

ANNEXURE-I

OIL INDIA LIMITED
(A Government of India Enterprise)
P.O. Duliajan-786602, Assam, India
E-mail: material@oilindia.in

INVITATION FOR LOCAL COMPETITIVE BID

OIL INDIA LIMITED invites Local Competitive Bid (LCB) through its e-procurement portal <https://etender.srm.oilindia.in/irj/portal> for the following items:

E-Tender No	Bid Closing/Opening Date	Item Description
SDI1401P17 Dt. 10.06.2016 Single Stage Composite Bid System	14.07.2016	ENTERPRISE PROJECT MANAGEMENT SOFTWARE
SDI0749P16 Dt. 31.03.2016 Single Stage Composite Bid System	14.07.2016	FLP FITTINGS
SDI0629P16 Dt. 18.03.2016 Single Stage Composite Bid System	14.07.2016	STEEL TUBULAR POLE
SDI1420P17 Dt. 10.06.2016 Single Stage Composite Bid System	14.07.2016	FIRE WATER MONITOR
SDI1418P17 Dt. 10.06.2016 Single Stage Composite Bid System	14.07.2016	HIGH VOLUME LONG RANGE MONITOR (HVLRM)
SDI1323P17 Dt. 03.06.2016 Single Stage Composite Bid System	14.07.2016	WATER TANK
SDI1363P17 Dt. 07.06.2016 Single Stage Two Bid System	14.07.2016	PMCC PANEL
SDI1438P17 Dt. 13.06.2016 Single Stage Composite Bid System	14.07.2016	HIGH MAST
SDI1439P17 Dt. 13.06.2016 Single Stage Composite Bid System	14.07.2016	LT PANELS
SDI1440P17 Dt. 13.06.2016 Single Stage Two Bid System	14.07.2016	HDPE LINING
SDI1376P17 Dt. 07.06.2016 Single Stage Two Bid System	14.07.2016	62.5 KVA GENERATING SET

Tender fee (Non-refundable): Rs 1,000.00; Bid Closing/Opening Time: **(11 Hrs.) IST/(14 Hrs.) IST**; Period of sale of documents: **Till one week prior to bid closing date**. The complete bid documents and details for purchasing bid documents, participation in E-tenders are available on OIL's e-procurement portal <https://etender.srm.oilindia.in/irj/portal> as well as OIL's website www.oil-india.com.

NOTE: All addenda, Corrigenda, time extension etc. to the tenders will be hosted on above website and e-portal only and no separate notification shall be issued in the press. Bidders should regularly visit above website and e-portal to keep themselves updated.



OIL INDIA LIMITED
(A Government of India Enterprises)
PO : Duliajan – 786602
Assam (India)

TELEPHONE NO. (91-374) 2808719

FAX NO: (91-374) 2800533

Email: ranjanbarman@oilindia.in ; erp_mm@oilindia.in

FORWARDING LETTER

Tender No. : SDI1439P17 DT: 13.06.2016

Tender Fee : Rs 1,000.00

Bid Security : Applicable

Bidding Type : SINGLE STAGE COMPOSITE BID SYSTEM

Tender Type : Open Tender

Bid Closing / Opening on : As mentioned in the e-portal

Performance Security : Applicable

Integrity Pact : Not Applicable

OIL invites Bids for **LT PANEL – 05 NOS** through its e-Procurement site under **SINGLE STAGE COMPOSITE BID SYSTEM**. The bidding documents and other terms and conditions are available at Booklet No. MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders. The prescribed Bid Forms for submission of bids are available in the Technical RFx -> External Area - > Tender Documents

The general details of tender can be viewed by opening the RFx [Tender] under RFx and Auctions. The details of items tendered can be found in the Item Data and details uploaded under Technical RFx.

The tender will be governed by:

- a) For technical support on various matters viz. Online registration of vendors, Resetting of Passwords, submission of online bids etc, vendors should contact OIL's ERP MM Deptt at following: Tel Nos = 0374-2807171 , 0374-2807192. Email id = erp_mm@oilindia.in.

- b) OIL's office timings are as below:

	Time (in IST)
Monday – Friday	07.00 AM to 11.00 AM; 12.30 PM to 03.30 PM
Saturday	07.00 AM to 11.00 AM
Sunday and Holidays	Closed

Vendors should contact OIL officials at above timings only.

- c) “General Terms & Conditions” for e-Procurement as per Booklet No. MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders.

- d) Technical specifications and Quantity as per **Annexure – 1A**.
- e) The prescribed Bid Forms for submission of bids are available in the Technical RFx -> External Area -> Tender Documents.
- f) Amendments to the NIT after its issue will be published on OIL's website only. Revision, clarification, addendum, corrigendum, time extension etc. to the tender will be hosted on OIL website only. No separate notification shall be issued in the press. Prospective bidders are requested to visit website regularly to keep themselves updated.
- g) Any sum of money due and payable to the contractor (including Security Deposit refundable to them) under this or any other contract may be appropriated by Oil India Limited and set-off against any claim of Oil India Limited (or such other person or persons contracting through Oil India Limited) for payment of sum of money arising out of this contract or under any other contract made by the contractor with Oil India Limited (or such other person or persons contracting through Oil India Limited).
- h) Bidder are advised to fill up the Technical bid check list (**Annexure EEE**) and Response sheet (**Annexure FFF**) given in MS excel format in Technical RFx -> External Area -> Tender Documents. The above filled up document to be uploaded in the **Technical RFX** Response.

Special Note:

1.0 Technical and Financial Criteria:

In addition to the general BRC/BEC, following Technical and Financial criteria shall be considered as on the original Bid Closing Date. (**Documentary evidence to be provided along with the bid in Technical RFx -> External Area -> Tender Documents failing which the offer shall be rejected**).

Criteria	Complied / Not Complied.
a) Bidder should have experience of successfully executing atleast 1 (one) similar order for Rs. 17.77 Lakhs in preceding 5 (five) years as on Bid Closing date. Similar Item means: Supply of PCC/PMCC/Feeder pillar of minimum incoming capacity of 100 Amps.	Documentary evidence submitted / not submitted
b) Annual financial turnover of the firm in any of the preceding 3 financial years should not be less than Rs. 17.77 Lakhs.	
c) Net Worth of the firm should be Positive for preceding financial / accounting year.	

Note: Documentary evidence in respect of the above should be submitted in the form of copies of relevant Purchase Orders along with copies of any of the documents in respect of satisfactory execution of each of those Purchase Orders, such as – (i) Satisfactory Inspection Report (OR) (ii) Satisfactory Supply Completion / Installation Report (OR) (iii) Consignee Receipted Delivery Challans (OR) (iv) Central Excise Gate Pass / Tax , Invoices issued under relevant rules of Central Excise / VAT (OR) (v) any other documentary evidence that can substantiate the satisfactory execution of each of the purchase orders cited above. For Annual financial turnover enclose the audited Annual Report , Balance Sheet and Profit and Loss Account certified by a chartered accountant.

2.0 Vendors having OIL's User ID & password may pay Tender Fee on-line through OIL's electronic Payment Gateway upto one week prior to the Bid closing date (or as amended in e-portal).

Vendors who do not have OIL's User ID & password, may generate User ID & password online by the Vendor by using the link for supplier enlistment given in OIL's e-tender portal and then pay Tender Fee on-line through OIL's electronic Payment Gateway upto one week prior to the Bid closing date (or as amended in e-portal).

Alternatively application showing full address/email address with Tender Fee (Non-refundable) of Rs. 1,000.00 in the form of crossed "Payee Account only "Bank Draft/Bankers' Cheque drawn by Bank and valid for 90 days from the date of issue of the same or in the form of Indian Postal Orders payable to the OIL is to be sent to DGM-Materials, Oil India Limited, P.O. Duliajan, Assam-786602. Application shall be accepted only upto one week prior to the Bid closing date (or as amended in e-portal). The envelope containing the application for participation should clearly indicate "REQUEST FOR ISSUE OF USER ID AND PASSWORD FOR E TENDER NO ..." for easy identification and timely issue of user ID and password. On receipt of requisite tender fee, USER_ID and initial PASSWORD will be communicated to the bidder (through e-mail) and will be allowed to participate in the tender through OIL's e- Procurement portal. No physical tender documents will be provided. Details of NIT can be viewed using "Guest Login" provided in the e-Procurement portal. The link to e-Procurement portal has been also provided through OIL's web site www.oil-india.com.

NOTE:

In case of MSE/PSUs/ Govt. Bodies / eligible institutions etc., they shall apply to DGM-Materials, Oil India Limited, P.O. Duliajan, Assam-786602 for waiver of Tender Fee upto one week prior to the Bid closing date (or as amended in e-portal).

3.0 The tender is invited under SINGLE STAGE- COMPOSITE BID SYSTEM. The bidders are required to submit both the "TECHNO-COMMERCIAL UNPRICED BID" and "PRICED BID" through electronic format in the OIL's e-Tender portal within the Bid Closing Date and Time stipulated in the e-Tender.

3.1 Please ensure that Technical Bid / all technical related documents related to the tender are uploaded in the Technical RFx Response-> User - > Technical Bid only.

4.0 Please note that all tender forms and supporting documents are to be submitted through OIL's e-Procurement site only except following documents which are to be submitted manually in sealed envelope super scribed with **Tender no.** and **Due date** to **DGM- Materials, Materials Department, Oil India Limited, Duliajan - 786602, Assam** on or before the Bid Closing Date and Time mentioned in the Tender.

- a) Original Bid Security**
- b) Detailed Catalogue (if any)**
- c) Any other document required to be submitted in original as per tender requirement**

All documents submitted in physical form should be signed on all pages by the authorised signatory of the bidder and to be submitted in Duplicate.

5.0 Benefits to Micro & Small Enterprises (MSEs) as per OIL's Public Procurement Policy for Micro and Small Enterprises (MSEs) shall be given. Bidders are requested to go through ANNEXURE – I of MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders for more details. MSE bidders are exempted from submission of Tender Fees

and Bid Security/Earnest Money provided they are registered for the items they intend to quote.

- 6.0 Bidders are requested to examine all instructions, forms, terms and specifications in the bid. Failure to furnish all information required as per the NIT or submission of offers not substantially responsive to the bid in every respect will be at the bidders risk and may result in rejection of its offer without seeking any clarifications.
- 7.0 Bidders must ensure that their bid is uploaded in the system before the tender closing date and time. Also, they must ensure that above documents which are to be submitted in a sealed envelope are also submitted at the above mentioned address before the bid closing date and time failing which the offer shall be rejected.
- 8.0 Bid must be submitted electronically only through OIL's e-procurement portal. Bid submitted in any other form will be rejected.
- 9.0 The tender shall be governed by the Bid Rejection & Bid Evaluation Criteria given in enclosed **Annexure-CCC**. However, if any of the Clauses of the Bid Rejection Criteria / Bid Evaluation Criteria (as per **Annexure-CCC**) contradict the Clauses of the tender and / or "General Terms & Conditions" as per Booklet No. MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders elsewhere, those in the BEC / BRC shall prevail.
- 10.0 To ascertain the substantial responsiveness of the bid OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be summarily rejected.
- 11.0 Please do refer the User Manual provided on the portal on the procedure How to create Response for submitting offer.
- 12.0 If Bank Guarantee is submitted towards 'Bid Security', then bidders have to ensure that the Bank Guarantee issuing bank indicate the name and detailed address (including e-mail) of their higher office from where confirmation towards genuineness of the Bank Guarantee can be obtained.

NOTE:

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

Yours Faithfully

**Sd-
(R BARMAN)
SR MANAGER MATERIALS (IP)
FOR : DGM-MATERIALS**

Tender No & Date: SDI1439P17 DT: 13.06.2016

BID REJECTION CRITERIA (BRC) / BID EVALUATION CRITERIA (BEC)

The following BRC/BEC will govern the evaluation of the bids received against this tender. Bids that do not comply with stipulated BRC/BEC in full will be treated as non responsive and such bids shall prima-facie be rejected. Bid evaluation will be done only for those bids that pass through the “Bid Rejection Criteria” as stipulated in this document.

Other terms and conditions of the enquiry shall be as per General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders. However, if any of the Clauses of the Bid Rejection Criteria / Bid Evaluation Criteria (BRC / BEC) contradict the Clauses of the tender or MM/LOCAL/E-01/2005 elsewhere, those in the BRC / BEC shall prevail.

<u>Criteria</u>	Complied / Not Complied. (Remarks if any)
1.0 BID REJECTION CRITERIA (BRC): A) COMMERCIAL: i) Validity of the bid shall be minimum 90 days from the Bid Closing Date. ii) Bid security: The bid must be accompanied by Bid Security of <u>Rs 71,000.00</u> in OIL's prescribed format as Bank Guarantee or a Cashier's cheque or Demand Draft in favour of OIL. The Bid Security may be submitted manually in sealed envelope superscribed with Tender no. and Bid Closing date to Head Materials, Materials Department, Oil India Limited, Duliajan- 786602, Assam on or before the Bid Closing Date and Time mentioned in the Tender. The Bank Guarantee towards Bid Security shall be valid for 6 months from Bid closing date. (i.e. upto 14.01.2017). Cashier's cheque or Demand Draft shall be valid for minimum 90 days or as per RBI's guidelines, drawn on “Oil India Limited” and payable at Duliajan, Assam Bid Security may also be paid online on or before the Bid Closing Date and Time mentioned in the Tender. <u>If bid security in ORIGINAL of above mentioned Amount and Validity is not received or paid online within bid closing date and time, the bid submitted through electronic form will be rejected without any further consideration.</u> For exemption for submission of Bid Security, please refer Clause No. 8.16 of General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders. The format of Bank Guarantee towards Bid Security (Annexure – VII) has	

been amended to Annexure – VII (Revised) and bidders should submit Bank Guarantee towards Bid Security as per Annexure – VII (Revised) only.

iii) Bids are invited under “Single Stage Composite Bid System”. Bidders have to submit both the “Techno-commercial Unpriced Bids” and “Priced Bids” through electronic form in the OIL’s e-Tender portal within the bid Closing date and time stipulated in the e-tender. The Techno-commercial Unpriced bid is to be submitted as per scope of works and Technical specification of the tender and the priced bid as per the online Commercial bid format. For details of submission procedure, please refer relevant para of General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders.

iv) Performance Security:

The successful bidder shall submit Performance Security @ 10% of PO value within 30 days of receipt of the formal purchase order failing which OIL reserves the right to cancel the order and forfeit the Bid Security. Bidders should undertake in their bids to submit Performance Security as stated above.

The Performance Security shall be in any one of the following forms :

(a) A Bank Guarantee in the prescribed OIL’s format valid for 3(three) months beyond the Warranty period indicated in the Purchase Order /contract agreement.

(b) A Cashier's cheque or Demand Draft with validity of minimum 90 days or as per RBI’s guidelines, drawn on “Oil India Limited” and payable at Duliajan, Assam.

The Performance Security for capital nature items like plant and machinery etc. shall be valid for 12 months from the date of commissioning plus 3(three) months or 18 months from the date of shipment/despatch plus 3(three) months whichever concludes earlier. However, for consumables like chemicals, cement, tubular etc. the Performance Security shall be valid for 12 months from the date of shipment/despatch plus 3(three) months.

The validity requirement of Performance Security is assuming despatch within stipulated delivery period and confirmation to all terms and conditions of order. In case of any delay in despatch or non-confirmation to all terms and conditions of order, validity of the Performance Security is to be extended suitably as advised by OIL.

v) The prices offered will have to be firm through delivery and not subject to variation on any account. A bid submitted with an adjustable price will be treated as non-responsive and rejected.

vi) Bids received after the bid closing date and time will be rejected. Similarly, modifications to bids received after the bid closing date & time will not be considered.

vii) All the Bids must be Digitally Signed using “Class 3” digital certificate with Organisation’s name (*e-commerce application*) as per Indian IT Act obtained

from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India. The bid signed using other than “Class 3 with Organisation’s Name” digital certificate, will be rejected.

viii) Price should be maintained in the “online price schedule” only. The price submitted other than the “online price schedule” shall not be considered.

ix). A bid shall be rejected straightway if it does not conform to any one of the following clauses:

(a) Validity of bid shorter than the validity indicated in the Tender.

(b) Original Bid Security not received within the stipulated date & time mentioned in the Tender.

(c) Bid Security with (i) Validity shorter than the validity indicated in Tender and/or (ii) Bid Security amount lesser than the amount indicated in the Tender.

(d) Annual Turnover of a bidder lower than the Annual turnover mentioned in the Tender.

x) Bidder should categorically confirm in the technical bid of delivery of the item with four (04) months after receipt of formal order failing which the offer will be rejected.

2.0 BID EVALUATION CRITERIA (BEC)

The bids conforming to the terms and conditions stipulated in the tender and considered to be responsive after subjecting to the Bid Rejection Criteria as well as verification of original of any or all documents/ documentary evidences pertaining to BRC, will be considered for further evaluation as per the Bid Evaluation Criteria given below.

A) TECHNICAL:

1. The manufactured product should be strictly as per OIL’s tender specification.

B) COMMERCIAL:

i). To evaluate the inter-se-ranking of the offers, Assam Entry Tax on purchase value will be loaded as per prevailing Govt. of Assam guidelines as applicable on bid closing date. Bidders may check this with the appropriate authority while submitting their offer.

ii) A job executed by a bidder for its own organization / subsidiary cannot be considered as experience for the purpose of meeting BEC.

iii) To ascertain the substantial responsiveness of the bid OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be summarily rejected.

NOTE:

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

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TECHNICAL SPECIFICATIONS WITH QUANTITY

Tender No & Date: SDI1363P17 DT: 07.06.2016

	Complied / Not Complied. (Remarks if any)
<u>ITEM NO. 10</u> DETAIL OF COMPONENTS OF LT PANEL FOR WELL-14, MORAN (QTY- 01 NO.) INCOMER Two nos. 250 amp, 415V, FP, 36 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip as incomer. The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs. The outgoing of incomer shall terminate on 400 amp (Free air rating of bars) TPN bus bars of rectangular sections of aluminum confirming to IS 5082. Rating of neutral bar shall be 100 % of phase bus rating. PVC insulated bus bars shall be supported on SMC supports suitable for 50 kA fault level. Brought out type Terminal links of rectangular sections of aluminum confirming to IS 5082 shall be provided at incomer side of MCCB for terminating incoming supply cable. Cable size: 1 nos. of 3.5C x 240 sq mm PVCA, stranded aluminum cable. Three Phase, 4-wire Digital Multifunction meter, (V+A+Hz+KW+PF+KWH+Maximum demand with RS 485 port), 1A instrument protection mcbs and Six nos. metering class, Resin cast CTs. CTR-300/5, 15 VA, Class 1 of IS:2705, shall be mounted on the front door. Supply ON and MCCB OFF/ON/TRIP Indications (Cluster LED type with low voltage glow protection) shall be provided. OUTGOINGS 1) Three nos. 100 amps, 415V, FP, 25 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip. The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs. 2) Seven nos. 100 Amps (set at 63 amps), 415V, FP, 25 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip. The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs. 3) Two nos. 40 amps, 415V, FP, 25 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip. The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs. 4) MCCB OFF/ON/TRIP Indications (Cluster LED type with low voltage glow protection) shall be provided for all outgoing feeders. 5) Brought type Terminal links / Terminals, suitably sized shall be provided at the outgoing side of MCCBs / mcbs for terminating outgoing supply cable. CONSTRUCTIONAL DETAIL & GENERAL FEATURES:	

A. CONSTRUCTIONAL DETAIL

(a) LT Panel shall be indoor, single front, extensible type, sheet steel clad, cubicle type, dust and vermin protected, self-supporting and floor mounting with integral base channel of ISMC 75 x 40 mm. Frames shall be made from suitably sized rigid framework of steel formed angles and channels from 2 mm thick CRCA sheet steel. Doors, covers and partitions shall be made of 1.6 mm thick CRCA sheet steel. Cubicles shall have individual front doors with sturdy hinges and fitted with special non-deteriorating neoprene gaskets. The door shall be with single turn latches. The degree of protection of the enclosure shall be IP-52. Lifting lugs shall be provided on top of the Panel.

(b) Panel including busbar shall be suitable for future horizontal extension on both sides. Busbars and cubicles/ side end frames shall be manufactured accordingly.

(c) The Bus-bar ratings shall be as per individual Panels mentioned above.

(d) A 50 x 6 mm GI Earth strip shall be provided at the rear of the panel with adequate 13 mm holes with zinc plated and passivated bolts, nuts and washers for making earth connections to all the cables and the panel.

(e) The design shall be such that the height between bottom cable entry plate and the connection hole of brought out link of incoming, outgoing MCCBs shall be 450 mm. There shall be removable gland plate of 3 mm thick CRCA sheet steel at the bottom.

(f) The LT Panel shall be thoroughly cleaned and chemically pre-treated for rust/grease removal and phosphate coating in a ten tank chemical pre-treatment process. After chemical pre treatment, the panel shall be powder coated with epoxy based powder and stoved in a stoving oven.

(g) The colour of the LT Panel shall be shade no. 631 (Light Grey) as per IS:5.

(h) Danger pales (415V AC) shall be fixed on both front and rear.

(i) The LT Panel and its components shall be conforming to IS:8623, 8828, 13947 and 12640 & IEC 60947 & 60439-1. Ambient-40°C (Max) / 5°C (Min), Humidity-95% (Max).

B. GENERAL FEATURES:

1) Busbars and bus chamber:

Bus chamber shall be steel clad having front and rear bolted covers. The busbars shall consist of 1 set of hard drawn, high conductivity, three phase, electrolytic grade, Aluminum bars of E91E grade, rated as indicated above, supported at sufficient intervals on non-hygroscopic, non-inflammable glass reinforced plastic (GRP)/sheet moulding compound (SMC) supports. Busbars shall be rated to withstand short circuit fault currents of 50 KA for 1 second. The busbar individual phases shall be colour coded for easy identification. Main busbars shall be full length of the panel. Vertical bus bars for feeding individual feeder shall be full height of the panel. Sufficient clearance shall be maintained in the bus chamber for proper cooling of the busbar. Busbar should be extensible type to facilitate future extension.

2) Wiring

i) All internal wiring and cabling inside the LT Panels shall be done with 1.1 KV grade fire retardant PVC insulated tinned copper multi-stranded flexible cables with proper lugs. All wires and cable shall have proper ferrule numbers for easy identification.

ii) Ring lugs shall be used at all critical connections such as CT connections. No more than two wires or lugs may be attached under any one screw. All control & CT wiring should be terminated on suitable TBs. All terminal strips to have minimum 2 nos. spare terminals to accommodate any modification required during commissioning / operation. All terminal strips shall be accessible for testing and troubleshooting/maintenance.

iii) All control wiring inside the panels shall be done with single core, fire retardant multi-stranded flexible copper PVC insulated (1100 V) wire, 1.5 mm² for potential circuits and 2.5 mm² for current circuits. Control wires shall be properly identified with ferrule numbers and suitably terminated with proper sized lugs. 3) Features of the Panel: i) Thickness of gland plates shall be minimum 3.0 mm. ii) The panel doors shall have door latches suitable for latching in one turn only. Lifting hooks shall be provided. iii) Special non-deteriorating Neoprene rubber gaskets shall be used in doors and asand where required. iv) All MCCB Operating handles shall be accessible for operation without opening the cubicle door. The handles will be interlocked with doors, i.e., unless MCCB is in OFF position, door cannot be opened. v) Adequate insulated barriers between the bus chamber and feeder shall be provided to achieve Form-2 separation as per IEC 439-1. vi) MCCB incoming terminals are to be provided with insulating barrier so that once the door is opened, no live part is exposed. vii) Vertical cable alleys with sturdy supports for carrying weight of vertically run PVCA cables will be placed next to the panels. The cable alleys will house sufficiently rated TBs. The cable alleys and vertical busbars shall be on either side of the panels. viii) All connection links between busbar and MCCB incoming side and from outgoing side to the cable alley TBs shall be made with rectangular section of Aluminum bus links conforming to IS. Current rating of links shall be minimum 1.5 times (rating for unassembled sections) the switch rating. All joints shall be checked for proper contact area. ix) Wiring cables from panel to door shall be protected with heavy duty PVC spiral binding. x) All the hardware should be of high tensile steel duly zinc passivated for corrosion protection & fitted with proper sized heavy duty spring washer & two nos. heavy duty flat washers. xi) Sufficient space should be provided for proper glanding, dressing, connecting up and maintenance of cables. Adequate space should be provided for connecting the cable leads to the terminal blocks. xii) Suitable cable supporting arrangement shall be provided inside the cable alleys to firmly grip the cables connected to the terminal blocks of the outgoing feeders. xiii) All hinged doors shall be earthed with copper flexible loops / braids as per IS-3043. xiv) A 50 x 6mm GI strip shall be provided with adequate holes (13mm dia each) with nut, bolts and washers for making earth connections for all panels and armours/screens of cables. Length of GI strip shall be same as panel length. The panel GI strap shall have provision with fasteners for connection to external earth electrodes with suitably sized GI strap. xv) Suitable SS/brass material, NiCd plated single compression cable glands shall be provided in the panels. Gland sizes shall be provided by OIL during detailed engineering/drawing approval. Gland plates (3 mm thick) with suitable size knockouts shall be provided.	
<u>ITEM NO. 20</u> DRENCHING PUMP AREA (OCS1, MORAN) (QTY- 01 NO.) DETAIL OF COMPONENTS OF LT PANEL FOR DRENCHING PUMP OCS1,MORAN (QTY- 01 NO.)	

INCOMER

Two nos. 800 amp, 415V, FP, 50 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip as incomer.

The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having The outgoing of incomer shall terminate on 1000 amp (Free air rating of bars) TPN bus bars of rectangular sections of aluminum confirming to IS 5082. Rating of neutral bar shall be 100 % of phase bus rating. PVC insulated bus bars shall be supported on SMC supports suitable for 50 kA fault level. Brought out type Terminal links of rectangular sections of aluminum confirming to IS 5082 shall be provided at incomer side of MCCB for terminating incoming supply cable. Cable size:

3 nos. of 3.5C x 240 sq mm PVCA, stranded aluminum cable.

Three Phase, 4-wire Digital Multifunction meter, (V+A+Hz+KW+PF+KWH+Maximum demand with RS 485 port), 1A instrument protection mcbs and Six nos. metering class, Resin cast CTs. CTR-800/5, 15 VA, Class 1 of IS:2705, shall be mounted on the front door.

Supply ON and MCCB OFF/ON/TRIP Indications (Cluster LED type with low voltage glow protection) shall be provided.

OUTGOINGS

1) Five nos. 400 amps, 415V, FP, 36 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip.

The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs.

2) Five nos. 250 Amps (set at 200 amps), 415V, FP, 36 kA fault level, MCCB with in-built electronic short

circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip. The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs.

3) MCCB OFF/ON/TRIP Indications (Cluster LED type with low voltage glow protection) shall be provided for all outgoing feeders.

4) Brought type Terminal links / Terminals, suitably sized shall be provided at the outgoing side of MCCBs / mcbs for terminating outgoing supply cable.

CONSTRUCTIONAL DETAIL & GENERAL FEATURES:

A. CONSTRUCTIONAL DETAIL

(a) LT Panel shall be indoor, single front, extensible type, sheet steel clad, cubicle type, dust and vermin protected, self-supporting and floor mounting with integral base channel of ISMC 75 x 40 mm. Frames shall be made from suitably sized rigid framework of steel formed angles and channels from 2 mm thick CRCA sheet steel. Doors, covers and partitions shall be made of 1.6 mm thick CRCA sheet steel. Cubicles shall have individual front doors with sturdy hinges and fitted with special non-deteriorating neoprene gaskets. The door shall be with single turn latches. The degree of protection of the enclosure shall be IP-52. Lifting lugs shall be provided on top of the Panel.

(b) Panel including busbar shall be suitable for future horizontal extension on both sides. Busbars and cubicles/ side end frames shall be manufactured accordingly.

(c) The Bus-bar ratings shall be as per individual Panels mentioned above.

(d) A 50 x 6 mm GI Earth strip shall be provided at the rear of the panel with adequate 13 mm holes with zinc plated and passivated bolts, nuts and washers for making earth connections to all the cables and the panel.

(e) The design shall be such that the height between bottom cable entry plate and the connection hole of brought out link of incoming, outgoing MCCBs shall be 450 mm. There shall be

removable gland plate of 3 mm thick CRCA sheet steel at the bottom.

(f) The LT Panel shall be thoroughly cleaned and chemically pre-treated for rust/grease removal and phosphate coating in a ten tank chemical pre-treatment process. After chemical pre treatment, the panel shall be powder coated with epoxy based powder and stoved in a stoving oven.

(g) The colour of the LT Panel shall be shade no. 631 (Light Grey) as per IS:5.

(h) Danger pales (415V AC) shall be fixed on both front and rear.

(i) The LT Panel and its components shall be conforming to IS:8623, 8828, 13947 and 12640 & IEC 60947 & 60439-1. Ambient-40°C (Max) / 5°C (Min), Humidity-95% (Max).

B. GENERAL FEATURES:

1) Busbars and bus chamber:

Bus chamber shall be steel clad having front and rear bolted covers. The busbars shall consist of 1 set of hard drawn, high conductivity, three phase, electrolytic grade, Aluminum bars of E91E grade, rated as indicated above, supported at sufficient intervals on non-hygroscopic, non-inflammable glass reinforced plastic (GRP)/sheet moulding compound (SMC) supports. Busbars shall be rated to withstand short circuit fault

currents of 50 KA for 1 second. The busbar individual phases shall be colour coded for easy identification. Main busbars shall be full length of the panel. Vertical bus bars for feeding individual feeder shall be full height of the panel. Sufficient clearance shall be maintained in the bus chamber for proper cooling of the busbar. Busbar should be extensible type to facilitate future extension.

2) Wiring

i) All internal wiring and cabling inside the LT Panels shall be done with 1.1 KV grade fire retardant PVC insulated tinned copper multi-stranded flexible cables with proper lugs. All wires and cable shall have proper ferrule numbers for easy identification.

ii) Ring lugs shall be used at all critical connections such as CT connections. No more than two wires or lugs may be attached under any one screw. All control & CT wiring should be terminated on suitable TBs. All terminal strips to have minimum 2 nos. spare terminals to accommodate any modification required during commissioning / operation. All terminal strips shall be accessible for testing and troubleshooting/maintenance.

iii) All control wiring inside the panels shall be done with single core, fire retardant multi-stranded flexible copper PVC insulated (1100 V) wire, 1.5 mm² for potential circuits and 2.5 mm² for current circuits. Control wires shall be properly identified with ferrule numbers and suitably terminated with proper sized lugs.

3) Features of the Panel:

i) Thickness of gland plates shall be minimum 3.0 mm.

ii) The panel doors shall have door latches suitable for latching in one turn only. Lifting hooks shall be provided.

iii) Special non-deteriorating Neoprene rubber gaskets shall be used in doors and asand where required.

iv) All MCCB Operating handles shall be accessible for operation without opening the cubicle door. The handles will be interlocked with doors, i.e., unless MCCB is in OFF position, door cannot be opened.

v) Adequate insulated barriers between the bus chamber and feeder shall be provided to achieve Form-2 separation as per IEC 439-1.

vi) MCCB incoming terminals are to be provided with insulating barrier so that once the door is opened, no live part is exposed.

vii) Vertical cable alleys with sturdy supports for carrying weight of vertically run PVCA cables will be placed next to the panels. The cable alleys will house sufficiently rated TBs. The cable alleys and vertical busbars shall be on either side of the panels. viii) All connection links between busbar and MCCB incoming side and from outgoing side to the cable alley TBs shall be made with rectangular section of Aluminum bus links conforming to IS. Current rating of links shall be minimum 1.5 times (rating for unassembled sections) the switch rating. All joints shall be checked for proper contact area. ix) Wiring cables from panel to door shall be protected with heavy duty PVC spiral binding. x) All the hardware should be of high tensile steel duly zinc passivated for corrosion protection & fitted with proper sized heavy duty spring washer & two nos. heavy duty flat washers. xi) Sufficient space should be provided for proper glanding, dressing, connecting up and maintenance of cables. Adequate space should be provided for connecting the cable leads to the terminal blocks. xii) Suitable cable supporting arrangement shall be provided inside the cable alleys to firmly grip the cables connected to the terminal blocks of the outgoing feeders. xiii) All hinged doors shall be earthed with copper flexible loops / braids as per IS-3043. xiv) A 50 x 6mm GI strip shall be provided with adequate holes (13mm dia each) with nut, bolts and washers for making earth connections for all panels and armours/screens of cables. Length of GI strip shall be same as panel length. The panel GI strap shall have provision with fasteners for connection to external earth electrodes with suitably sized GI strap. xv) Suitable SS/brass material, NiCd plated single compression cable glands shall be provided in the panels. Gland sizes shall be provided by OIL during detailed engineering/drawing approval. Gland plates (3 mm thick) with suitable size knockouts shall be provided.	
<u>ITEM NO.30</u> DETAIL OF COMPONENTS OF LT PANEL FOR DISPOSAL PUMP1 OCS1, MORAN (QTY- 01 NO.) INCOMER Two nos. 400 amp, 415V, FP, 36 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip as incomer. The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs. The outgoing of incomer shall terminate on 600 amp (Free air rating of bars) TPN bus bars of rectangular sections of aluminum confirming to IS 5082. Rating of neutral bar shall be 100 % of phase bus rating. PVC insulated bus bars shall be supported on SMC supports suitable for 50 kA fault level. Brought out type Terminal links of rectangular sections of aluminum confirming to IS 5082 shall be provided at incomer side of MCCB for terminating incoming supply cable. Cable size: 2 nos. of 3.5C x 240 sq mm PVCA, stranded aluminum cable. Three Phase, 4-wire Digital Multifunction meter, (V+A+Hz+KW+PF+KWH+Maximum demand with RS 485 port), 1A instrument protection mcbs and Six nos. metering class, Resin cast CTs. CTR-400/5, 15 VA, Class 1 of IS:2705, shall be mounted on the front door. Supply ON and MCCB OFF/ON/TRIP Indications (Cluster LED type with low voltage glow protection) shall be provided. OUTGOINGS 1) Three nos. 250 Amps (set at 200 amps), 415V, FP, 36 kA fault level, MCCB with in-built	

electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip.

The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs.

2) Two nos. 100 amps, 415V, FP, 25 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip.

The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs.

3) MCCB OFF/ON/TRIP Indications (Cluster LED type with low voltage glow protection) shall be provided for all outgoing feeders.

4) Brought type Terminal links / Terminals, suitably sized shall be provided at the outgoing side of MCCBs / mcbs for terminating outgoing supply cable.

CONSTRUCTIONAL DETAIL & GENERAL FEATURES:

A. CONSTRUCTIONAL DETAIL

(a) LT Panel shall be indoor, single front, extensible type, sheet steel clad, cubicle type, dust and vermin protected, self-supporting and floor mounting with integral base channel of ISMC 75 x 40 mm. Frames shall be made from suitably sized rigid framework of steel formed angles and channels from 2 mm thick CRCA sheet steel. Doors, covers and partitions shall be made of 1.6 mm thick CRCA sheet steel. Cubicles shall have individual front doors with sturdy hinges and fitted with special non-deteriorating neoprene gaskets. The door shall be with single turn latches. The degree of protection of the enclosure shall be IP-52. Lifting lugs shall be provided on top of the Panel.

(b) Panel including busbar shall be suitable for future horizontal extension on both sides.

Busbars and cubicles/ side end frames shall be manufactured accordingly.

(c) The Bus-bar ratings shall be as per individual Panels mentioned above.

(d) A 50 x 6 mm GI Earth strip shall be provided at the rear of the panel with adequate 13 mm holes with zinc plated and passivated bolts, nuts and washers for making earth connections to all the cables and the panel.

(e) The design shall be such that the height between bottom cable entry plate and the connection hole of brought out link of incoming, outgoing MCCBs shall be 450 mm. There shall be removable gland plate of 3 mm thick CRCA sheet steel at the bottom.

(f) The LT Panel shall be thoroughly cleaned and chemically pre-treated for rust/grease removal and phosphate coating in a ten tank chemical pre-treatment process. After chemical pre treatment, the panel shall be powder coated with epoxy based powder and stoved in a stoving oven.

(g) The colour of the LT Panel shall be shade no. 631 (Light Grey) as per IS:5.

(h) Danger pales (415V AC) shall be fixed on both front and rear.

(i) The LT Panel and its components shall be conforming to IS:8623, 8828, 13947 and 12640 & IEC 60947 & 60439-1. Ambient-40°C (Max) / 5°C (Min), Humidity-95% (Max).

B. GENERAL FEATURES:

1) Busbars and bus chamber:

Bus chamber shall be steel clad having front and rear bolted covers. The busbars shall consist of 1 set of hard drawn, high conductivity, three phase, electrolytic grade, Aluminum bars of E91E grade, rated as indicated above, supported at sufficient intervals on non-hygroscopic, non-inflammable glass reinforced plastic (GRP)/sheet moulding compound (SMC) supports. Busbars shall be rated to withstand short circuit fault

currents of 50 KA for 1 second. The busbar individual phases shall be colour coded for easy identification. Main busbars shall be full length of the panel. Vertical bus bars for

feeding individual feeder shall be full height of the panel. Sufficient clearance shall be maintained in the bus chamber for proper cooling of the busbar. Busbar should be extensible type to facilitate future extension.

2) Wiring

i) All internal wiring and cabling inside the LT Panels shall be done with 1.1 KV grade fire retardant PVC insulated tinned copper multi-stranded flexible cables with proper lugs. All wires and cable shall have proper ferrule numbers for easy identification.

ii) Ring lugs shall be used at all critical connections such as CT connections. No more than two wires or lugs may be attached under any one screw. All control & CT wiring should be terminated on suitable TBs. All terminal strips to have minimum 2 nos. spare terminals to accommodate any modification required during commissioning / operation. All terminal strips shall be accessible for testing and troubleshooting/maintenance.

iii) All control wiring inside the panels shall be done with single core, fire retardant multi-stranded flexible copper PVC insulated (1100 V) wire, 1.5 mm² for potential circuits and 2.5 mm² for current circuits. Control wires shall be properly identified with ferrule numbers and suitably terminated with proper sized lugs.

3) Features of the Panel:

i) Thickness of gland plates shall be minimum 3.0 mm.

ii) The panel doors shall have door latches suitable for latching in one turn only. Lifting hooks shall be provided.

iii) Special non-deteriorating Neoprene rubber gaskets shall be used in doors and asand where required.

iv) All MCCB Operating handles shall be accessible for operation without opening the cubicle door. The handles will be interlocked with doors, i.e., unless MCCB is in OFF position, door cannot be opened.

v) Adequate insulated barriers between the bus chamber and feeder shall be provided to achieve Form-2 separation as per IEC 439-1.

vi) MCCB incoming terminals are to be provided with insulating barrier so that once the door is opened, no live part is exposed.

vii) Vertical cable alleys with sturdy supports for carrying weight of vertically run PVCA cables will be placed next to the panels. The cable alleys will house sufficiently rated TBs. The cable alleys and vertical busbars shall be on either side of the panels.

viii) All connection links between busbar and MCCB incoming side and from outgoing side to the cable alley TBs shall be made with rectangular section of Aluminum bus links conforming to IS. Current rating of links shall be minimum 1.5 times (rating for unassembled sections) the switch rating. All joints shall be checked for proper contact area.

ix) Wiring cables from panel to door shall be protected with heavy duty PVC spiral binding.

x) All the hardware should be of high tensile steel duly zinc passivated for corrosion protection & fitted with proper sized heavy duty spring washer & two nos. heavy duty flat washers.

xi) Sufficient space should be provided for proper glanding, dressing, connecting up and maintenance of cables. Adequate space should be provided for connecting the cable leads to the terminal blocks.

xii) Suitable cable supporting arrangement shall be provided inside the cable alleys to firmly grip the cables connected to the terminal blocks of the outgoing feeders.

xiii) All hinged doors shall be earthed with copper flexible loops / braids as per IS-3043.

xiv) A 50 x 6mm GI strip shall be provided with adequate holes (13mm dia each) with nut, bolts and washers for making earth connections for all panels and armours/screens of cables.

Length of GI strip shall be same as panel length. The panel GI strap shall have provision with fasteners for connection to external earth electrodes with suitably sized GI strap. xv) Suitable SS/brass material, NiCd plated single compression cable glands shall be provided in the panels. Gland sizes shall be provided by OIL during detailed engineering/drawing approval. Gland plates (3 mm thick) with suitable size knockouts shall be provided.	
<u>ITEM NO. 40</u> DETAIL OF COMPONENTS OF LT PANEL FOR DISPOSAL PUMP2 OCS1, MORAN (QTY- 01 NO.) INCOMER Two nos. 800 amp, 415V, FP, 50 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip as incomer. The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs. The outgoing of incomer shall terminate on 1000 amp (Free air rating of bars) TPN bus bars of rectangular sections of aluminum confirming to IS 5082. Rating of neutral bar shall be 100 % of phase bus rating. PVC insulated bus bars shall be supported on SMC supports suitable for 50 kA fault level. Brought out type Terminal links of rectangular sections of aluminum confirming to IS 5082 shall be provided at incomer side of MCCB for terminating incoming supply cable. Cable size: 3 nos. of 3.5C x 240 sq mm PVCA, stranded aluminum cable. Three Phase, 4-wire Digital Multifunction meter, (V+A+Hz+KW+PF+KWH+Maximum demand with RS 485 port), 1A instrument protection mcbs and Six nos. metering class, Resin cast CTs. CTR-800/5, 15 VA, Class 1 of IS:2705, shall be mounted on the front door. Supply ON and MCCB OFF/ON/TRIP Indications (Cluster LED type with low voltage glow protection) shall be provided. OUTGOINGS 1) Three nos. 400 amps, 415V, FP, 36 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip. The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs. 2) Two nos. 100 amps, 415V, FP, 25 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip. The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs. 3) MCCB OFF/ON/TRIP Indications (Cluster LED type with low voltage glow protection) shall be provided for all outgoing feeders. Brought type Terminal links / Terminals, suitably sized shall be provided at the outgoing side of MCCBs / mcbs for terminating outgoing supply cable. CONSTRUCTIONAL DETAIL & GENERAL FEATURES: A. CONSTRUCTIONAL DETAIL (a) LT Panel shall be indoor, single front, extensible type, sheet steel clad, cubicle type, dust and vermin protected, self-supporting and floor mounting with integral base channel of ISMC 75 x 40 mm. Frames shall be made from suitably sized rigid framework of steel formed angles and channels from 2 mm thick CRCA sheet steel. Doors, covers and partitions shall be made of 1.6 mm thick CRCA sheet steel. Cubicles shall have individual front doors with sturdy hinges	

and fitted with special non-deteriorating neoprene gaskets. The door shall be with single turn latches. The degree of protection of the enclosure shall be IP-52. Lifting lugs shall be provided on top of the Panel.

(b) Panel including busbar shall be suitable for future horizontal extension on both sides.

Busbars and cubicles/ side end frames shall be manufactured accordingly.

(c) The Bus-bar ratings shall be as per individual Panels mentioned above.

(d) A 50 x 6 mm GI Earth strip shall be provided at the rear of the panel with adequate 13 mm holes with zinc plated and passivated bolts, nuts and washers for making earth connections to all the cables and the panel.

(e) The design shall be such that the height between bottom cable entry plate and the connection hole of brought out link of incoming, outgoing MCCBs shall be 450 mm. There shall be removable gland plate of 3 mm thick CRCA sheet steel at the bottom.

(f) The LT Panel shall be thoroughly cleaned and chemically pre-treated for rust/grease removal and phosphate coating in a ten tank chemical pre-treatment process. After chemical pre treatment, the panel shall be powder coated with epoxy based powder and stoved in a stoving oven.

(g) The colour of the LT Panel shall be shade no. 631 (Light Grey) as per IS:5.

(h) Danger pales (415V AC) shall be fixed on both front and rear.

(i) The LT Panel and its components shall be conforming to IS:8623, 8828, 13947 and 12640 & IEC 60947 & 60439-1. Ambient-40°C (Max) / 5°C (Min), Humidity-95% (Max).

B. GENERAL FEATURES:

1) Busbars and bus chamber:

Bus chamber shall be steel clad having front and rear bolted covers. The busbars shall consist of 1 set of hard drawn, high conductivity, three phase, electrolytic grade, Aluminum bars of E91E grade, rated as indicated above, supported at sufficient intervals on non-hygroscopic, non-inflammable glass reinforced plastic (GRP)/sheet moulding compound (SMC) supports. Busbars shall be rated to withstand short circuit fault

currents of 50 KA for 1 second. The busbar individual phases shall be colour coded for easy identification. Main busbars shall be full length of the panel. Vertical bus bars for feeding individual feeder shall be full height of the panel. Sufficient clearance shall be maintained in the bus chamber for proper cooling of the busbar. Busbar should be extensible type to facilitate future extension.

2) Wiring

i) All internal wiring and cabling inside the LT Panels shall be done with 1.1 KV grade fire retardant PVC insulated tinned copper multi-stranded flexible cables with proper lugs. All wires and cable shall have proper ferrule numbers for easy identification.

ii) Ring lugs shall be used at all critical connections such as CT connections. No more than two wires or lugs may be attached under any one screw. All control & CT wiring should be terminated on suitable TBs. All terminal strips to have minimum 2 nos. spare terminals to accommodate any modification required during commissioning / operation. All terminal strips shall be accessible for testing and troubleshooting/maintenance.

iii) All control wiring inside the panels shall be done with single core, fire retardant multi-stranded flexible copper PVC insulated (1100 V) wire, 1.5 mm² for potential circuits and 2.5 mm² for current circuits. Control wires shall be properly identified with ferrule numbers and suitably terminated with proper sized lugs.

3) Features of the Panel:

i) Thickness of gland plates shall be minimum 3.0 mm.

ii) The panel doors shall have door latches suitable for latching in one turn only. Lifting hooks shall be provided. iii) Special non-deteriorating Neoprene rubber gaskets shall be used in doors and asand where required. iv) All MCCB Operating handles shall be accessible for operation without opening the cubicle door. The handles will be interlocked with doors, i.e., unless MCCB is in OFF position, door cannot be opened. v) Adequate insulated barriers between the bus chamber and feeder shall be provided to achieve Form-2 separation as per IEC 439-1. vi) MCCB incoming terminals are to be provided with insulating barrier so that once the door is opened, no live part is exposed. vii) Vertical cable alleys with sturdy supports for carrying weight of vertically run PVCA cables will be placed next to the panels. The cable alleys will house sufficiently rated TBs. The cable alleys and vertical busbars shall be on either side of the panels. viii) All connection links between busbar and MCCB incoming side and from outgoing side to the cable alley TBs shall be made with rectangular section of Aluminum bus links conforming to IS. Current rating of links shall be minimum 1.5 times (rating for unassembled sections) the switch rating. All joints shall be checked for proper contact area. ix) Wiring cables from panel to door shall be protected with heavy duty PVC spiral binding. x) All the hardware should be of high tensile steel duly zinc passivated for corrosion protection & fitted with proper sized heavy duty spring washer & two nos. heavy duty flat washers. xi) Sufficient space should be provided for proper glanding, dressing, connecting up and maintenance of cables. Adequate space should be provided for connecting the cable leads to the terminal blocks. xii) Suitable cable supporting arrangement shall be provided inside the cable alleys to firmly grip the cables connected to the terminal blocks of the outgoing feeders. xiii) All hinged doors shall be earthed with copper flexible loops / braids as per IS-3043. xiv) A 50 x 6mm GI strip shall be provided with adequate holes (13mm dia each) with nut, bolts and washers for making earth connections for all panels and armours/screens of cables. Length of GI strip shall be same as panel length. The panel GI strap shall have provision with fasteners for connection to external earth electrodes with suitably sized GI strap. xv) Suitable SS/brass material, NiCd plated single compression cable glands shall be provided in the panels. Gland sizes shall be provided by OIL during detailed engineering/drawing approval. Gland plates (3 mm thick) with suitable size knockouts shall be provided.	
<u>ITEM NO. 50</u> DETAIL OF COMPONENTS OF LT PANEL FOR JOCKY PUMP ROOM, CTF, MORAN (QTY- 01 NO.) INCOMER Two nos. 320 amp, 415V, FP, 36 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip as incomer. The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs. The outgoing of incomer shall terminate on 400 amp (Free air rating of bars) TPN bus bars of rectangular sections of aluminum confirming to IS 5082. Rating of neutral bar shall be 100 % of phase bus rating. PVC insulated bus bars shall be supported on SMC supports suitable for 50 kA fault level.	

Brought out type Terminal links of rectangular sections of aluminum confirming to IS 5082 shall be provided at incomer side of MCCB for terminating incoming supply cable. Cable size: 1 nos. of 3.5C x 240 sq mm PVCA, stranded aluminum cable.

Three Phase, 4-wire Digital Multifunction meter, (V+A+Hz+KW+PF+KWH+Maximum demand with RS 485 port), 1A instrument protection mcbs and Six nos. metering class, Resin cast CTs. CTR-300/5, 15 VA, Class 1 of IS:2705, shall be mounted on the front door.

Supply ON and MCCB OFF/ON/TRIP Indications (Cluster LED type with low voltage glow protection) shall be provided.

OUTGOINGS

1) Five nos. 100 amps, 415V, FP, 36 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip.

The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs.

2) Six nos. 100 Amps (set at 63 amps), 415V, FP, 25 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip.

The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs.

3) Two nos. 40 amps, 415V, FP, 25 kA fault level, MCCB with in-built electronic short circuit, overcurrent and earth-fault protection release unit and a 230 V AC shunt trip.

The Feeder shall be provided with a Earth-Leakage Relay with compatible CBCT having settings: 0.03 to 3 Amps and time settings 0.15 to 3 secs.

4) MCCB OFF/ON/TRIP Indications (Cluster LED type with low voltage glow protection) shall be provided for all outgoing feeders.

5) Brought type Terminal links / Terminals, suitably sized shall be provided at the outgoing side of MCCBs / mcbs for terminating outgoing supply cable.

CONSTRUCTIONAL DETAIL & GENERAL FEATURES:

A. CONSTRUCTIONAL DETAIL

(a) LT Panel shall be indoor, single front, extensible type, sheet steel clad, cubicle type, dust and vermin protected, self-supporting and floor mounting with integral base channel of ISMC 75 x 40 mm. Frames shall be made from suitably sized rigid framework of steel formed angles and channels from 2 mm thick CRCA sheet steel. Doors, covers and partitions shall be made of 1.6 mm thick CRCA sheet steel. Cubicles shall have individual front doors with sturdy hinges and fitted with special non-deteriorating neoprene gaskets. The door shall be with single turn latches. The degree of protection of the enclosure shall be IP-52. Lifting lugs shall be provided on top of the Panel.

(b) Panel including busbar shall be suitable for future horizontal extension on both sides.

Busbars and cubicles/ side end frames shall be manufactured accordingly.

(c) The Bus-bar ratings shall be as per individual Panels mentioned above.

(d) A 50 x 6 mm GI Earth strip shall be provided at the rear of the panel with adequate 13 mm holes with zinc plated and passivated bolts, nuts and washers for making earth connections to all the cables and the panel.

(e) The design shall be such that the height between bottom cable entry plate and the connection hole of brought out link of incoming, outgoing MCCBs shall be 450 mm. There shall be removable gland plate of 3 mm thick CRCA sheet steel at the bottom.

(f) The LT Panel shall be thoroughly cleaned and chemically pre-treated for rust/grease removal and phosphate coating in a ten tank chemical pre-treatment process. After chemical pre

treatment, the panel shall be powder coated with epoxy based powder and stoved in a stoving oven.

(g) The colour of the LT Panel shall be shade no. 631 (Light Grey) as per IS:5.

(h) Danger pales (415V AC) shall be fixed on both front and rear.

(i) The LT Panel and its components shall be conforming to IS:8623, 8828, 13947 and 12640 & IEC 60947 & 60439-1. Ambient-40°C (Max) / 5°C (Min), Humidity-95% (Max).

B. GENERAL FEATURES:

1) Busbars and bus chamber:

Bus chamber shall be steel clad having front and rear bolted covers. The busbars shall consist of 1 set of hard drawn, high conductivity, three phase, electrolytic grade, Aluminum bars of E91E grade, rated as indicated above, supported at sufficient intervals on non-hygroscopic, non-inflammable glass reinforced plastic (GRP)/sheet moulding compound (SMC) supports. Busbars shall be rated to withstand short circuit fault currents of 50 KA for 1 second. The busbar individual phases shall be colour coded for easy identification. Main busbars shall be full length of the panel. Vertical bus bars for feeding individual feeder shall be full height of the panel. Sufficient clearance shall be maintained in the bus chamber for proper cooling of the busbar. Busbar should be extensible type to facilitate future extension.

2) Wiring

i) All internal wiring and cabling inside the LT Panels shall be done with 1.1 KV grade fire retardant PVC insulated tinned copper multi-stranded flexible cables with proper lugs. All wires and cable shall have proper ferrule numbers for easy identification.

ii) Ring lugs shall be used at all critical connections such as CT connections. No more than two wires or lugs may be attached under any one screw. All control & CT wiring should be terminated on suitable TBs. All terminal strips to have minimum 2 nos. spare terminals to accommodate any modification required during commissioning / operation. All terminal strips shall be accessible for testing and troubleshooting/maintenance.

iii) All control wiring inside the panels shall be done with single core, fire retardant multi-stranded flexible copper PVC insulated (1100 V) wire, 1.5 mm² for potential circuits and 2.5 mm² for current circuits. Control wires shall be properly identified with ferrule numbers and suitably terminated with proper sized lugs.

3) Features of the Panel:

i) Thickness of gland plates shall be minimum 3.0 mm.

ii) The panel doors shall have door latches suitable for latching in one turn only. Lifting hooks shall be provided.

iii) Special non-deteriorating Neoprene rubber gaskets shall be used in doors and asand where required.

iv) All MCCB Operating handles shall be accessible for operation without opening the cubicle door. The handles will be interlocked with doors, i.e., unless MCCB is in OFF position, door cannot be opened.

v) Adequate insulated barriers between the bus chamber and feeder shall be provided to achieve Form-2 separation as per IEC 439-1.

vi) MCCB incoming terminals are to be provided with insulating barrier so that once the door is opened, no live part is exposed.

vii) Vertical cable alleys with sturdy supports for carrying weight of vertically run PVCA cables will be placed next to the panels. The cable alleys will house sufficiently rated TBs. The cable alleys and vertical busbars shall be on either side

of the panels.

viii) All connection links between busbar and MCCB incoming side and from outgoing side to the cable alley TBs shall be made with rectangular section of Aluminum bus links conforming to IS. Current rating of links shall be minimum 1.5 times (rating for unassembled sections) the switch rating. All joints shall be checked for proper contact area.

ix) Wiring cables from panel to door shall be protected with heavy duty PVC spiral binding.

x) All the hardware should be of high tensile steel duly zinc passivated for corrosion protection & fitted with proper sized heavy duty spring washer & two nos. heavy duty flat washers.

xi) Sufficient space should be provided for proper glanding, dressing, connecting up and maintenance of cables. Adequate space should be provided for connecting the cable leads to the terminal blocks.

xii) Suitable cable supporting arrangement shall be provided inside the cable alleys to firmly grip the cables connected to the terminal blocks of the outgoing feeders.

xiii) All hinged doors shall be earthed with copper flexible loops / braids as per IS-3043.

xiv) A 50 x 6mm GI strip shall be provided with adequate holes (13mm dia each) with nut, bolts and washers for making earth connections for all panels and armours/screens of cables. Length of GI strip shall be same as panel length. The panel GI strap shall have provision with fasteners for connection to external earth electrodes with suitably sized GI strap.

xv) Suitable SS/brass material, NiCd plated single compression cable glands shall be provided in the panels. Gland sizes shall be provided by OIL during detailed engineering/drawing approval. Gland plates (3 mm thick) with suitable size knockouts shall be provided.

SPECIAL TERMS AND CONDITION

A. Drawings and Documents:

1. The following documents are required to be submitted with the offer.

(i) Confirmation that the offered panels shall conform to all the points of the tender. Any deviation from the tender specs must be clearly mentioned with technical justifications.

In case of an order on the party complete tender specs and the deviations accepted by OIL in writing shall only be mentioned in the order.

(ii) Copy of test certificate for busbar rated 1000 Amps or above for fault level of 50kA for 1 second from CPRI or any govt. approved NABL accredited test laboratory.

(iii) Copy of test certificate for busbar rated 1000 Amps or above for temperature rise from CPRI or any govt. approved NABL accredited test laboratory.

(iv) Copy of test certificate for panels with Degree of Protection IP: 54 from CPRI or any govt. approved NABL accredited test laboratory

(v) Indicative general arrangement and layout drawing of the panel

(vi) Indicative schematic and single line diagram of the panel

(vii) Quality Management Certification ISO: 9001 # 2008 version for Design, manufacture, installation and servicing of medium voltage Electrical control and distribution panels.

(viii) Incase of OEM bidder shall have minimum 05 (five) years (till the bid closing date) of experience in design, fabrication and testing of LT Electrical Panels. During these years

bidder must have manufactured and supplied minimum 3 nos. of panels to Govt./semi govt./PSUs/Public limited companies. These panels must be in operation satisfactorily as on date. Incase of Authorise dealers they must submit valid authorised dealership certificate and their Principal shall have the credentials as mentioned for OEM above.

(ix) Credentials of Bidder having minimum ten tank anti rust treatment system and powder coating facility for treatment and painting of sheet metal works for durability.

Tank sequence: degreasing, water rinse, de-rusting, water rinse, activation, phosphating, water rinse, passivation.

(x) Indicative bill of materials with offered spares list and prices of spares

(xi) Filled up technical check list

(xii) General Quality Assurance Plan of the manufacturing process of the OEM

2. Detail foundation drawing, drawing of panel showing termination details, full wiring diagram, component layout diagram and complete bill of material must be submitted to

OIL for approval within 30 days after placement of the order. OIL shall modify/correct drawings as necessary.

The manufacturing of panel shall start only after approval of the

drawings by OIL. In the event of an order on the party complete tender specifications and the deviations accepted by OIL in writing only shall be mentioned in the order.

3. Supplier shall also submit detailed ordered panel-specific Quality Assurance Plan for the panels for OIL's approval within 30 days after placement of order. Inspection and testing details of each and every component shall be elaborately given in the QAP.

4. Six spiral bound sets of the following documents, drawings and literatures are to be supplied with the panels, for each panel:

(i) General arrangement, foundation, schematic diagram and wiring diagrams ("as built")

(ii) Works Test report containing result of tests done at factory during inspection

(iii) Guarantee Certificate

(iv) Technical Catalogues/manuals of Air circuit breakers, Moulded Case Circuit Breakers, soft starter units, starter components and Digital Meters

(vii) Bill of Materials with part description, part nos. and details of items/components

B. Guarantee:

The LT panel and all parts must be guaranteed with all its components for a period of 12 months after commissioning. Party will arrange for repair/ replacement, as required by

OIL, of defective parts within one month of reporting of the failure by OIL. This will be at no extra cost to OIL.

C. Testing and Inspection:

Panel shall be duly tested as per IS: 8623 at manufacturer's works and routine test certificate shall be submitted at the time of pre-despatch inspection.

In addition to the routine tests as per IS, OIL representative shall carry out pre-despatch inspection of the panel and witness all necessary testing at manufacturer's works.

Bidders shall separately quote charges towards inspection and witness test, if any. [To and fro charges of OIL's personnel to manufacturer's works will be to OIL's account].

Panel shall be tested as per the following details for witness testing by OIL's representative:

(i) Accuracy of dimensions & circuitry as per approved drawings. Joints of busbar and links shall be checked for proper contact area.

(ii) Inspection of the assembly including inspection of wiring and mechanical/electrical operation of components and starters/feeders

(iii) Dielectric (insulation) tests (iv) Checking of protective measures and of the electrical continuity of the protective circuit

(v) Secondary Injection test for Incomer breakers Any alteration/modification requirements pointed out during the inspection shall be carried out by the manufacturer at no extra cost to OIL and confirmed before dispatch, without which dispatch clearance shall not be given. In case routine test parameters are found to be outside acceptable values, modifications shall be carried out and routine tests on the panel shall again be performed with no extra cost to OIL.

Copies of the test certificates along with bound copies of complete test results (after acceptance) shall be submitted for approval of OIL prior to dispatch of the LT Panels.

D. General Notes:

1. Material should be adequately packed to avoid damage and ingress of water during transit. OIL's PO no. and date shall be embossed/engraved on the panel.
2. All items of the offered panel must be as per IS/ IEC (with latest amendments).
3. All feeders shall have engraved designation nameplates. Details of Feeder designation shall be provided by OIL at the time of approval of drawing.

D. Make of components:

MCCB - Legrand/Merlin Gerin/Siemens/ABB/L&T/HPL/Indo-Asian.

ELR with compatible CBCT - Legrand/Merlin Gerin/Prok-dv's/GIC

Digital Multifunction Meter - Schneider/Secure/HPL/AE/L&T

CTs - Kappa/AE/L&T.

Indication Lamps - Teknic/L&T/Siemens

Cables for wiring - Finolex / Polycab / L&T / Havells.

Cable lugs - Dowells.

E: ANNEXURE-II: TECHNICAL CHECK LIST

The check list must be completed and returned with the offer with bidder's comment as per format ATTACHED. Bidder is to ensure that all the points under TECHNICAL CHECK LIST are covered in the offer. This will ensure proper evaluation of the offer.

NOTE:

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

ANNEXURE-II: TECHNICAL CHECK LIST
TENDER NO. SDI1439P17 DT: 13.06.2016

Sl No.	Points	Remarks
1	Are you a panel manufacturer of 415 VAC PCC/MCC/PMCC panels with ACB/MCCB or authorized dealer/ channel partner of 415V AC PCC/PMCC/ MCC panels/switchgear manufacturer OEM? Please note bidders quoting on behalf of OEM of panels have to submit valid authorization certificate from the OEM along with the offer.	
2	In case of Panel manufacturer, have you submitted credentials for having designed, engineered, manufactured and supplied at least one no. 415 V PCC/PMCC/MCC panel fitted with ACB rated minimum 800 A, 415 V with short circuit breaking capacity of 50 kA for 1 second in the last 5 (five) years? The panel must be operating satisfactorily for a period of at least 1 (one) year as on bid closing date.	
3	Have you submitted experience credentials for having successfully supplied and commissioned at least 3 (three) nos. of PCC/MCC/PMCC panel with ACB/MCCBs to Central Govt./State Govt./ PSU/Public limited companies in the last 5 (five) years as on bid closing date.	
4	Have you submitted type test certificates for the following test for your designed and supplied PCC/MCC/PMCC panels (fitted with ACB/MCCB) as per IS: 8623 (with latest amendments) from a test house/ laboratory accredited by National Accreditation Board for testing and calibration Laboratories (NABL), India. (a) Short time current withstand test (50 kA for 1 second) (b) Temp. rise test (c) Ingress protection test	
5.	Have you submitted full technical specifications for the LT Panels and accessories, indicative dimensional/GA and layout drawings of LT Panels, indicative wiring diagram, QAP, Bill of Materials and datasheets of all the components used in the LT Panels along with the quotation?	
6.	Have you offered guarantee for 12 (twelve) months from the date of commissioning for the offered panels?	
7.	Have you mentioned any deviations or other items/ points not indicated /included in the specifications but deemed necessary for design, Installation and commissioning, efficient control and operation of the PCC?	

Technical Bid Checklist**Annexure-EEE**

Tender No.			
Bidder's Name :			
		Compliance by Bidder	
SL. NO.	BEC / TENDER REQUIREMENTS	Indicate 'Confirmed' / 'Not Confirmed' / Not applicable	Indicate Corresponding page ref. of unpriced bid or Comments
1	Confirm that validity has been offered as per NIT.		
2	Confirm that Bid Security / Earnest Money has been submitted as per NIT (Wherever Applicable) ?		
3	Confirm that you shall submit Performance security (in the event of placement of order) (Wherever Applicable) ?		
4	Confirm that duly signed Integrity Pact has been submitted as per NIT (Wherever Applicable) ?		
5	Confirm that you have submitted documentary evidence of successfully executing one Purchase order as stipulated in NIT in any of the preceding 5 financial years (*)		
6	Confirm that you have submitted Balance Sheet and Profit and Loss Account of any of the preceding 3 financial years certified by a chartered accountant.		
7	Confirm that the bid has been signed using Class 3 digital certificate with Organisation's Name as per NIT.		
8	Confirm that you have not taken any exception/deviations to the NIT .		

NOTE: Please fill up the greyed cells only.

(*) Purchase Orders along with copies of any of the documents in respect of satisfactory execution of the Purchase Orders should be submitted – (i) Satisfactory Inspection Report (OR) (ii) Satisfactory Supply Completion / Installation Report (OR) (iii) Consignee Receipted Delivery Challans (OR) (iv) Central Excise Gate Pass / Tax , Invoices issued under relevant rules of Central Excise / VAT (OR) (v) any other documentary evidence that can substantiate the satisfactory execution of the purchase order cited above.

Response Sheet**Annexure-FFF**

Tender No.
Bidders Name

Bidders Response Sheet

Sl No.	Description	Remarks
1	Place of Despatch	
2	Whether Freight charges have been included in your quoted prices	
3	Whether Insurance charges have been included in your quoted prices	
4	Make of quoted Product	
5	Offered Validity of Bid as per NIT	
6	Bid Security Submitted (if applicable)	
6	Details of Bid Security Submitted to OIL (if applicable)	
	a) Bid Security Amount (In Rs):	
	b) Bid Security Valid upto:	
7	Whether you shall submit Performance Security in the event of placement of order on you (if applicable)	
8	Integrity Pact Submitted (if applicable)	
9	Whether you have submitted documentary evidence of successfully executing one Purchase order as stipulated in NIT in any of the preceding 5 financial years (*)	
10	Whether you have submitted Balance Sheet and Profit and Loss Account of any of the preceding 3 financial years certified by a chartered accountant.	
11	Delivery Period in weeks from placement of order	
12	Complied to Payment terms of NIT (if applicable) otherwise to Standard Payment Terms of OIL or not.	
13	If bidder is MSE whether you have quoted your own product	
14	If Bid security submitted as Bank Guarantee, Name and Full Address of Issuing Bank including Telephone, Fax Nos and Email id of branch manager	

NOTE: Please fill up the greyed cells only.

(*) Purchase Orders along with copies of any of the documents in respect of satisfactory execution of the Purchase Orders should be submitted – (i) Satisfactory Inspection Report (OR) (ii) Satisfactory Supply Completion / Installation Report (OR) (iii) Consignee Receipted Delivery Challans (OR) (iv) Central Excise Gate Pass / Tax , Invoices issued under relevant rules of Central Excise / VAT (OR) (v) any other documentary evidence that can substantiate the satisfactory

**(TO BE FILLED UP BY ALL THE VENDOR IN THEIR OWN LETTER HEAD)
(ALL FIELDS ARE MANDATORY)**

Tender No. :.....
Name of Beneficiary :M/s.....
Vendor Code :.....
Address :.....
.....
Phone No. (Land Line) :.....
Mobile No. :.....
E-mail address :.....
Bank Account No. (Minimum
Eleven Digit No.) :.....
Bank Name :.....
Branch :.....
Complete Address of your
Bank :.....

IFSC Code of your Bank
a) RTGS :.....
b) NEFT :.....
PAN :.....
VAT Registration No. :.....
CST Registration No. :.....
Service Tax Registration No. :.....
Provident Fund Registration :.....

I/We confirm and agree that all payments due to me/us from Oil India Limited can be remitted to our above mentioned account directly and we shall not hold Oil India Limited responsible if the amount due from Oil India Limited is remitted to wrong account due to incorrect details furnished by us.

Office Seal

.....
Signature of Vendor

Counter Signed by Banker:
Seal of Bank:

Enclosure: Self attested photocopies of the following documents-

- 1) PAN Card
- 2) VAT Registration Certificate
- 3) Service Tax Registration
- 4) CST Registration
- 5) Provident Registration Certificate
- 6) Cancelled cheque of the bank account mentioned above (in original).
- 7) Bank Statement not older than 15 days on the date of submission.