of Work shall be issued by the Company against the written application of the Contractor after completion of successful PGTR. The issue of Completion Certificate/Report shall be considered as the completion of all the obligations of the Contractor under the Contract.

23.0 WARRANTY /GUARANTEE & DEFECT LIABILITY PERIOD:

Contractor also guarantees the design, workmanship and the freedom from defects of the Goods and/or Services for a period of one (1) Gregorian year from the installation,commissioning and PGTR or twenty four (24) Gregorian months from the date of receipt of the Goods and/or Services by Company.

Notwithstanding anything else to the contrary, If, within these specified periods, Contractor receives notice from COMPANY of any alleged defect in or non conformance of any product or repair and if in the Contractor's sole judgment the product or repair does not conform or is found to be defective in material or workmanship then COMPANY shall at Contractor's request, return the part or product F.O.B. for Foreign Contractor and F.O.R Duliajan (Despatching Station) for Indian Contractor to Contractor's designated plant or service location. Any repair work performed by Contractor is warranted for one year from completion of such repairs and applies only to work performed.

If the Contractor feels that any variation in work or in quality of materials or proportions would be beneficial or necessary to fulfil the guarantees called for, he shall bring this to the notice of the Consultant/OIL in writing.

Defective goods / materials or parts notified by OIL to the Seller shall be replaced immediately by the Seller on F.O.R destination basis for Indian Contractor including payment of all taxes and duties at Seller's expense. Also, an additional Contractal Performance Guarantee shall be furnished separately for the extended period of liability for that portion of work/equipment only.

Contractor, at Contractor's option and expense, shall repair or replace the defective part or product, or repay to COMPANY the full price paid by COMPANY for such defective part, repair or product. Any repayment of the purchase price shall be without interest. Contractor's warranty liability, including for defects caused by Contractor's negligence, shall be limited to such repair, replacement or refund, and shall not include claims for labour costs, heavy lifting, rig stand-by time, expenses of COMPANY resulting from defects, recovery under general tort law or strict liability or for damages resulting from delays, loss of use, or other direct, indirect, incidental or consequential damages of any kind.

However, guarantee for the Basic Engineering & FEED of PLANTS in respect of suitable, appropriate & fault-free design, and system adaptability, process philosophy, etc. without defects/faults that affect operation of the plant will be provided by the Consultant.

Any Liability arising due to failure to obtain required mandatory statutory approval for the Plant and the installed instrument/facility as stipulated vide provisions of Oil Mines Regulations, DGMS, Indian Explosives Act, Indian Electricity Rules, Petroleum Rules, Indian Boiler Regulations etc. in force or byelaws / directives promulgated by Govt. Circulars/ Regulatory Boards/Panels, Enforcement Directorates etc will be borne by the Consultant.

Any liability due to wrong/improper framing of commissioning & testing procedures and Safe Operating Procedures (SOPs) for all field equipments, system, etc. will be borne by Consultant.

Contractor will not be responsible for failures of products which have been in any way tampered with or altered by anyone other than Contractor's authorized representative, failures due to lack of compliance with recommended maintenance procedures or products which have been repaired or altered in such a way (in Contractor" s judgment) as to affect the products adversely.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, STATUTORY OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE WHICH EXCEED THE FOREGOING WARRANTY.

24.0 PAYMENT & INVOICING PROCEDURE:

The Company shall pay to the Contractor, during the term of the Contract, the amount due calculated according to the rates of payment set and in accordance with other provisions hereof. No other payments shall be due from the Company unless specifically provided for in this Contract.All payments will be made in accordance with the terms hereinas described.

Payments due by the Company to the Contractor shall be made at the Contractor's designated bank account. All bank charges will be to their account.

Payment of any invoices shall not prejudice the right of the Company to question the validity of any charges therein, provided the Company within one year after the date of payment shall make and deliver to the Contractor written notice of objection to any item or items the validity of which the Company questions.

The Contractor is required to submit all bills/invoices, other negotiating documents etc as applicable and as set out in Annexure II Schedule of Payments.

The Company shall within 10 days of receipt of the invoice notify the Contractor of any item under dispute, specifying the reasons thereof, in which event, and payment of the disputed amount may be withheld until settlement of the dispute, but payment shall be made of any undisputed portion within 30 days subject to necessary approval. This will not prejudice the Company's right to question the validity of the payment at a later date.

The acceptance by the Contractor of part payment on any billing not paid on or before the due date shall not be deemed a waiver of the Contractor's rights in respect of any other billing, the payment of which may then or thereafter be due.

The Contractor shall maintain complete and correct records of all information on which the Contractor's invoices are based up to two (2) years from the date of last invoice. Such records shall be required for making appropriate adjustments or payments by either party in case of subsequent audit query / objection. Any audit conducted by the Company of the Contractor's records, as provided herein, shall be limited to the Company's verification (i) of the accuracy of all charges made by the Contractor to the Company and (ii) that the Contractor is otherwise in compliance with the terms and conditions of this Agreement.

25.0 NIL Customs Duty and Concessional GST Applicable for Projects in ML/PEL Area

1.0 Consequent upon implementation of GST w.e.f. 01.07.2017, various Office Ordered /Circulars and clarifications thereof have been notified by Govt. of India regarding applicability of exemption / concession on the Customs Duty as well as on GST for procurement of goods & services by OIL & ONGCL in connection with use in PEL/ML Areas for exploration purpose. The items eligible for NIL rate of Customs Duty and Concessional GST @5% are appended in the list as appended below.

2.0 In this regard, the following Govt. Notifications may also be referred:

(a) Notification No. 3/2017-Integrated Tax (Rate) dated 28.06.2017 for IGST @5% (five percent) on procurement from Domestic / Indigenous Suppliers having interstate movement.

(b) Notification No. 3/2017-Central Tax (Rate) dated 28.06.2017 for GST @5% (CGST+SGST) on procurement from Domestic / Indigenous Suppliers having intrastate movement.

(c) Sl. No 404 and Chapter 84 of Notification No. 50/2017-Customs dated 30.06.2017 for NIL Rate of Customs Duty and IGST@5% on procurement from Overseas Suppliers (Imported Goods).

3.0 To avail benefit under above Government Notification, OIL needs to put up application for obtaining Essentiality Certificate (EC) from DGH. While applying for EC, following information are required to be furnished to DGH:

- Technical Justification of the ordered items regarding use of the item.
- Nature of operation under which the ordered items fall out of the following categories:
- Production, Drilling, Logging, Seismic acquisition, Chemical, Reservoir, Geophysics, Geology, IT and Software
- Area (specific ML / PEL area) where the item will be used as in the list, as furnished vide Annexure A, under which the ordered item falls.

26.0 PACKAGING

1. Packing of goods must be sufficiently robust to withstand multiple handling during transit for delivery to their final destination so that contents do not get damaged. Protection of the plant and equipment against corrosion or deterioration must be given special attention. In case of foreign Bidders, the packing should be seaworthy.
2. Machined steel and iron parts are to be heavily greased /varnished as prevention against rust.
3. In the case of transformers, panels, switch gears and similar equipment, internal parts are to be sprayed with an inhibitor or water splitting preservative and all openings covered with tape to prevent ingress of water.
4. Boxes / Packing cases containing electrical / electronic equipment are to be waterproof lined.
5. All items must have their respective identification marks painted /embossed on them.MM-LOCAL-E-01-2005 – FHQ (Rev Jan.2018) http://oilindia.com/pdf/tenders/limited/General_Terms_and_Condition_Indigenous_E-Tenders-MM-LOCAL-E-01-2005FHQ.pdf
6. Crates or boxes should have a list of items contained therein secured to the exterior by means of an enveloping piece of tin sheet nailed to the wood. A duplicate list should also be included inside the crate with the contents.
7. The Seller shall be responsible for damage of goods either in full or in part and for corrosion and/or deterioration of the plant and equipment during transit due to inadequate/insufficient packing ordue to non-compliance with the above Para Nos. 1 to 4 depending upon the nature of items and as such shall be obligated to repair or replace the damaged goods or plant or equipment in full or in parts thereof, at free of cost to OIL within a time period stipulated by OIL.

27.0 DESPATCH

Road Despatch

a) In the event of an order other than FOR Destination terms, the material will be required to despatch through OIL's approved transporters (which will be specified in the order) on "Door Delivery" basis.
b) For orders placed on FOR Destination basis, the material will be required to despatch through reputed Bank approved transporters only on Door Delivery basis. In case OIL is required to collect the material from transporters godown, extra expenditure incurred thereof will be recovered from the Bidder/seller.

Rail Despatch:

a) In case of Rail despatch, the Bidder will be fully responsible for arranging required railway wagons/rake. Tubular consignment will be despatched on open type wagons only. Height of the wagons should not exceed 4.6 metres.

28.0 INSURANCE

a) Transit insurance will be arranged and paid for by OIL for all orders other than FOR Destination orders. The Bidder/seller will be required to intimate the insurance agency (which will be specified in the Purchase Order) regarding the despatch details immediately after despatch. The Sellers have to arrange the transit insurance at their cost in case oforders placed on FOR Destination basis.

ANNEXURE- I TO SPECIAL CONDITIONS OF CONTRACT

TIME SCHEDULE

NAME OF WORK	DELIVERY PERIOD
MS 1 : DELIVERY OF NADUA INSTRUMENTATION PACKAGE AT SITE	**SIX MONTHS (6) FROM THE DATE OF LOI**
MS 2 : DELIVERY OF EAST KHAGORIJAN INSTRUMENTATION PACKAGE AT SITE	**SEVEN MONTHS (7) FROM THE DATE OF LOI**
MS 3 : ERECTION / INSTALLATION AND COMPLETION OF COMMISSIONING OF NADUA INSTRUMENTATION PACKAGE	**SEVEN MONTHS (7) FROM THE DATE OF LOI**
MS 4 : ERECTION / INSTALLATION AND COMPLETION OF COMMISSIONING OF EAST KHAGORIJAN INSTRUMENTATION PACKAGE	**EIGHT MONTHS (8) FROM THE DATE OF LOI**

Note:

1. Delivery period of MS1, MS2, MS3, MS4 at sites (Nadua and East Khagorijan), shall be reckoned from date of award of contract, which shall be the date of issue of Letter of Award (LOA)/Letter of Intent (LOI)
2. Delivery period indicated is for delivery of Instrumentation Packages in all respects as per specifications, codes, drawings and instructions of Consultant.
3. In event of of delay on the part of the contractor to deliver materials (MS1 and MS2) within the stipulated delivery period Liquidated Damages (LD) at the rate of 0.5% per unit package cost, per week or part there off subject to maixum of 5% will be applicable. Further, In the event of delay on the part of contractor to deliver the services (MS3, MS4) within the stipulated delivery period Liquidated Damages (LD) at the rate of 0.5% per unit package cost, per week or part there off subject to maixum of 5% will be applicable. Liquidated damages are subject to maximum of 7.5% of the contract value.
4. All demurrage on account of non readiness of contractor like non arrangement of requisite vehicles, all requisite permissions shall be borne by the contractor.

(SIGNATURE OF BIDDER)

ANNEXURE- II TO SPECIAL CONDITIONS OF CONTRACT

PREAMBLE TO SCHEDULE OF RATES/PRICE (SOR/P)

1. Bidder's quoted prices shall be strictly as per various FORMS included under Schedule of Prices. Bidder shall quote prices against each item mentioned in SOR/P. GRAND TOTAL PRICE may be referred as Engineering, Procurement, Supply and Installation of Modular Package (MPC) price and other charges to effect safe delivery of MPC packages at site and then associated service/works. MPC Contract Price quoted shall be inclusive **of all taxes**, **duties**, **except Goods and Service Tax (GST).**

2. The price quoted shall be on contract basis. Payments to contractor shall be made limited to Contract price indicated, irrespective of the progressive payments made during execution.

Obligation of the Contractor is not limited to the quantities that the Contractor may either indicate in the Schedule of Break up of Package Material Prices along with his bid or in further detailed break of lump sum prices furnished after award of work. Contractor shall carry out entire scope of work/supplies as detailed in various sections/volumes of the Bidding Document within the quoted MPC Price (Contract Price).

3. Contract prices quoted by the Bidder shall include cost of any other supplies/work(s) not specifically mentioned in the Bidding Document but necessary for the efficient, trouble free operation of the package items and to make this package complete in every respect.

4. Bidder to note that the Price as stated in Schedule of Rates/Price (Form SOR/P) shall be considered and shall form the Total Price payable under the Contract as the MPC Price before Goods &Service Tax. The GST as computed as per Para 5.4 of VOLUME I: COMMERCIAL PART II BEC shall be added to the quoted MPC Price to ascertain the Total Contract Value (Price). The Spares for start-up/commissioning and mandatory spares required are in CONTRACTOR's scope and are included in their above quoted MPC Prices. In addition, for information the bidder shall furnish mandatory spares for two years operation & maintenance (not for evaluation).

5. Bidder shall ensure that prices quoted include the complete scope of supply in totality as below :

i) Engineering including but not limited to -
   a) Provision of necessary supports for obtaining statutory approvals for individual equipment / instrument.
   b) Submission of list of BOM (Bill of materials) in soft and hard form against all materials & equipments supplied at OCS &

GGS along with quantities, manufacturer details, technical specifications etc.

c) Submission of Quality assurance, Quality Control, Quality Plan and Inspection plan.

ii) Procurement and Supply

iii) Installation and Commissioning

6. Title of Instrumentation Packages shall not be transferred by Contractor to OIL at the time of supply and brought to site, and shall be transferred by Contractor upon obtaining acceptance certificate from Consultant/Company.

SCHEDULE OF RATES/PRICES (SOR/P) FOR INSTRUMENTATION PACKAGE

	DESCRIPTION	PRICE (INR)
1.	**Nadua Instrumentation Package "Annexure-IIA"** Price covering Engineering, Supply, Installation, Testing and Commissioning including, packing/forwarding on Ex Work's basis.	
2.	**East Khagorijan Instrumentation Package "Annexure-II B"** Price covering Engineering, Supply, Installation, Testing and Commissioning including, packing/forwarding on Ex Work's basis.	
3.	**Nadua Instrumentation Package** Freight & Insurance Charges for delivery & Unloading at site Price	
4.	**East Khagorijan Instrumentation Package** Freight & Insurance Charges for delivery & Unloading at site Price	
	TOTAL (1+2+3+ 4)	
	GRAND TOTAL PRICE	

Note:

1. Price quoted 1, 2, 3 and 4 above is exclusive of GST, which is extra as applicable

2. The price in this Schedule of Rates/Prices (SOR/P) shall be considered for evaluation of the price bid.

SCHEDULE OF PAYMENTS

1A. 10 % of Package Material Price (SOR/P Item No. 1) against approval of documents and drawings identified in Contract at least in Code-2 and against submission of Advance Bank Guarantee (ABG) of equivalent amount

1B. 10 % of Package Material Price (SOR/P Item No. 2) against approval of documents and drawings identified in Contract at least in Code-2 and against submission of Advance Bank Guarantee (ABG) of equivalent amount

2A. 60% of Package Material Price (SOR/P Item No. 1) against submission of despatch documents (along with copy of LR/GR and IRN) together with full taxes, duties and transportation charges.

2B. 60% of Package Material Price (SOR/P Item No. 2) against submission of despatch documents (along with copy of LR/GR and IRN) together with full taxes, duties and transportation charges.

3A. 15% of Package Material Price (SOR/P Item No. 1) on successful Erection / Installation and completion of Commissioning.

3B. 15% of Package Material Price (SOR/P Item No. 2) on successful Erection / Installation and completion of Commissioning.

4A. 15% of Package Material Price (SOR/P Item No. 1) on successful completion of PGTR of the project works (by others) and on receipt of Final/As built Drawings/Documents/Data/Manual in requisite number of copies/sets/CDs as per VDR specified in bidding documents (to be identified during kick off meeting, if not specified in bidding documents)

4B. 15% of Package Material Price (SOR/P Item No. 2) on successful completion of PGTR of the project works (by others) and on receipt of Final/As built Drawings/Documents/Data/Manual in requisite number of copies/sets/CDs as per VDR specified in bidding documents (to be identified during kick off meeting, if not specified in bidding documents)

5. Payment for SOR Item No. 3 in SOR/P shall be limited to quoted price against submission of relevant documents.

Note:1 If the payment is not claimed as per item No.1A &1B above on account of non submission of ABG, the payment can be claimed for item no 1A,1B,2A & 2B together against despatch documents.

Note:2 All Advance Bank Guarantee submitted against Sl No. 1A and 1B shall be till receipt of Package Materials at site plus 3 months claim period

GENERAL NOTES:

(i) 1ST Milestone payment shall be released only after receipt of Performance Bank Guarantee (PBG)

(ii) wherever taxes/duties are separately indicated, theorder value shall be exclusive of taxes/duties, Amount paid on account of taxes/duties shall bepaid along with the payment released against dispatch documents on receipt ofGST tax invoice.

(iii) Payment shall be released through Electronic ClearingSystem (ECS).

(iv) All payments shall be released within 30 days of receipt of invoice and all requisite documents, complete in all respects

(v) All bank charges of respective bankers shall be to respective account.

(vi) Supplier shall submit Billing Schedule, wherever applicable, within three weeks ofaward for OIL/Consultant approval. Suppliers requiring multiple despatches will restrictthe number of despatches to maximum three, unless agreed otherwise by ProjectManager.

(vii) Bidders to arrange for necessary/applicable road permits/e-way bill for every dispatch.

(viii) In case site is not available up to Six (6) months (wherever site work is applicable),after receipt of all supplies at site, the payment against the same shall be released onsubmission of additional Bank Guarantee of equivalent amount valid for One year (1) or such extended period as may be required.

ANNEXURE II- A: BREAK UP OF SCHEDULE OF RATES/PRICES

NOT APPLICABLE

[ANNEXURE - III TO SPECIAL CONDITIONS OF CONTRACT]

APPROVAL OF CONSTRUCTION SUB-CONTRACTOR

NOT APPLICABLE

[ANNEXURE - IV TO SPECIAL CONDITIONS OF CONTRACT]

QUALIFICATION & EXPERIENCE OF KEY SUPERVISORY PERSONNEL

1. Project Manager: Engineering Graduate with 10 years experience in engineering or fabrication or construction experience in Upstream Oil and Gas Industry. Should have been having atleast two years project management experience previous

2. Lead Engineers (Mechanical, Electrical, and Instrumentation): Engineering Graduate in respective branch and having at least 05 years engineering experience.

3. Procurement Manager: Engineering Graduate with atleast 05 years of procurement experience.

4. Fabrication Manager: Engineering Graduate with atleast 05 years of module fabrication experience.

5. HSE Officer: Graduate with 5 years experience in HSE job/Diploma in HSE having experience of minimum 05 years working as Safety Officer in engineering construction job.

6. QA/QC Manager: Engineering Graduate with 5 years experience on QA/QC job/Diploma in engineering with 07 years of QA/QC job.

[ANNEXURE - V TO SPECIAL CONDITIONS OF CONTRACT]

QUALITY MANAGEMENT SYSTEM

MPC CONTRACTOR TO SUBMIT THEIR QUALITY MANAGEMENT POLICY AND QUALITY MANUAL WITH QMS CERTIFICATE

[ANNEXURE - VI TO SPECIAL CONDITIONS OF CONTRACT]

HEALTH, SAFETY AND ENVIRONMENT (HSE) MANAGEMENT

MPC CONTRACTOR TO SUBMIT THEIR HSE MANAGEMENT POLICY AND HSE MANUAL WITH HSE CERTIFICATE

ANNEXURES TO BID PACKAGE

ANNEXURE –A: LIST OF ITEMS

(Related To NIL Customs Duty and Concessional GST Applicable for Projects in ML/PEL Area)

1. Land Seismic Survey Equipment and accessories, requisite vehicles including those for carrying the equipment, seismic survey vessels, global positioning system and accessories, and other materials required for seismic work or other types of Geophysical and Geochemical surveys for onshore and offshore activities.
2. All types of drilling rigs, jack up rigs, submersible rigs, semi-submersible rigs, drill ships, drilling barges, shot-hole drilling rigs, mobile rigs, work over rigs consisting of various equipment and other drilling equipment required for drilling operations, snubbing units, hydraulic work over units, self-elevating work over platforms, Remote Operated Vessel (ROV)
3. Helicopters including assemblies / parts
4. All types of marine vessels to support petroleum operations including work boats, barges, crew boats, tugs, anchor handling vessels, lay barges and supply boats, marine ship equipment including water maker, DP system and Driving system.
5. All types of equipment/ units for specialised services like diving, cementing, logging, casing repair, production testing, simulation and mud services, oil field related lab equipment, reservoir engineering, geological equipment, directional drilling, stimulation, Coil Tubing units, Drill Stem Testing (DST),Data acquisition and processing, solids control, fishing (as related to down hole retrieval in oil field operations or coal bed methane operations), well control, blowout prevention (BOP), pipe inspection including Non Destructive Testing, coring, gravel pack, well completion and work over for oil/gas/ CBM wells including wireline and down hole equipment.
6. All types of casing pipes, drill pipes, production tubing, pup joints, connections, coupling, Kelly, cross overs and swages, Drive Pipes.
7. All types of drilling bits, including nozzles, breakers and related tools
8 All types of oil field chemicals or coal bed methane operations, oil well cement and cement additives, required for drilling, production and transportation of oil or gas.
9. Process, production and well platforms/ installation for oil, gas or CBM and water injection including items forming part of the platforms/ installation and equipment required like process equipment, turbines, pumps, generators, compressors, prime movers, water makers, filters and filtering equipment, telemetery, telecommunication, tele-control and other material required for platforms/ installations

10. Line pipes for flow lines and trunk pipelines including weight-coating and wrapping.
11. Derrick barges, Mobile and stationary cranes, trenchers, pipe lay barges, cargo barges and the like required in the construction / installation of platforms and laying of pipelines.
12. Single buoy mooring systems, mooring ropes, fitting like chains, shackles, couplings marine hoses and oil tankers to be used for oil storage and connected equipment, Tanks used for storage of oil, condensate, coal bed methane, water, mud, chemicals and related materials.
13. All types of fully equipped vessels and other units/equipment required for pollution control, fire prevention, fire fighting, safety items like Survival Craft, Life Raft, fire and gas detection equipment, including H2S monitoring equipment.
14. Mobile and skid mounted pipe laying, pipe testing and pipe inspection equipment.
15. All types of valves including high pressure valves
16. Communication equipment required for petroleum or coal bed methane operations including synthesized VHF Aero and VHF multi channel sets/ VHF marine multi channel sets.
17. Non-directional radio beacons, intrinsically safe walkie-talkies, directional finders, EPIRV, electronic individual security devices including electronic access control system.
18. Specialized antenna system, simplex telex over radio terminals, channel micro wave systems, test and measurement equipment,
19. X-band radar transponders, area surveillance system.
20. Common depth point (CDP) cable, logging cable, connectors, geo-phone strings, perforation equipment and explosives
21. Wellhead and Christmas trees, including valves, chockes, heads spools, hangers and actuators, flexible connections like chicksons and high pressure hoses, shut down panels
22. Cathodic Protection Systems including anodes

23. Technical drawings, maps, literature, data tapes, Operational and Maintenance Manuals required for petroleum or coal bed methane operations
24. Sub-assemblies, tools accessories, stores, spares, materials, supplies, consumables for running, repairing or maintenance of the goods.

ANNEXURE –B: INTEGRITY PACT

INTEGRITY PACT

Between

Oil India Limited (OIL) hereinafter referred to as "The Principal"

And

(Name of the bidder).....hereinafter referred to as "The Bidder/Contractor"

Preamble:

The Principal intends to award, under laid down organizational procedures, contract/s for .....The Principal values full compliance with all relevant laws and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder/s and Contractor/s.

In order to achieve these goals, the Principal co-operates with the renowned international Non-Governmental Organisation "Transparency International" (TI). Following TI's national and international experience, the Principal will appoint an External Independent Monitor who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1 - Commitments of the Principal

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

1. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for him/herself or third person, any material or immaterial benefit which he/she is not legally entitled to.

2. The Principal will, during the tender process treat all Bidders with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidders the same information and will not provide to any Bidder confidential/additional information through which the Bidder could obtain an advantage in relation to the tender process or the contract execution.

3. The Principal will exclude from the process all known prejudiced persons.

(2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the relevant Anti-Corruption Laws of India, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

Section 2 - Commitments of the Bidder/Contractor

(1) The Bidder/Contractor commits itself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

1. The Bidder/Contractor will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or immaterial benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

2. The Bidder/Contractor will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies inparticular to prices, specifications, certifications, Subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelisation in the bidding process.

3. The Bidder/Contractor will not commit any offence under the relevant Anti-corruption Laws of India; further the Bidder/Contractor will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

4. The Bidder/Contractor will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

(2) The Bidder/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.

(3) The Bidder/Contractor signing Integrity Pact shall not approach the Courts while representing the matters to IEMs and he/she will await their decision in the matter.

Section 3- Disqualification from tender process and exclusion from future Contracts

If the Bidder, before contract award has committed a transgression through a violation of Section 2 or in any other form such as to put his reliability or risibility as Bidder into question, the Principal is entitled to disqualify the Bidder from the tender process or to terminate the contract, if already signed, for such reason.

1. If the Bidder/Contractor has committed a transgression through a violation of Section 2 such as to put his reliability or credibility into question, the Principal is entitled also to exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressions within the company hierarchy of the Bidder and the amount of the damage. The exclusion will be imposed for a minimum of 6 months and maximum of 3 years.

2. The Bidder accepts and undertakes to respect and uphold the Principal's Absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.

3. If the Bidder/Contractor can prove that he has restored/recouped the Damage caused by him and has installed a suitable corruption prevention system, the Principal may revoke the exclusion prematurely.

4.A transgression is considered to have occurred if in light of available evidence no reasonable doubt is possible.

5. Integrity Pact, in respect of a particular contract, shall be operative from the date Integrity Pact is signed by both the parties till the final completion of the contract or as mentioned in Section 9 – Pact Duration whichever is later. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings.

Section 4 - Compensation for Damages

1. If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover from the Bidder liquidated damages equivalent to Earnest Money Deposit/Bid Security.

2. If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to Security Deposit/Performance Bank Guarantee.

3. The bidder agrees and undertakes to pay the said amounts without protest or demur subject only to condition that if the Bidder/Contractor can prove and establish that the exclusion of the Bidder from the tender process or the termination of the contract after the contract award has caused no damage or less damage than the amount or the liquidated damages, the Bidder/Contractor shall compensate the Principal only to the extent of the damage in the amount proved.

Section 5 - Previous transgression

1. The Bidder declares that no previous transgression occurred in the last 3 years with any other Company in any country conforming to the TI approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.

2. If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6 - Equal treatment of all Bidders/Contractor/Subcontractors

1. The Principal will enter into Pacts on identical terms with all bidders and contractors.
2. The Bidder/Contractor undertakes to demand from all subcontractors a commitment in conformity with this Integrity Pact. The bidder/contractor shall be responsible for any violation(s) of the provisions laid down in this Agreement/Pact by any of its sub-contractors/sub-vendors.

3. The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7 - Criminal charges against violating Bidders/Contractors/Sub-contractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Sub-contractor, or of an employee or a representative or an associate of a Bidder, Contractor or Sub-contractor, which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section 8 - External Independent Monitor/Monitors

1. The Principal appoints competent and credible External Independent Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

2. The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairperson of the Board of the Principal.

3. The Contractor accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Sub-contractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder/Contractor/Subcontractor with confidentiality.

4. The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

5. As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or heal the violation, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

6. The Monitor will submit a written report to the Chairperson of the Board of the Principal within 8 to 10 weeks from the date of reference or intimation to

him by the 'Principal' and, should the occasion arise, submit proposals for correcting problematic situations.

7. If the Monitor has reported to the Chairperson of the Board a substantiated suspicion of an offence under relevant Anti-Corruption Laws of India, and the Chairperson has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

8. The word 'Monitor' would include both singular and plural.

Section 9 - Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the respective contract, and for all other Bidders 6 months after the contract has been awarded.

If any claim is made/lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by Chairperson of the Principal.

Section 10 - Other provisions

1. This agreement is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal, i.e. New Delhi. The Arbitration clauses provided in the main Tender document/contract shall not be applicable for any issue/dispute arising under Integrity Pact.

2. Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

3. If the Contractor is a partnership or a consortium, this agreement must be, signed by all partners or consortium members.

4. Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intensions.

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For the Principal	For the Bidder/Contractor
Place: Duliajan. Date : .	Witness 1 : ..... Witness 2 : .....

ANNEXURE -C

PROFORMA OF CONSORTIUM AGREEMENT

NOT APPLICABLE.

ANNEXURE-D

VENDOR SELECTION CRITERIA

1.0 GENERAL:

(i) The Instrumentation Package / Equipment / system (with all its sub-systems) as being offered / supplied should have been installed and operating satisfactorily in similar application for at least the period as mentioned in the individual package / equipment / system / sub-system (as collaborated by user certificate).

(ii) The Instrumentation Package / Equipment / system should be supplied, engineered & tested from a factory from where the Package / Equipment / system / sub-systems as offered / supplied, engineered & tested/ have already been supplied and meet the criteria 1(i) above.

(iii) All the activities including engineering should be carried out by the engineering firm which has carried out the similar activity in the past and meets the criteria 1(i) above.

(iv) The system should be supplied by the manufacturer/authorized dealer in the fully engineered condition or should be supplied by the manufacturer's representative/ subsidiary (except basic engineering- refer responsibility chart and explanation given above) who have proper infrastructural facilities and meets the criteria 1(i) above.

(v) The design life of the Package / Equipment / system shall be as mentioned in individual package.

(vi) Vendor List for Package / Equipment / system is NOT provided elsewhere in the Bid package. For any Package / Equipment / system, the offered items for the same must meet the tender specifications and proven track record (PTR) requirement. The responsibility of ensuring the performance of these items as per tender specification is EPC responsibility. Any vendor who meets the vendor selection criteria such as EQC and PTR requirement shall be considered for this project and also for the items where selection criteria (like EQC, PTR) is not provided, in such cases vendor has to arrange for procurement by strictly complying to the tender specifications and the responsibility of ensuring the quality of these items as per tender specification is EPC responsibility.

(vii) Vendors on Owner holiday list shall not be considered for ordering. Names of such vendors who are put on Owner "Holiday List" subsequent to vendor approval at bidding stage shall be informed to the EPC CONTRACTOR at any stage of the project. CONTRACTOR shall comply with this requirement without any time or cost implication to the OWNER.

(viii) No obsolete equipment / package / system will be acceptable.

(ix) The equipment selected shall be rugged in design and must be field proven. Prototype design or equipment of experimental nature or design undergoing testing etc. shall not be selected and supplied.

(x) Any equipment/ package / systems offered by the vendor for this project has to ensure that continued support services such as technical support,

availability of spares etc. are provided for a period of at least 10 (ten) years from the date of commissioning.

2.0 INSTRUMENTATION SYSTEM / SUB-SYSTEM

2.1 REQUIREMENT FOR FIELD PROVEN QUALITY OF ITEMS

2.1.1 The system/sub-system/bought out items and services as offered should have been supplied and working satisfactorily for a period of minimum 8000 hrs. in a similar application.

2.1.2 The instrumentation selected shall be rugged in design and must be field proven. Prototype design or equipment of experimental nature or design undergoing testing etc. shall not be selected and supplied.

2.1.3 Following criteria must be applied before selecting a particular instrument item:

a) For Instrument Items (Other than Systems)

The instruments as being offered / supplied should have been operating satisfactorily in similar process conditions for at least 8000 hrs. in the last seven years.

b) For System Oriented Item

The system (with all its sub-systems) as being offered / supplied should have been installed and operating satisfactorily in similar application for at least 8000 hrs. (as collaborated by user certificate).

2.1.4 Contractor is responsible to comply with the total scope of work indicated in the package regarding the Plant Control, Monitoring and Interlock system and meeting all the functional requirements specified in this package for the same, through hardware and software, during detail engineering. Accordingly the Bill of Material (BOM) is contractor's responsibility. Any Change, modification or addition necessary in the proposed BOM or scope of work necessary to achieve the functional requirements during detail engineering shall be carried out by contractor within the project schedule and without any implications.

2.1.5 Contractor shall be fully responsible for proper engineering, integration, installation, performance and operation of all equipments including I/O and marshalling racks, and bought-out items supplied by them (when integrated with the main system) as per the requirements.

2.1.6 Further the following are Contractor's scope/responsibility:

a) 230 V AC UPS/230VAC Non UPS/24 V DC Power Distribution shall be prepared by contractor.

b) Spares as specified in the package are included.

c) BOM shall be finalized during detail engineering.

d) Contractor shall be bound to incorporate owner's comments in line with package requirements without any implication.

e) Contractor shall be responsible to engineer the system based on the inputs provided by owner. In case of any conflict or interpretational understanding owner decision shall be final.

f) Functional Schematics and logic diagrams prepared by contractor to be furnished of Owner review before development of application software.

g) Contractor shall be responsible to incorporate owner comments during engineering and demonstrate the same during integrated FAT.

h) Contractor shall be responsible to incorporate all pre-commissioning and commissioning comments of owner.

i) Contractor shall be responsible to involve sub-vendors for all engineering, engineering reviews, system definition and software definition meeting, drawing/document review meeting without any exception as per responsibility chart.

j) It is contractor's responsibility to furnish instrument installation standards based on the base drawing furnished with this bid package.

k) Contractor shall provide detailed System Architecture diagram in line with this package and indicating major hardware models and software loaded in each machine to meet the functional requirements of this package.

Contractor shall provide all system related documentation and loop drawing complete with terminal numbers and locations before the system integrated factory acceptance.

2.1.7 PROVEN TRACK RECORD (PTR)

Vendor shall complete the Experience Record Performance to amply prove that the Equipment offered meets the EQC for technical acceptance. Vendor may furnish additional information to justify that the EQC is being met. In addition, manufacturer's catalogue and general reference list for all the above equipment shall also be furnished along with the bid/proposal.

3.0 CEMENT AND STRUCTURAL STEEL :NOT APPLICABLE

&&&&&&&&

PROFORMAS

PROFORMA-A LIST OF ITEMS

(Equipment, Tools, Accessories, Spares & Consumables)

TO BE IMPORTED INCONNECTION WITH EXECUTION OF THE CONTRACT SHOWING CIF VALUE

NOT APPLICABLE

PROFORMA-A1

FORMAT FOR CALCULATION OF LOCAL CONTENT- GOODS

NOT APPLICABLE

PROFORMA-B
BIDFORM

To
M/s. Oil India Limited,
P.O. Duliajan, Assam, India

Sub: IFB No.

Gentlemen,

Having examined the General and Special Conditions of Contract and the Terms of Reference including all attachments thereto, the receipt of which is hereby duly acknowledged, we the undersigned offer to perform the services in conformity with the said conditions of Contract and Terms of Reference for the sum of _____ (Total Bid Amount in words and figures) or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Bid.

We undertake, if our Bid is accepted, to commence the work within (_____) days calculated from the date both parties have signed the Contract.

If our Bid is accepted, we will obtain the guarantee of a bank in a sum not exceeding _____ for the due performance of the Contract.

We agree to abide by this Bid for a period of 120 days from the date fixed for Bid closing and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof in your notification of award shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any Bid you may receive.

Dated this _____ day of _____ 2018.

Authorised Person's Signature: _____

Name: _____
Designation:_____
Seal of the Bidder:

PROFORMA-C

STATEMENT OF NON-COMPLIANCE
(Only exceptions/deviations to be rendered)

1.0 The Bidder shall furnish detailed statement of exceptions/deviations, if any, to the tender stipulations, terms and conditions in respect of each Section of Bid Document in the following format:

Section No.	Clause No. (Page No.)	Non-Compliance	Remarks

Authorised Person's Signature: _____

Name: _____
Designation:_____

Seal of the Bidder:

NOTE: OIL INDIA LIMITED expects the bidders to fully accept the terms and conditions of the bid document. However, should the bidders still envisage some exceptions/deviations to the terms and conditions of the bid document, the same should be indicated as per above format and submit along with their bids. If the "Statement of Compliance" in the above Proforma is left blank (or not submitted along with the technical bid), then it would be construed that the bidder has not taken any exception/deviation to the tender requirements.

PROFORMA-D

FORM OF BID SECURITY (BANK GUARANTEE)

To:
M/s. OIL INDIA LIMITED,
GM (Projects - C&P),
Projects Department,
Oil India Ltd.,
P.O. Duliajan - 786 602
Assam, India

WHEREAS, (Name of Bidder) _____ (hereinafter called "the Bidder") has submitted their offer Dated _____ for the provision of certain oil field services (hereinafter called "the Bid") against OIL INDIA LIMITED, Duliajan, Assam, India (hereinafter called the Company)'s IFB No. KNOW ALL MEN BY these presents that we (Name of Bank) _____ of (Name of Country) _____ having our registered office at _____ (hereinafter called "Bank") are bound unto the Company in the sum of (*) for which payment well and truly to be made to Company, the Bank binds itself, its successors and assignees by these presents. SEALED with the common seal of the said Bank this ___ day of ___ 2018.

THE CONDITIONS of these obligations are:

(1) If the Bidder withdraws their Bid during the period of Bid validity specified by the Bidder; or

(2) If the Bidder, having been notified of acceptance of their Bid by the Company during the period of Bid validity:

(a) Fails or refuses to execute the form of agreement in accordance with the Instructions to Bidders; or

(b) Fails or refuses to furnish the Performance Security in accordance with the Instructions to Bidders;

We undertake to pay to Company up to the above amount upon receipt of its first written demand (by way of letter/fax/cable), without Company having to substantiate its demand provided that in its demand Company will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including the date(**) and any demand in respect thereof should reach the Bank not later than the above date.

SIGNATURE AND SEAL OF THE GUARANTORS _____
Name of Bank & Address _____

Witness _____
Address _____

_____
(Signature, Name and Address)
Date: _____
Place: _____

* The Bidder should insert the amount of the guarantee in words and figures.

** Date of expiry of Bank Guarantee should be as specified in the tender document.

Note: The bank Guarantee issued by the Bank must be routed through SFMS Platform as per following details:

a. (i) "MT 760/MT 760 COV for issuance of Bank Guarantee
(ii) MT 760/MT 767 COV for amendment of Bank Guarantee

The above Message/Intimation shall be sent through SFMS by the BG issuing Bank Branch to Axis Bank, Duliajan Branch, IFS Code- UTIB0001129.
Branch Address: Axis Bank Ltd., Duliajan Branch, Daily Bazar, Jyotinagar, Duliajan, District: Dibrugarh, PIN: 786602"

b. Bidders should submit the copy of SFMS Message as sent by the issuing Bank Branch along with the original Bank Guarantee.

PROFORMA –E

FORM OF PERFORMANCE BANK GUARANTEE

To:
M/s. OIL INDIA LIMITED,
GM (Projects - C&P),
Projects Department,
Oil India Ltd.,
P.O. Duliajan - 786 602
Assam, India

WHEREAS _____ (Name and address of Contractor) (hereinafter called "Contractor") had undertaken, in pursuance of Contract No. _____ to execute (Name of Contract and Brief Description of the Work) _____ (hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee as security for compliance with Contractor's obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee; NOW THEREFORE we hereby affirm that we are Guarantors on behalf of the Contractor, up to a total of (Amount of Guarantee in figures) _____ (in words _____), such amount being payable in the types and proportions of currencies in which the Contract price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of guarantee sum as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein. We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or the work to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way cease us from any liability under this guarantee, and we hereby waive notice of such change, addition or modification.

This guarantee is valid until the date _____ (calculated at 3 months after Contract completion date and defect liability period).

SIGNATURE AND SEAL OF THE GUARANTORS _____
Designation _____
Name of Bank _____
Address _____

Witness _____
Address _____
_____

Date .....
Place _____

Note :Note: The bank Guarantee issued by the Bank must be routed through SFMS Platform as per following details:

a. (i) "MT 760/MT 760 COV for issuance of Bank Guarantee
(ii) MT 760/MT 767 COV for amendment of Bank Guarantee

The above Message/Intimation shall be sent through SFMS by the BG issuing Bank Branch to Axis Bank, Duliajan Branch, IFS Code- UTIB0001129. Branch Address: Axis Bank Ltd., Duliajan Branch, Daily Bazar, Jyotinagar, Duliajan, District: Dibrugarh, PIN: 786602"

b. The Contractor/Supplier should submit the copy of SFMS Message as sent by the issuing Bank Branch along with the original Bank Guarantee.

PROFORMA-F

AGREEMENT FORM

This Agreement is made on ____ day of _____ between Oil India Limited, a Government of India Enterprise, incorporated under the Companies Act 1956, having its registered office at Duliajan in the State of Assam, hereinafter called the "Company" which expression unless repugnant to the context shall include executors, administrators and assignees on the one part, and M/s _____ (Name and address of Contractor) hereinafter called the "Contractor" which expression unless repugnant to the context shall include executors, administrators and assignees on the other part,

WHEREAS the Company desires that Supply of _____ (brief description of supplies) should be provided by the Contractor as detailed hereinafter or as Company may requires;

WHEREAS, Contractor engaged themselves in the business of offering such supplies represents that they have adequate resources and equipment, material etc. in good working order and fully trained personnel capable of efficiently undertaking the operations and is ready, willing and able to carry out the said supplies for the Company as per Section-II attached herewith for this purpose and

WHEREAS, Company accepted the bid submitted by the Contractor and had issued a firm Letter of Award No. _____ dated _____ based on Offer No. _____ dated _____ submitted by the Contractor against Company's IFB No. _____.All these aforesaid documents shall be deemed to form and be read and construed as part of this agreement/contract. However, should there be any dispute arising out of interpretation of this contract in regard to the terms and conditions with those mentioned in Company's tender document and subsequent letters including the Letter of Intent and Contractor's offer and their subsequent letters, the terms and conditions attached hereto shall prevail. Changes, additions or deletions to the terms of the contract shall be authorized solely by an amendment to the contract executed in the same manner as this contract.

NOW WHEREAS, in consideration of the mutual covenants and agreements hereinafter contained, it is hereby agreed as follows -

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. In addition to documents herein above, the following Sections and Annexures attached herewith shall be deemed to form and be read and construed as part of this agreement viz.:

(a)	Part I	indicating the General Conditions of this Contract;
(b)	Part III Section-1	indicating the Terms of Reference;
(c)	Part III Section-2	indicating the Special Terms & Condition;
(d)	Part III Section- 2	indicating the Schedule of Rates.

3. In consideration of the payments to be made by the Company to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Company to provide the Services and to remedy defects therein in conformity in all respect with the provisions of this Contract.

4. The Company hereby covenants to pay the Contractor in consideration of the provision of the Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of this Contract at the times and in the manner prescribed by this Contract.

IN WITNESS thereof, each party has executed this contract at Duliajan, Assam as of the date shown above.

Signed, Sealed and Delivered,

For and on behalf of Company (Oil India Limited)	for and on behalf of Contractor (M/s. _____)
Name:	Name:
Status:	Status:
In presence of	In presence of
1.	1.
2.	2.

PROFORMA–G

PROFORMA OF LETTER OF AUTHORITY

TO
GM (Projects - C&P),
Projects Department,
Oil India Ltd.,
P.O. Duliajan - 786 602
Assam, India

Sir,

Sub: OIL's IFB No. ----------

We _____ confirm that Mr. _____ (Name and address) as authorised to represent us to Bid, negotiate and conclude the agreement on our behalf with you against Tender Invitation No. _____ for the supply of _____.

We confirm that we shall be bound by all and whatsoever our said representative shall commit.

Yours Faithfully,

Authorised Person's Signature: _____

Name: _____
Designation: _____

Seal of the Bidder:

Note: This letter of authority shall be on printed letter head of the Bidder and shall be signed by a person competent and having the power of attorney (**power of attorney shall be annexed**) to bind such Bidder.

PROFORMA–H

AUTHORISATION FOR ATTENDING BID OPENING

TO
GM (Projects - C&P),
Projects Department,
Oil India Ltd.,
P.O. Duliajan - 786 602
Assam, India

Date: _____

Sir,

Sub : OIL's IFB No. ----------

We authorise Mr. /Mrs. _____ (Name and address) to be present at the time of opening of the above IFB due on _____ at Duliajan on our behalf.

Yours Faithfully,

Authorised Person's Signature: _____

Name: _____
Designation: _____

Seal of the Bidder:

Note: This letter of authority shall be on printed letter head of the Bidder and shall be signed by a person who signs the bid.

PROFORMA-I

BIDDER'S GENERAL INFORMATION

To
OIL INDIA LTD.

1-1 Bidder Name: _____

1-2 Number of Years in Operation: _____

1-3 Address of Registered Office: _____

City_____ District _____

State _____ PIN/ZIP_____
Country

1-4 Operation Address
if different from above: _____

_____

City_____ District _____

State _____ PIN/ZIP_____
Country

1-5 Telephone Number: _____

(Country Code) (Area Code) (Telephone No.)

1-6 E-mail address: _____

1-7 Website: _____

1-8 Fax Number: _____

(Country Code) (Area Code) (Telephone No.)

1-9 ISO Certification, if any {If yes, please furnish details}

1-10 Banker's Name : _____

1-11 Branch : _____

1-12 Branch Code : _____

1-13 Bank account number : _____

1-14 GST Registration number : _____

1-15 GSTRange : _____

1-16 GSTDivision : _____

1-17 PAN/Tax Identification No. :

PROFORMA-J

SUB PROFORMA J1

PROFORMA FOR SUBMISSION OF DETAILS OF SPECIFIC EXPERIENCE AND ANNUAL TURNOVER DETAILS AS CALLED IN "QUALIFICATION CRITERIA"OF INVITATION FOR BID

1. Name of the Bidder :

2. Bidder to specify the details of work(s) executed by the Bidder complying the requirement of IFB Experience details as below

SNo	Name& Description of Work	WO No & Date	WO Value	Completion Certificate & Date	Completion Date	Executed Value (excluding tax)

3. Submission of Documentary Evidence:

   i) Copy of Work Order — Submitted/ Not Submitted

   ii) Copy of Completion Certificate — Submitted/ Not Submitted

   Bidder must ensure that all details filled at Sr. No.2 above are covered in work order/ completion certificate. In case certain detailed are not covered, bidder may submit additional authenticated document/ certificate in respect of the same.

4. Annual turnover for the last three financial years :

   i) Year 1 :

   ii) Year 2 :

   iii) Year 3 :

5. Submission of Documentary Proof :

   (i) Audited Balance Sheet including Profit Loss Accounts Statement for the last three years of the Bidder — Yes/No

NOTE:

i) Bidder shall furnish the experience details as above only of those projects which they consider suitable for meeting the Qualification Criteria. OIL reserves the right not to evaluate any other project details. Details of more projects may be furnished in the same format, if desired.

ii) Bidder to note that non-submission of relevant supporting documents may lead to rejection of their bid. It shall be ensured that all relevant supporting documents are submitted alongwith their bid in the first instance itself. Evaluation may be completed based on the details so furnished without seeking any subsequent additional information.

SIGNATURE OF THE BIDDER : _____

NAME OF THE BIDDER : _____

COMPANY SEAL : _____

SUB PROFORMA J2

ANNUAL TURNOVER STATEMENT

The bidder shall indicate herein his Annual Turnover during preceding 3 years based on the audited balance sheet/profit & loss account statement.

FINANCIAL YEAR	ANNUAL TURNOVER (INR.)
Year 1	
Year 2	
Year 3	

NOTE:

1. Copies of audited balance sheets with Profit & Loss account statement for last 3 years are enclosed along with the bid.
2. A brief note should be appended describing thereby details of turnover as per audited results..
3. In case of tenders having the bid closing date up to 30th September of the relevant financial year and audited financial results of immediate 3 preceding financial year being not available, the bidder has an option to submit the audited financial results of three years immediately prior to relevant financial year. Wherever, the bid closing date is after 30th September of the relevant financial year, bidder has to compulsorily submit the audited financial results of immediate preceding three financial years.However the bidder hasto submit an affidavit/ undertaking certifying that "the balance sheet /finanicial statement of the preceding financial yeat has actually not been audited so far"

SIGNATURE OF BIDDER : _____

NAME OF BIDDER : _____

SUB PROFORMA J3

FORMAT FOR CHARTERED ACCOUNTANT / STATUTORY AUDITOR CERTIFICATE FOR FINANCIAL CAPABILITY OF THE BIDDER

We have verified the Annual Accounts and other relevant records of M/s..... (Name of the bidder) and certify the following

A. ANNUAL TURNOVER OF LAST 3 YEARS:

Year	Amount (Currency)
Year 1:	
Year 2:	
Year 3:	

B. FINANCIAL DATA FOR LAST AUDITED FINANCIAL YEAR :

Description	Year _____
	Amount (Currency)
1. Current Assets	
2. Current Liabilities	
3. Working Capital (Current Assets-Current liabilities)	
4. Net Worth (Paid up share capital and Free Reserves & Surplus)	

Name of Audit Firm:
Chartered Accountant
Date:

[Signature of Authorized Signatory]
Name:
Designation:
Seal:

Membership no.

Instructions:

1. The financial year would be the same as one normally followed by the bidder for its Annual Report.
2. The bidder shall provide the audited annual financial statements as required for this Tender document. Failure to do so would result in the Proposal being considered as non responsive.
3. For the purpose of this Tender document, (i) Annual Turnover shall be "Sale value/ Operating Income" (ii) Working Capital shall be "Current Assets less

Current liabilities" and (iii) Net Worth shall be "Paid up share capital and Free Reserves & Surplus"

This certificate is to be submitted on the letter head of Chartered Accountant.

PROFORMA-K

CONTRACT EXECUTION PLAN

The execution of the contract includes Engineering, Procurement, Supply , Installation and Commissioning of Instrumentation Packages to site.

OIL/Consultant will receive the packages at site (in presence of package supplier representative). Further MPC contractor/ package supplier has to guarantee Performance Guarantee Test Run (PGTR) of the Instrumentation Package he is supplying.

The technical specification and details for constructing/ fabricating Instrumentation Package are enclosed in the Vol-II of the tender document.

MPC contractor has to provide a detailed level 4 schedule in MS Projects/Prime Vera, detailing all the activities of the contract. This shall be part of the bid.

PROFORMA-L

DETAILS OF SIMILAR WORK COMPLETED DURING LAST FIVE YEARS.

PROFORMA-M

PROJECT SCHEDULE FOR COMPLETION OF MAJOR ACTIVITIES

The scheduled period for delivery of Instrumentation Package at OCS Nadua and GGS East Khagorijan is as per ANNEXURE-I from the date of issue of LOA/LOI.

MPC Contractor shall provide a detailed schedule (prepared in MS Projects / Prime Vera) highlighting major activities involved from engineering until commissioning of packages.

PROFORMA N

1. DETAILS OF P.F. & ESI REGISTRATION (As Applicable)

Bidder to furnish details of Provident Fund Registration and ESI Number:

PF REGISTRATION NO. :

DISTRICT & STATE :

ESI NO. :

We hereby confirm that the above PF Account is under operation presently and shall be used for all PF related activities for the labour engaged by us in the present work (if awarded to us).

SIGNATURE OF BIDDER :_____

NAME OF BIDDER :_____

COMPANY SEAL :_____

PROFORMA-O

REPLY TO COMMERCIAL QUESTIONNARIE

COMMERCIAL QUESTIONNAIRE

Sr. No.	Commercial Query	Bidder's Reply / Confirmation
1	Please confirm that Main Index Document along with Amendment, if any, duly signed and stamped on each page has been submitted along with the Bid.	
2	Confirm that all pages of the Bid have been numbered in sequential manner	
3	Confirm that Bid has been submitted to OIL's E-Procurement website as specified in Instructions to Bidders.	
4	Confirm that you have studied complete Bidding document including technical and commercial part and your Bid is in accordance with the requirements of the Bidding documents.	
5	Confirm that the price part does not include any terms and conditions. In case any terms and conditions are mentioned in the price part, the same shall be treated as null and void.	
6	Confirm your compliance to total scope of work mentioned in the Bidding document.	
7	Confirm your acceptance for "SCOPE OF SUPPLY" mentioned in the Bidding Document. Please note that scope of supply mentioned in the Bidding document is not limitative and shall include supply of all materials required for completion of Work irrespective of whether such materials are mentioned in the Bidding document or not.	

Sr. No.	Commercial Query	Bidder's Reply / Confirmation
8	Confirm your acceptance for time schedule as per Bidding Document.	
9	Confirm that your Bid is substantially responsive to the requirements of the Bidding document, and you have not stipulated any material deviation and submitted all details as specified in the Bidding document.	
10	Confirm that proposed fabrication facility is having qualified managerial and supervisory personnel having sufficient experience. .	
11	Confirm that all costs resulting from safe execution of work, such as safety induction, use of protective clothing, safety glasses and helmet etc. have been considered, including any special safety measures required to be taken or any other safety measures to be undertaken for the execution of Work are included in the quoted price.	
12	Please confirm that all safety rules & regulations as mentioned in Bidding Document shall be adhered by bidder within quoted price.	
13	Confirm the following : "The planning schedule, S-curves, manpower estimates, construction equipment deployment schedule etc; submitted by the bidder with his bid, are indicative and shall not be basis for extra compensation in case actual needs are higher. Detailed planning schedule developed by MPC CONTRACTOR after Contract award may be subject to fluctuations depending	

Sr. No.	Commercial Query	Bidder's Reply / Confirmation
	upon actual progress of the project. Notwithstanding the above provision, the bidder shall submit these details in accordance with the volume of work which may be reviewed and commented by us during pre award stage / post award stage.	
14	Please furnish the biodata of key personnel including nominated Project Director/Project Manager, Engineering Manager, Engineering Co-ordinator, Purchase Manager, QA / QC Manager, etc. These will be reviewed and approved by CONSULTANT	
15	Please confirm that all chemicals, consumables etc. required for initial charge as per provision of Bidding document shall be supplied by the MPC CONTRACTOR.	
16	Please confirm, you shall submit PACKING LIST, conforming bid requirement.	
17	Please confirm that your bid is valid for 120 days from the date of closing of bid.	

STAMP AND SIGNATURE OF BIDDER

PROFORMA-P

INCOME TAX PAN NUMBER PF REGISTRATION NUMBER (AS APPLICABLE)

TO BE PROVIDED BY THE BIDDER

PROFORMA-Q

CHECKLIST FOR SUBMISSION OF BID

Bidder is requested to fill this check list and ensure that all details/documents have been furnished as called for in the Bidding Document along with duly filled in, signed & stamped checklist with each copy of the "Techno-Commercial bid".
Please tick the box and ensure compliance:

(1.0) Pro-Forma of Acknowledgement Letter & Intention to Bid

Submitted ☐

(2.0) Pro-Forma of Declaration of blacklisting / holiday listing

Submitted ☐

(3.0) Power of Attorney in Favour of the person who has signed the bid on stamp paper of Appropriate value

Submitted ☐

(4.0) Submission of documents to establish conformity with Bidder's Qualification Criteria as per Instruction to bidder (ITB)

Submitted ☐

(5.0) Partnership Deed in case of partnership firm and Article of Association (AOA) / Memorandum of Association (MOA) in case of limited company

Submitted ☐ Not Applicable ☐

(6.0) Present/ Concurrent Commitments as per IFB

Submitted ☐

(7.0) Schedule of Deviations to General & Commercial conditions as per IFB

Submitted ☐

(8.0) Schedule of Deviations to technical specifications as per IFB

Submitted ☐

(9.0) Overall schedule for completion of work in the form of Bar Chart

Submitted ☐

(10.0) Commercial Details/ Documents specified in part – I: Commercial

Submitted ☐

(11.0) Technical Details/ Documents specified in part – II: Technical

Submitted ☐

(12.0) Blank copy (without price) of schedule of Price indicating "Quoted" duly signed and stamped on each page

Submitted ☐

(13.0) Proposed project organization chart

Submitted ☐

(14.0) PAN Details EPF, ESI, GST registration certificate, income tax clearance certificate, solvency certificate

Submitted ☐

(15.0) Relavant Registration certificate for claiming benfit under MSME

Submitted ☐ Not Applicable ☐

(16.0) Financial balance sheet, profit and loss account, Assets / Liability sheet as per IFB

Submitted ☐

(17.0) Complete tender document duly signed and stamped by the Bidder in token of having received and read all the parts of the Bidding documents and having accepted and considered the same in preparing and submitting the Bid and submission of an undertaking that no pages have been altered / changed with respect to the tender documents and all subsequent amendments.

Submitted ☐

(18.0) Earnest Money Deposit (EMD) as per IFB section

Submitted ☐

(19.0) Integrity pact duly signed and stamped

Submitted & Uploaded ☐

(20.0) Quality manual, sample audit report as per QMS section and safety Assurance plan

Submitted ☐

(21.0) Information about Tenderer and details of similar work done

Submitted ☐

(22.0) Details of tool, tackles & equipment available with tenderer for use in this work

Submitted ☐

(23.0) Manpower estimation for job, deployment chart with bio-data / Experience / qualification of all supervisory staff

Submitted ☐

(24.0) Certificate of approval for compliance to Quality standard submitted by contractor

Submitted ☐

CONFIRM THE FOLLOWING:

(1.0) All pages of the bid have been page numbered in sequential manner.

YES ☐

(2.0) Bidding Document marked "ORIGINAL" along with Original offer, Compliance Letter for Addendum/ Amendment, if any, has been submitted duly signed and stamped on each page.

YES ☐

(3.0) Declaration By Bidder Regarding Directors Of The Company

YES ☐

CONFIRM & ENSURE COMPLIANCE:

DESCRIPTION	YES / NO
Cover Envelope containing submission of Physical documents	
a. Original Bid Security b. Power of Attorney for signing the bid	

SIGNATURE OF BIDDER : _____

NAME OF BIDDER : _____

COMPANY SEAL : _____

PROFORMA-R

DECLARATION BY BIDDER

NOT APPLICABLE

PROFORMA-S

DECLARATION OF BIDDER REGARDING BLACK LISTING/ HOLIDAY LISTING

MPC BIDDER SHALL PROVIDE SELF DECLARATION

END OF VOLUME I PART III SECTION-2