ऑयल इंडिया लिमिटेड
(भारत सरकार का उद्यम)
Oil India Limited
(A Government of India Enterprise)
Conquering Newer Horizons

NEF PROJECT, DULIAJAN
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TENDER NO. D205930P15

OIL INDIA LIMITED, a Government of India Enterprise and a premier oil Company engaged in exploration, production and transportation of crude oil & natural gas invites sealed Bids under SINGLE STAGE TWO BID SYSTEM for the following work from experienced / approved Contractors / Firms for the below mentioned work.

1.0 Brief Description of Work: INTERIOR DECORATION FOR NEW OFFICE ROOMS AT FIRST FLOOR OF NEF PROJECT AT DULIAJAN

2.0 Salient points of the tender (covered in details in this tender document) –

a.	Tender No.	:	D205930P15 Dated 12.01.2015
b.	Type of Bidding	:	SINGLE STAGE TWO BID SYSTEM
c.	Tender Fee	:	INR (`) 500.00
d.	Bid Closing Date & Time	:	11.03.2015 at 13:30 HRS (IST)
e.	Technical Bid Opening Date & Time	:	11.03.2015 at 14:00 HRS (IST)
f.	Commercial Bid (Priced Bid) Opening Date & Time	:	Will be intimated to the eligible bidders nearer time.
g.	Bids to be addressed to	:	Group General Manager (NEF), NEF Project, Oil India Limited, P.O. Duliajan, District: Dibrugarh Assam (India), PIN-786602
h.	Bid Opening Place	:	Office of the Group General Manager (NEF) NEF Project, Oil India Limited, P.O. Duliajan, District: Dibrugarh Assam (India), PIN-786602
i.	Bid Validity	:	180 days from the date of opening of Technical Bid.
j.	Earnest Money / Bid Security Amount	:	INR (`) 9,000.00

l.	Original Bid Security to be submitted to	:	Group General Manager (NEF), NEF Project, Oil India Limited, P.O. Duliajan, District: Dibrugarh Assam (India), PIN-786602
m.	Duration of Contract		16 (Sixteen) Weeks from the date of commencement of Contract
n.	Amount of Performance Guarantee	:	2.5% of the total estimated Contract value
o.	Validity of Performance Guarantee	:	One month after the expiry of the tenure of the contract.
p.	Retention Money	:	7.5 % on running Bill
q.	Quantum of Liquidated Damage for default in timely Mobilisation	:	0.5 % of contract value for delay of per week or part thereof subject to maximum of 7.5%.
r.	Last Date of Tender Sale date	:	10.03.2015

3.0 Eligibility Criteria:

Interested contractors / firms, interior decorators shall have to submit the following documents to qualify for opening of the Price Bid:

(a) Experience of having successfully completed similar type of works with CPWD, Railways, APWD, APPWD, MES, NRL, ONGCL, OIL or any other Government Organization / Public Sector Undertaking. The minimum value of contract job executed successfully during the last seven (07) years as on the last date of the month previous to the bid closing date should be:

For Section-A:
One single contract job of value of Rs.9.64 Lakhs
Or
Two contract jobs of value of Rs.6.020 Lakhs each
Or
Three contract jobs of value of Rs.4.82 Lakhs each

And

For Section-B:
One single contract job of value of Rs.3.97 Lakhs
Or
Two contract jobs of value of Rs. 2.48 Lakhs each
Or
Three contract jobs of value of Rs.1.98 Lakhs each.

Note: The similar work means interior decoration work in line with work specified in sections-A and B.

(b) Average Annual Financial Turnover during the last three (03) years, ending 31st March 2014 should be at least Rs. 5.10 Lakhs. The proof of Annual Turnover should be either in the form of Audited Balance Sheet or Certification from Chartered / Cost Accountant firm along with Profit and Loss account indicating their membership / code.

(c) PF code number issued by the appropriate Govt. Authority or exemption certificate from the concerned authority or a declaration in stamped paper that provisions of the PF Act are not applicable to him / them and in case the PF is to be deposited later on, the same will be deposited by the bidder.

(d) PAN, VAT and Service Tax Registration certificates.

(e) Documentary evidence in support of sound financial standing and Bank Account number from any Nationalized Bank.

(f) All the certificates and documentary evidences submitted in support of paragraph 3.0(a), 3.0(b), 3.0(c), 3.0(d), 3.0(e) above should be clearly legible and duly notarized by Government approved Notary with official seal.

(h) Company has the right to check the original certificates / documents at any point of time if desired and the required documents should be produced for authentication.

(i) Documentary evidences of job experiences should be in the form of Completion Certificate(s).

(j) Non-submission of the documents as specified in all the paragraphs above will result in rejection of bids.

4.0 TENDER FEE FOR ISSUE OF BID DOCUMENTS: The Tender Document will be issued in physical form. Interested Bidders should submit their application for issue of bid document to the GROUP GENERAL MANAGER (NEF), NEF PROJECT, OIL INDIA LIMITED, P.O. DULIAJAN, DISTRICT: DIBRUGARH, ASSAM, INDIA, PIN-786602 giving their full address along with a non-refundable Tender Fee of INR(`) 500.00 (PSUs and firms registered with NSIC/SME are exempted from payment of cost of tender documents provided they furnish valid evidence that they are registered for the above services) in the form of Demand Draft drawn in favour of OIL INDIA LIMITED and payable at DULIAJAN. The last date for sale of documents is one day prior to bid opening date during office hours only. Application may be sent by post. However, Company will not be responsible for delay in receipt of non-receipt of the same.

5.0 Bids are invited under SINGLE STAGE TWO BID SYSTEM i.e. 'TECHNO-COMMERCIAL BID'/'TECHNICAL BID' and 'COMMERCIAL BID'/'PRICED BID'. Both the bids (techno-commercial bid and priced bid) are to be submitted within the Bid Closing Date & Time and the Techno-commercial bids will be opened on the same day at 14:00 Hrs (IST) at the OFFICE OF THE GROUP GENERAL MANAGER (NEF), NEF PROJECT, OIL INDIA LIMITED, P.O. DULIAJAN, DISTRICT: DIBRUGARH, ASSAM, INDIA, PIN-786602 in presence of authorized representatives of the bidders, who choose to attend.

5.1 In case the above mentioned bid closing / opening date happens to be a non-working day for any reason or Bandh / Strike etc. at Duliajan, the bids will be received up to & opened at same time as assigned on the following full working day except Saturdays.

5.2 Priced Bids of technically qualified bidders only will be opened subsequently on a pre-determined date & time, which will be notified to all such bidders separately nearer the time.

6.0 SEALED ENVELOPE containing the BIDS and the original Bid Security (EMD) shall be marked/ superscripted with the Tender Number & Description of Work as above and shall be addressed to GROUP GENERAL MANAGER (NEF), NEF PROJECT, OIL INDIA LTD, P.O. DULIAJAN, DIBRUGARH, ASSAM, INDIA, PIN-786602 or dropped in the TENDER BOX placed at the OFFICE OF THE GROUP GENERAL MANAGER (NEF), NEF PROJECT, OIL INDIA LTD, P.O. DULIAJAN, DIBRUGARH, ASSAM, INDIA, PIN-786602 (same address as above) on or before 13:30 HRS (IST) the schedule date of Technical Bid Opening. Bidders may also send their Bid by Registered Post or by Courier Services. However, Company shall not be responsible for any postal delay/transit loss/non-receipt of the same. Timely delivery of the BID is the responsibility of the bidder.

7.0 All bidders should deposit the requisite EARNEST MONEY/BID SECURITY in original along with the BID in the form of Demand Draft / Banker's Cheque/ Bank Guarantee for the value mentioned above, in favour of M/s. Oil India Limited and payable at DULIAJAN within the Bid Closing Date and Time. This Earnest Money shall be refunded to all unsuccessful bidders, but is liable to be forfeited in full or part, at Company's discretion, as per Clause No. 12.0 below. BIDs received without Earnest Money in the manner specified above will be summarily rejected.

8.0 SUBMISSION/MARKING OF BIDS: Un-priced Techno-Commercial Bid(PART-I) and Price Bid(PART-II) should be put in two separate envelopes with markings on them as A and B respectively as under :

Envelope-A: This envelope shall contain the Un-priced Techno-Commercial Bid (including bid security & compliance certificate, if any) and shall be super-scribed as Techno-Commercial Bid. In this envelope the bid containing all parts except the price bid shall be put in.

Envelope-B: This envelope shall contain the Price Bid and shall be super-scribed as Price Bid.

Both the Envelopes i.e., Envelope-A & Envelope-B shall be put in one envelope and all markings like Tender No., Bid Closing Date, Bidder's Name etc shall be super scribed on it.

9.0 The bids are to be submitted in triplicate. (One in original and two photocopies of the original).

10.0 The rates shall be quoted per unit as specified in the Schedule of Work (SOQ) and shall be in words as well as in figures. No overwriting shall be allowed, but all corrections may be inserted in the blank space above the corrected word / figure and must be initialed. In case of discrepancy the unit rate quoted in words shall be considered to be correct.

11.0 The Company reserves the right to reject any or all the tenders or accept any tender in full or in part, without assigning any reason.

12.0 (a) No Bidder should withdraw the tender after its public opening. Any such withdrawal will make the bidder liable of forfeit his/her/their Earnest Money in full and debarred from further tendering at the sole discretion of the company and the period of debarment will not be less than 6 (six) months.

(b) Once a withdrawal letter is received from any bidder, the offer will be treated as withdrawn and no further claim / correspondence will be entertained in this regard.

13.0 The BIDS must be valid for 180 (One hundred & eighty) days from the date of opening of the tender.

14.0 Conditional Bids are liable to be rejected at the discretion of the Company.

15.0 The bidders are required to furnish the composition and status of ownership of the firm in whose name tender documents have been purchased/issued along with one or more of the following documentary evidences (which are applicable to the bidder) in support of the same.

(01). In case of Sole Proprietorship Firm-Copies of Telephone/Electricity/Mobile Bill, PAN, latest Income Tax Return indicating therein the name, business and residential address, E-mail and telephone numbers of the owner and copies of Service Tax and Central Excise Registration Certificate.

(02). In case of HUF-Copies of Telephone/Electricity/Mobile Bill, PAN, latest Income Tax Return, Family Arrangement indicating therein the name, residential address, E-mail and telephone numbers of the owners in general and Karta in particular and copies of Service Tax and Central Excise Registration Certificate.

(03). In case of Partnership Firm-Copies of Telephone/Electricity/Mobile Bill, PAN, latest Income Tax Return indicating therein the name, residential address, E-mail and telephone numbers of all the partners(including the Managing Partner), registered partnership agreement/deed and copies of Service Tax and Central Excise Registration Certificate.

(04). In case of Co-Operative Societies-Copies of Telephone/Electricity/Mobile Bill, PAN, latest Income Tax Return indicating therein the name, residential address, E-mail and telephone numbers of all the Directors or persons who are at the helm of affairs, registration certificate from Registrar of Co-Operative Societies and copies of Service Tax and Central Excise Registration Certificate.

(05). In case of Societies registered under the Societies Registration Act -Copies of Telephone/ Electricity/ Mobile Bill, PAN, latest Income Tax Return indicating therein the name, residential address, E-mail and telephone numbers of all the Directors or persons who are at the helm of affairs, registration certificate from the Registrar of the state and copies Service Tax and Central Excise Registration Certificate.

(06). In case of Joint Stock Companies registered under the Indian Companies Act -Copies of Telephone/ Electricity/ Mobile Bill, PAN, latest Income Tax Return indicating therein the name, residential address, E-mail and telephone numbers of all the Directors or persons who are at the

helm of affairs, Certificate of Incorporation from the Registrar of Companies, Memorandum and Articles and copies of Service Tax and Central Excise Registration Certificate.

(07). In case of Trusts registered under the Indian Trust Act - Copies of Telephone/ Electricity/ Mobile Bill, PAN, latest Income Tax Return indicating therein the name, residential address, E-mail and telephone numbers of all the Trustee or persons who are at the helm of affairs, registration certificate from the Registrar of the state, Trust Deed and copies Service Tax and Central Excise Registration Certificate.

16.0 The selected bidder will be required to enter into a formal contract, which will be based on their bid i.e. OIL's Standard Form of Contract.

17.0 The successful bidder shall furnish a Security Deposit in the form of Demand Draft / Banker's Cheque / Bank Guarantee in favour of M/s. OIL INDIA LTD. payable at DULIAJAN, as specified above before signing the formal contract. The Security Deposit will be refunded to the Contractor after satisfactory completion of the work, but a part or whole of which shall be used by the Company in realization of liquidated damages or claims, if any or for adjustment of compensation or loss due to the Company for any reason. This Security Money shall not earn any interest.

18.0 The amount of retention money shall be released after 6 (six) months from the date of completion certificate from the concerned department.

19.0 The work shall have to be started within seven days from the date of work order.

20.0 Time will be regarded as the essence of the Contract and the failure on the part of the Contractor to complete the work within the stipulated time shall entitle the Company to recover liquidate damages and / or penalty from the Contractor as per terms of the tender /contract.

21.0 The contractor will be required to allow OIL officials to inspect the work site and documents in respect of the workers payment.

22.0 DISCOUNTS / REBATES:

(a) Unconditional Discounts/ Rebates if any given in the bid or along with bid will be considered for evaluation.

(b) Post bid or conditional discounts / rebates offered by any bidder shall not be considered for evaluation of bids. However, if the lowest bidder happens to be the final acceptable bidder for award of contract and if they have offered any discount/rebate, the contract shall be awarded after taking into consideration such discount / rebate.

These provisions shall be incorporated suitably in the Bid Document.

23.0 BACKING OUT BY BIDDER:

In case any bidder withdraws their bid within the bid validity period, Bid Security will be forfeited and the party will be debarred for a period of 2(two) years from the date of withdrawal of bid.

24.0 BACKING OUT BY L-1 BIDDER AFTER ISSUE OF LOA:

In case LOA issued is not accepted by the L1 bidder or the Performance Security is not submitted as per the terms of the contract within the time specified in the Bid Document, the Bid Security shall be forfeited and the bidder shall be debarred for 2(two) years from the date of default.

25.0 FURNISHING FRAUDULENT INFORMATION/DOCUMENT:

If it is found that a Bidder/Contractor has furnished fraudulent document/information, the Bid Security/Performance Security shall be forfeited and the party shall be debarred for period of 3(three) years from the date of detection of such fraudulent act, besides the legal action.

26.0 LANGUAGE OF BIDS:

The bid as well as all correspondence and documents relating to the bid exchanged between the bidder and the Company shall be in English language only.

27.0 Successful bidder's Bid Security will be refunded upon their signing the contract and submission of Performance Security. Bid Security of all unsuccessful bidders will be returned within 30 days of expiry of the period of bid validity.

28.0 Bidders should include all liabilities including statutory liabilities in their quoted rates.

OIL INDIA LIMITED
(A Govt. of India Enterprise)
NEF Project, Duliajan

Tender No. D205930P15 Dated 12.01.2015

SOQ: Schedule of Work, Unit, Quantities, Rates and Prices

Service Line Item No.	Description of Works	Unit	Qty	Contractor's quoted rates per unit (Figs. & words) (in Rs.)	Amount (Rs)
SECTION-A: LABOUR SUPERVISION AND RELATED TRANSPORT WHEREVER APPLICABLE					
10	Providing and fixing in position suspended false ceiling consisting of the following G.I. sections. Vertical suspenders of angle section, peripheral channels, primary and secondary frame work at centre to centre distance of 600 mm maximum of 'C' channels, the suspenders to be fixed with the ceiling with the help of angle cleats and expansion bolts. The peripheral channels to e screwed to the wall with the help of metal screws, the junction of peripheral channels and primary /secondary channels to be screwed with suitable metal screws. The junctions of primary and secondary channels to have G.I. Clips. Providing and fixing 12 mm thick double skin gypsum board to the frame work with the help of suitable screws in line and level. The item also includes providing false ceiling in stepped design where applicable as per site. The joints of the boards to be finished with bonding paper. Providing and applying 2 coats of gypsum primer to the entire surface and finish the same with putty work etc. so as to be ready to receive paint. Providing and applying three coats of approved quality paints over required number of approved primer coats. This item also includes of cutting for the other service i.e. light fittings cut out, AC cut out etc.	Square Meter	68.000		
20	Providing and supplying in position workstation table L-shaped with size	Number	6.000		

	1800 mm x 600 mm of height 750 mm (and side table of size 1250 mm x 400 mm) made of 19 mm thick BWR block board of approved make with shelves, sliding keyboard, drawers etc. & one CPU trolley of size 450 x 300 mm with 4 nos. roller. The exposed surface of the table be finished in 1 mm thick laminate of approved shade and color. All unexposed surface be finished with melamine polish. The workstation complete with all necessary hardware fittings like locks, knobs, handles, cable manager, concealed hinges etc. The table partition is provided with a fabric pin up board over 19 mm thick BWR block board finished with 1mm thick laminate up to a height of 450 mm over the table top. Teak wood beadings are provided on the edges of the table finished with melamine polish.				
30	Providing and supplying in position workstation table L-shaped with size 1500 mm x 600 mm of height 750 mm (and side table of size 1250 mm x 400 mm) made of 19 mm thick BWR block board of approved make with shelves, sliding keyboard, drawers etc. & one CPU trolley of size 450 x 300 mm with 4 nos. roller. The exposed surface of the table be finished in 1 mm thick laminate of approved shade and colour. All unexposed surface be finished with melamine polish. The workstation complete with all necessary hardware fittings like locks, knobs, handles, cable manager, concealed hinges etc. The table partition is provided with a fabric pin up board over 19 mm thick BWR block board finished with 1 mm thick laminate upto a height of 450mm over the table top. Teakwood beadings are provided on the edges of table finished with melamine polish.	Number	3.000		
40	Providing and supplying in position oval shaped discussion table of size 1950 mm x 1050 mm of height 750 mm, made of thick 19 mm BWR block board. Exposed surface of the table be finished in 1 mm	Number	1.000		

	thick laminate of approved shade and colour. Teak wood beadings are provided on the edges of the table finished with melamine polish.				
50	Supply and providing Godrej Make or equivalent mid back revolving chair "BRAVO" for all at workstation and discussion table.	Number	15.000		
60	Providing and fixing in position partly wooden partition made of salwood frame work section 46 x 35 mm comprising of vertical and horizontal at 600 mm c/c or part thereof both direction fixed firmly to floors and walls in three parts. Lower part up to 1200 mm height shall have 12 mm BWR plywood fixed on either side and finishing with 1 mm thick laminate of approved shade fixed with adhesive. Middle part above 1200 mm upto 2100 mm ht provided with good quality grill board of approved design fixed with T.W. beading on either side. Top part same as bottom part up to ceiling height finished with laminated sheet.	Square Meter	10.000		
70	Providing, fabricating and fixing in position, almirah of size 900 mm x 2000 mm made of 19 mm thick BWR plywood. The almirah should be provided with shelves as required. Providing and fixing beading made out of 'A' Class wood on edges. All external surfaces be finished in high quality PU Pig Matt Colour / Polish. All beading be finished in melamine polish. All complete with necessary accessories like channels, hinges, handles etc.	Number	1.000		
80	Providing, fabricating and fixing in position, almirah of size 900 mm x2000 mm made of 19 mm thick BWR plywood. The almirah should be provided with shelves as required. The doors of the almirah will be provided with 6mm thick glass fitted within the door frame made of ply. Providing and fixing beading made out of 'A' Class wood on edges. All external surfaces be finished in high quality PU Pig Matt Colour/Polish. All beading be finished in melamine polish. All complete with necessary accessories	Number	2.000		

	like channels, hinges, handles etc.				
90	Providing, making and fixing in position, wall mounted timber cabinet of size 450mm x 450mm x 1000mm with horizontal & vertical partition wall for keeping files, books, journel etc. made of 19mm BWR plywood with timber frame, bracket etc . & finished with 1mm thick laminate of approved shade fixed with adhesive compound. The cabinet should be fitted with door with all standard fittings & complete in all respect as directed.	Each	4.000		
100	Providing, making and fixing in position, wall mounted timber cabinet of size 450mm x 450mm x 1500mm with horizontal & vertical partition wall for keeping files, books, journel etc. made of 19mm BWR plywood with timber frame, bracket etc . & finished with 1mm thick laminate of approved shade fixed with adhesive compound. The cabinet should be fitted with door with all standard fittings & complete in all respect as directed.	Each	4.000		
110	Supplying, fitting & fixing 100mm wide vertical blinds of make Nova or equivalent fitted to aluminum powder coated head rail of size (minimum) 40mm x 20mm with PVC runners, chains etc. complete as per manufacturer's specification as directed.	Square Meter	21.560		
120	Providing, laying and Fixing PVC Vinyl Flooring 1.50 mm thick of Make: Wonder floor or equivalent and fixing with rubber based adhesive of brand Dendrite SR 505 or SR 908 or equivalent, including necessary cleaning the surface.	Square Meter	68.000		
130	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/litre. of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour: Two Coats.	Square Meter	102.000		
140	Application of white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the	Square Meter	102.000		

	plastered wall surface to prepare the surface even and smooth complete.				
		Total of SECTION-A (in Rs.):			
SECTION-B:SUPPLY OF ALL MATERIALS AT SITE OF WORK INCLUDING ALL ROYALITIES AND OTHER CHARGES BEING BORNE BY CONTRACTOR:					
10	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 3x1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface/Recessed medium grade ISI approved PVC Casing Capping/PVC Conduit, with modular switch, suitable PVC casing box for fixing ceiling rose and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc as required. (Identical size phase, neutral and earth wires, colour coded red, black and green respectively). Make of cable: Havells / Finolex /L&T /Polycab; Make of PVC Casing Capping AKG/Presto Plast or Equivalent; Make of Modular switch: Legrand /L&T /MK /Scheider /Crabtree/Indo-Asian or Approved by Engineer in Charge.	Each	30.000		
20	Wiring for light plug point with 3X1.5 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed medium grade ISI approved PVC Casing Capping along with FRLS PVC insulated copper conductor single core cable for loop earthing as required (Identical size phase, neutral and earth wires, colour coded red, black and green respectively); Make of cable : Havells/ Finolex/L&T/ Polycab; Make of PVC Casing Capping: AKG/Presto Plast or Equivalent. Approved by the Engineer in Charge.	Meter	150.000		
30	Wiring for circuit/ submain /Power wiring along with earth wire with the 3x2.5 mm sq. sizes of FRLS PVC insulated copper conductor, single core cable in surface/recessed medium class ISI approved PVC Casing Capping as required. Wiring shall be done from MCB DB to desired Switch Board/power point.(identical in size phase ,neutral and earth wires ,colour coded red ,black and green respectively).Make of cable	Meter	100.000		

	:Havells /Finolex /L &T; Make of PVC Casing Capping : AKG/Presto Plast or Equivalent or Approved by Engineer in Charge				
40	Wiring for circuit/submain /Power wiring along with earth wire with the 3x4 mm. sq. sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class ISI approved PVC Casing Capping as required. Wiring shall be done from MCB DB to desired Switch Board/power point. (Identical in size phase, neutral and earth wires, color coded red, black and green respectively); Make of cable :Havells / Finolex /L &T Make of PVC Casing Capping : AKG/Presto Plast or Equivalent or Approved by Engineer in Charge.	Meter	200.000		
50	Supply, Installation, testing and commissioning of pre-wired, 1 x 13 W CFL Luminaries, recessed low down lighter inclusive of enclosed control gear box similar to Philips make FBH145 M 1xPL-C/4P13W HFM type fitting with all accessories and lamp etc., including fixing arrangement above false ceiling, wiring and connection with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable and earthing etc. as required. Make: Philips/ Crompton /GE/ Bajaj /Havells or Approved by Engineer in Charge. For corridor, staircase, Pantry Garage etc.	Each	10.000		
60	Supply, Installation, testing and commissioning of pre-wired, 4x 14 W T5 Recess mounted fluorescent fitting with all accessories and tube etc., including supplying and fixing of hanging arrangement, connection with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable and earthing etc. as required. Fitting shall be similar to Bajaj make BLMRA 418 TD WEB4 luminarie, including 4 No 14 W TL5 tube and reflector. Make: Philips/Crompton / GE/Bajaj/ Havells or Approved by Engineer in Charge. For Conference room only.	Each	12.000		
70	Supply, Installation, testing and	Each	8.000		

	commissioning of 400 mm sweep similar to Havells Swing Dzire platina with plastic blade AC Wall fan in the wall with making necessary connection as required. Make of fan: Havells / Crompton Greaves/Bajaj/Orient. or Approved by Engineer in Charge.				
80	7 SEGMENT TPN MCB DB : Pre-fabricated 7 SEGMENT 3 PHASE 12 WAY Double door MCB DB suitable for surface/Recess mounting, IP 43 / IP 42 enclosure. Fully insulated 100A copper bus bar for each phase with insulated neutral and earth bar, door earthing. SIMILAR TO LEGRAND CAT NO 6078 38 flash mounting on brick wall with following specifications. DB shall be fitted with the following incoming & outgoing devices.Seg1: INCOMER (MAIN) 125A 4P MCB 1NO; Seg 2,3 & 4 : (Sub incomer)R-Y-B each phase incomer shall have -63ARCBO DP , sensitivity 100 mA - 3nos .Seg 5 ,6 & 7: each phase OUTGOING shall have 20A SP MCB 6 Nos and 10A SP MCB 4 nos. and 32 SP MCB 2 Nos. 100 amp. tinned copper bus bar should be provided for phase & neutral. Pre- fabricated DB and it's connection Loop wires, busbars etc. MCB's shall be from same manufacturer. All MCBs should be 'C' curve, 240v AC rated, 10kA rated breaking capacity, with DMC housing, suitable for class-II tropicalisation (as per IEC) & approved by ISI or IEC. MCBs should have integrated label holder, biconnect upper & lower terminals & air channels for low temp. rise. DB shall be as per IS-8623.All wires inside DB shall have ferrules for identification of circuit no. All unused openings should be fitted with Blanking Plates. Instruction in English for resetting RCBO/RCCB in case of tripping shall be printed on a paper and shall be pasted on inside of the enclosure cover. All outgoing MCBs shall be marked with paint for identification of area being fed. MAKE OF DB and components: Legrand / Schneider / Siemens/Indo Asian/L&T or	Each	1.000		

	as approved by Engineer In charge of Electrical Department. Fixing TPN DB includes termination of all incoming and outgoing cable using proper size of lugs, glands etc.				
90	Supplying and fixing 3 pin, 5 amp ceiling rose on the existing junction box	Each	10.000		
100	Supply, installation and wiring of Blank Plate Legrands or as approved by Engineer In charge	Each	8.000		
110	Supplying and fixing suitable size PVC Box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection etc. as required. Make of Modular item : Legrand /L&T/MK/Schneider /Crabtree/ Indo-Asian or Approved by Engineer in Charge.	Each	28.000		
120	Supplying and fixing 4 module PVC Box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 amps modular socket outlet and 15/16 amps modular switch, connection etc. as required. Make of Modular item: Legrand /L&T /MK /Schneider /Crabtree/ Indo-Asian or Approved by Engineer In Charge.	Each	6.000		
130	Supplying, fixing and installation of 6 modules PVC Box along with modular base & cover plate for modular switches in recess etc as required. Fixing of 6 A switch given in point wiring and internal connection included in the item. Make of modular item –Legrand /L&T/MK /Schneider/Crabtree/Indo-Asian or Approved by Engineer in Charge.	Each	5.000		
140	Supplying, fixing and installation of 3 modules PVC Box along with modular base & cover plate for modular switches in recess etc as required. Fixing of 6 A switch given in point wiring and internal connection included in the item. Make of Modular item: Legrand /L&T /MK/ Schneider /Crabtree /Indo-Asian or Approved by Engineer in Charge.	Each	3.000		
150	Supplying and fixing PVC box of 250 mm	Each	2.000		

	X 300 mm X 60 mm deep (nominal size) on surface. This PV box will be used as a Junction box for MCB DB. Make: Presto Plast/AKG /Richa or equivalent				
160	Supplying and installation of Surface type 20A metallic plug/socket DB complete with 20A Plug and Socket and C curve, 10kA MCB for AC. Make: Merlin Gerin /Legrand /Siemens.	Each	4.000		
170	Supply, installation, testing and commissioning of Hi-wall 5 star rating non ducted split type air conditioner of 1.50 ton capacity with cordless remote complete with copper pipe and electrical Connection up to 5 m between the room unit and outdoor unit including stabilizer of high quality.	Number	3.000		
		TOTAL SECTION-B (in Rs.)			

Grand total of all groups (SECTION-A + SECTION-B) : Rs._____

(Rupees _____
Only)

Note: Bidders should include all liabilities including statutory liabilities in their quoted rates.

OIL INDIA LIMITED
(A Govt of India Enterprise)
NEF Project, Duliajan

WORKS CONTRACT

Special Conditions of Contracts (SCC)

Tender No.: D205930P15

INTERIOR DECORATION OF NEW OFFICE ROOMS AT FIRST FLOOR OF NEF PROJECT AT DULIAJAN:
The bidders shall have to quote their rates against all the items of both the sections-A and B, failing which the offer will be treated as incomplete and rejected.

SECTION-A: Ceiling, flooring, furnishing, painting etc. (Item Nos.10 to 140)
Special Conditions for SECTION-A:

1. The bidders shall have to quote their rates against all the items of both the sections, failing which the offer will be treated as incomplete and rejected.

2. All the quoted rates shall include cost of materials for the work, cost of transportation, labour, VAT, service tax or any other statutory taxes on material and execution of work.

3. It will be contractors' responsibility to supply, erect., install and commission all the materials, equipments, items and provide all the services mentioned in the schedule of works and the quoted rates must include all the above.

4. The bidding will be in SINGLE STAGE TWO BID SYSTEM. The price bids of those bidders only will be opened who submit the necessary documents and are evaluated to be acceptable.

5. The materials to be permanently incorporated in work shall conform to the specifications provided in the description of service as per schedule of work.

6. The samples of materials like 1.5 mm thick vinyl sheet, vertical blind, 12 mm thick double skin gypsum board, 1 mm thick laminate etc. shall be approved by the Engineer-in-charge before incorporation in works.

7. Acrylic emulsion paint for walls shall be of approved brand and shade as per shade card.

8. The contractor shall be liable to replace or redo the work as required if there are any damages to the work due to inferior quality of materials and / or workmanship within 6 (six) months from the date of completion of work.

SECTION-B (ELECTRICAL): Internal electrification (Item Nos.10 to 170)

SPECIAL CONDITION OF CONTRACT FOR ELECTRIFICATION WORKS:

1.0 GENERAL

1.1 Special conditions if contract shall be read in conjunction with the General Conditions of Contract, Schedule of Quantities specifications of work, drawings and any other document forming part of this contract wherever the context so requires.

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

1.3 Where any portion of the General Conditions of contract is repugnant to or at variance with any provisions of the Special conditions of Contract, then unless different intention appears, the provisions of the Special Conditions of Contract shall be deemed to override the provision(s) of General Conditions of Contract only to the extent that such repugnance or variance cannot be reconciled with the tender conditions of contract and shall be to the extent of such repugnance of variations, prevail; it being understood that the provisions of General Conditions of Contract shall otherwise prevail.

1.4 Wherever it is stated anywhere in this tender document that such and such a supply is to be effected or such and such a work is to be carried out, if shall be understood that the same shall be effected / carried out by the contractor at his own cost, unless a different intention if specifically and expressly stated herein or otherwise explicit from the context.

1.5 The materials, design and workmanship shall satisfy the relevant Indian Standards, the job specifications contained herein & codes referred to. Where the job specifications stipulate requirements in addition to those contained in the standard codes and specifications, these additional requirements shall also be satisfied. In the absence of any Standard / Specifications / Codes of practice for detailed specifications covering any part of the work covered in this tender, the instructions/directions of Company will be binding on the Contractor.

1.6 The items given under Bill of Quantity shall be read in conjunction with scope of work, scope of supply (by Company as well as by Contractor) and job specifications and in case of any irreconcilable conflict between them the provision in the item under "Bill of Quantity" will override the corresponding provision only if the scope of work, scope of supply and job specifications, which cannot be reconciled in such cases the decision of Company shall be final and binding on the contractor.

1.7 In case of contradiction between Indian Standards, General Conditions of Contract, Special Conditions of contract, Specifications Drawings, Bill of Quantity, the following shall prevail in order of precedence.

(i) Letter of intent / Detailed Letter of intent along with statement of Agreed Variations and its enclosures.
(ii) Bill of Quantity.

(iii) Special Conditions of Contract.
(iv) Job specifications
(v) Drawings
(vi) General Condition of contract
(vii) Indian Standard/Technical/Material Specifications.

2.0 LOCATION OF SITE AND SITE PARTICULARS:

2.1 The site of work is located at NEF Building, OIL INDIA LIMITED, DULIAJAN.

2.2 The intending Bidder shall be deemed to have visited the site and familiarized himself thoroughly with the site conditions job details before submitting the tender. Non familiarity with the site conditions will not be considered a reason either for extra claims or for not carrying out the work in strict conformity with the drawings and specifications.

3.0 STATUTORY REQUIREMENT FOR WORK

3.1 The contractor should have valid Electrical Contractor License issued or recognized by Licensing Board, Govt. of Assam. In case license expires during contract period the same shall be renewed by the contractor. The contract shall be terminated if the license is not renewed if required.

3.2 Contractor shall employ work persons with valid wireman license issued by Licensing Board, Govt. of Assam to carry out all electrical jobs and shall employ one supervisor holding valid supervisor's competency certificate recognized by Govt. of Assam for supervision of electrical jobs.

3.3 Quality of jobs carryout by the Contractor shall be very high standard and should be as per the norms of BIS, NEC or other electrical standards recognized by the company.

3.4 The contractor should have (within last seven years) minimum experience of two years without any break in between for execution of office building electrification including three phase wiring system.

4.0 POWER:

Electricity required for wiring purpose shall be arranged by the contractor. However, electricity may be provided by the Company at its discretion to use drilling machine or any other portable tools required for wiring purposes if available at nearest point on chargable basis. The Contractor shall have to arrange for required switch board with proper safety device like RCBO, MCCB / MCBs to take power from the existing source.

5.0 TIME SCHEDULE:
5.1 The works shall be executed strictly as per the time schedule specified in the Tender.

6.0 SCOPE OF SUPPLY:
Company does not envisage supplying any material for this work & contractor has to arrange all materials at his own & the rates quoted shall deem to include the same.

7.0 SCOPE OF WORK:
Brief details of work to be carried out by the contractor are as described below. This will include supply, storage, laying, installation, jointing and testing, obtaining approvals, testing and commissioning and completion of different works. The work shall be carried out as described in Bill of Quantities (SOQ), specifications, and drawings, BIS / NEC guidelines and as per the instructions by Engineer-in-charge (electrical), of the Company. The scope of work shall cover complete electrification works of the office. The board items /activities covered under internal electrical works shall include the followings:

i) Point wiring of all lights points, Ceiling fan points, exhaust fan points.
ii) Light plug points, general power points, metal clad plug & socked outlet points etc. including light and power accessories etc. complete in all respects.
iii) All concealed wiring shall be through ISI marked Medium duty PVC conduit through beams, columns roof, floors etc. and
all surface wiring shall be through ISI marked casing-capping.
iv) Cables from Main Distribution Board to Sub Distribution Board, sub main wiring from main/sub distribution boards to various final distribution boards.
v) HDPE/GI pipes for cables and other items required to complete with re-electrification work in all respects.
vi) Main Distribution Boards, Sub-Main Distribution Boards and Sub Distribution Boards.
vii) Light fixtures, and exhaust fans.
viii) Earthing of all Main CFS, Main DBs and SUB DBs etc. complete in all respects.
ix) To prepare Layout and working drawings submission drawings and completion drawings for all systems to be executed.
x) To obtain clearances, approvals etc. form Electrical Inspector to State Govt., Electricity Supply Company, Pollution Control Department and or any other statutory authority as may be applicable/required.

8.0 SCHEDULE OF QUANTITIES/RATE:

8.1 The quantities shown against the various items are only approximate and may vary to any extent individually subject to relevant clause of General Conditions of Contract. Any increase or decrease in the quantities shall not form the basis for alteration of rates quoted and accepted including where low/high rates have been quoted by the successful Tenderer.

8.2 The Engineer in charge reserves the rights to interpolate or extrapolate the rate for any new item of work not finding a place in the Bill of Quantity (SOQ), for similar items of lower and or higher magnitude available in the Bill of Quantity.

8.3 In case any activity though specifically not covered in Bill of Quantity description but the same of covered under scope of work/spec./drawing etc. no extra claim on this account shall be entertained.

9.0 PRICE VARIATION:
Owner require "FIRM PRICES" as indicated in General Conditions or Contract during Contract period and no material or labour escalation shall admissible on any account whatsoever. It is to be noted that no deviation on contract period requirements in this connection will be acceptable.

10.0 MEASUREMENTS, BILLING & TERMS OF PAYMENT:
All works shall be measured in metric system based on actual work done as per the terms and conditions of the Tender documents. Running Accounts bills based on Bill of Quantity shall be prepared and submitted based on joint measurements.

11.0 FINAL BILL:
The final bill shall be submitted by the Contractor within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Company whichever is earlier. No further claims shall be made by the Contractor after submission of the final bill and these shall be deemed to have been waived and extinguished.

Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Company, will as far as possible be made within 6 months, the period being reckoned from the date of receipt of the bill by the Company, complete with no claim and no dues by contractor, No Objection Certificate from labour officer and all completion documents including material consumption statement.

12. DEDUCTIONS FOR INCORRECT WORK:
If, the Engineer-in-charge(Electrical) deems it expedient to correct work damaged or not done in accordance with the contract, an equitable deduction from the contract price shall be made thereof and the decision of the Owner shall be final.

13. CONTRACT DRAWINGS:
Contractor has to prepare all working drawings mentioned below and obtain approval from the engineer in charge (Electrical) before starting the Civil work starts so that piping works for wiring job does not suffer due to non-approval of the working drawings:

a) Layout diagram of complete conduit job for concealed wiring showing route for wiring from DB to sub-DB, sub-DB to Switch Board, Light and ceiling positions etc.

b) Schematic diagram for complete electrical work.

c) The contract shall keep at least one copy each of drawings, conditions of contract, specifications, instructions and schedule of quantities at the site of works available for

reference by any authorized representative Engineer-in-charge (Electrical), at all times during the progress of the works.

d) Contractor has to submit the LT Panel diagram (General Arrangement drawing, Schematic diagram and Bill of material) and take prior approval from Concern Engineer in charge before start manufacturing.

14. COMPLETION DOCUMENTS:
The contractor shall submit 4 copies of as built layout drawings to the Owner after completion of the work. These complete drawings shall give the following information:

a) Layout of all equipment, switch boards, DB's etc.
b) Operation & Maintenance Manuals for all equipments.
c) Manufacturers test report & data sheets for equipment's if any.
d) Layout of lighting & power wiring, UPS wiring Etc.
e) Location of DB's, Sub-mains, cables & earthing.
f) Junction boxes.
g) Cable schedule, DB Charts
h) Schematic diagram for overall electrical distribution duly laminated
i) GA & schematic MV Panel Distribution Boards UPS etc.

TECHNICALSPECIFICATIONS

TECHNICAL REQUIREMENTS & MEASUREMENT SYSTEM

1.0 SCOPE:
This chapter covers the general technical requirements and measurement system of the various components in Internal Electrical Installation works.

1.1 TERMINOLOGY:
1.1.1 The definition of terms shall be in accordance with 18:732-1989 (Indian Standard Code of Practice for Electrical Wiring), except for the definitions of point, circuit, and sub-main wiring, which are defined in clauses 1.2.1, 1.2.3.1, and 1.3.2 hereunder.

1.2 POINT WIRING:

1.2.1 Definition
Point wiring:
Definition: A point (other than socket outlet point) shall include all work necessary in complete wiring to the following outlets from the controlling switch or MCB.

(a)Ceiling rose or connector (in the case of points for ceiling/exhaust fan points, prewired light fittings, and call bells).

(b)Ceiling rose (in case of pendants except stiff pendants).

(c)Back plate (in the case of stiff pendants).

(d)Lamp holder (in the case of goose neck type wall brackets, batten holders and fittings which are not prewired).

1.2.2 Scope
Following shall be deemed to be included in point wiring.

Conduit /Casing -capping, accessories for the same and wiring cables between the switch box and the point outlet.

All fixing accessories such as screws, rawl plug etc. as required.

Metal switch boxes for control switches, regulators and sockets etc, surface/recessed in walls.

Outlet boxes, junction boxes, pull-through boxes-etc, including metal boxes if any, provided with switch boards for loose wires/conduit terminations.

Control switch or MCB, as specified.

Ceiling rose or connector as required. (2 pin and 5 pin socket outlet shall not be used).

Connections to ceiling rose, connector, socket outlet, lamp holder, switch etc.

Interconnecting wiring between points on the same circuit, in the same switch box or from another.

Protective (loop earthing) conductor from one metallic switch box to another in the distribution circuits, and for socket outlets. (The length of protective conductor run along with the circuits/ sub-mains is excluded item the scope of points).

Bushed conduit or porcelain tubing where wiring cables pass through wall etc.

1.2.3 Measurement:

1.2.3.1 Point Wiring:
Unless and otherwise specified, there shall be no linear measurement for point wiring for light points, fan points, exhaust fan points and call bell points.

These shall be measured on basis by counting only.

No separate measurement will be made for interconnections between points in the same distribution circuit and for the circuit wiring including protective (loop earthing) conductors between metallic switch boxes.

1.2.3.2 Wiring for socket outlet points:
Light plug point 5/6 A, Power point5/15A or 6/16A, 20A metallic socket) wiring shall be measured as total length of wiring of total No. of power points as specified in BOQ and shall be measured on linear basis along the run of wiring depending on the actual number and sizes of wires run .

All wiring from the power point outlet may be 15A/5 A or 16A /6 A six pin socket outlet, where so specified in the tender documents.

1.2.3.3 Group control points wiring:
In the case of points with more than one point controlled by the same switch, such points shall be measured in parts i.e. (a) from the switch to the first point outlet as one point and for the subsequent points. the distance from that outlet to the next one and so on shall be treated as separate point(s).The switch for controlling four or more outlets shall be of 15/16 amp. Rating and no extra payment shall be made for the same.
No recovery shall be made for non-provision of more than one switch in such cases.

1.3 CIRCUIT AND SUBMAIN WIRING:

1.3.1 Circuit Wiring:
Circuit wiring shall mean the wiring from the distribution board up to the tapping point for the nearest first point of that distribution circuit, viz. upto the nearest first switch box. No extra payment shall be made for circuit wiring.

1.3.2 Sub-main Wiring:
Sub-main wiring shall mean the wiring item one main/distribution switchboard to another.

1.3.3 Measurement of sub-main wiring:
The sub main wiring shall be measured on linear basis and paid for separately.

1.4. OTHER WIRING WORKS:
Except as specified above for point wiring, circuit wiring and sub-main wiring, other types of wiring 'shall be measured separately on linear basis along the run of wiring depending on the actual number and sizes of wires run.

1.5 SYSTEM OF DISTRIBUTION AND WIRING:

1.5.1. Control at the point of entry of supply:
There shall be a circuit breaker on each live conductor of the supply mains at the point of entry.

1.5.2 Distribution:
The wiring shall be done on a distribution system through main and/or branch distribution boards. The system design as well as the locations of boards shall be as indicated in BOQ/drawings or as specified by the OIL Engineer-in-charge.

Main distribution board shall be controlled by a circuit breaker. Each outgoing circuit shall also be controlled by a circuit breaker.

The branch distribution board shall be controlled by a circuit breaker. Each outgoing circuit shall be provided with a miniature circuit breaker (MCB) of specified rating on the phase or live conductor.

The loads of the circuits shall be divided, as far as possible, evenly between the number of ways of the distribution boards, leaving at least one spare circuit for future extension.

The neutral conductors (incoming and outgoing) shall be connected to a common link (multilayer connector) in the distribution board and be capable of being disconnected individually for testing purposes.

'Power' wiring shall be kept separate and distinct from 'Lighting' wiring, from the level of circuits i.e., beyond the branch distribution boards.

Wiring shall be separate for essential loads (i.e., those fed through standby supply) and non-essential loads throughout.

1.5.3. Balancing of Circuits:
The balancing of circuits in three wire or poly phase installations shall be arranged before hand to the satisfaction of the OIL Engineer-in-charge.

1.5.4 Wiring System:
Wiring shall be done only as per "point wiring" or "running metre" standard, as explained above. Lights, fans and call bells shall be wired in the' lighting' circuits.15A / 16A and 5A / 6A socket outlets and other power outlets shall be wired in the 'Power' circuits. The wiring throughout the system shall be such that there is no break in the neutral wire except in the form of linked MCCB's, MCB's. RCBO's etc.

1.5.5 Run of Wiring:
The wiring shall be in surface casing-capping.
Due consideration shall be given for neatness, good appearance and safety.

1.5.6 Passing through walls or floors:
When wiring cables are to pass through a wall, these shall be taken through a protection (steel)pipe tube of suitable size such that they pass through in a straight line without twist or cross in them on either end of such holes. These pipes (approved make) shall be supplied by the contractor and price of the pipes are to be considered in the offered rate.

The ends of metallic pipe shall be neatly bushed with porcelain, PVC or other approved material.

1.5.7 Run on the bottom floor:
When wiring cables are to run on the bottom floor, these shall be covered with protective steel cover of suitable available size in the SOQ.
The cover to be fixed with 6 SWG 12mm screw with the floor. The floor surface shall be cut for a depth of 1.5 mm to place the cover so that no sharp edge will be exposed. Finishing and mending good damages to the building shall be done after the job is over.

1.6 Joints in wiring:
No bare conductor in phase and / or neutral or twisted joints in phase, neutral, and / or protective conductors in wiring shall be permitted. There shall be no joints in the through-runs of cables. If the length of final circuit or sub main is more than the length of a standard coil, thus necessitating a through joint, such joints shall be made by means of, approved mechanical connectors in suitable junction boxes. Termination of multi stranded conductors shall be done using suitable crimping type thimbles.

1.7 RATINGS OF OUTLETS:
Exhaust fan, fluorescent tubes, compact fluorescent tubes, shall be rated according to their capacity.
5A/6A and 15A/16A socket outlet points shall be rated at 100W and 1000W respectively, unless the actual values of loads are specified.

1.8 CAPACITY OF CIRCUITS:
'Lighting' circuit shall not have more than a total of 10 points of light, fan and socket outlets, or a total connected load of 800W, whichever is less. 'Power' circuit shall have only one outlet per circuit.

1.9 CONFORMITY TO IE ACT, AND STANDARDS:
All electrical works shall be carried out in accordance with the provisions of Indian Electricity Act, 1910, BIS AND National Electric code, National Building Code. List of Rules of particular importance to building installations is given in Appendix for reference.The works shall also conform to relevant Indian Standard Codes of Practice (COP) for the type of work involved. (See Appendix B).In all electrical installation works, relevant safety codes of practice shall be followed. Guidelines on safety procedure outlined in Appendix' C' should be adopted.

1.10 GENERAL REQUIREMENTS OF COMPONENTS:

1.10.1 Quality of Materials:

All materials and equipments supplied by the contractor shall be new. They shall be of such design, size and material as to satisfactorily function under the rated conditions of operation and to withstand the environmental conditions at site.

1.10.2 Ratings of Components:
All components in a wiring installation, conductors, switches and accessories shall be of appropriate ratings of voltage, current, and frequency, as indicated in SOQ.

1.10.3 Conformity to Standards:
All components shall conform to relevant Indian Standard Specification, as per board list given in Appendix' A' including amendments or revisions there of up to the date of tender acceptance, shall be applicable in the respective contracts.

1.10.4 Interchangeability:
Similar parts of all switches, lamp holders, distribution boards, switchgears, ceiling roses, brackets, pendants, fans and all other fittings of the same type shall be interchangeable in each installation.

1.10.5 General Notes:

a) Items shall be procured from the manufacturer or their authorized dealers only. Bidder shall submit valid authorized dealership certificate for each item along with the offer, otherwise offer will not be considered for evaluation.

b) All the items shall be brand new. Regulators and light fittings shall bear ISI monogram for stringent quality.

c) Item shall be guaranteed for a period of one year from the date of receipt of materials against any manufacturing defect or workmanship.

d) Bidder shall confirm for energy efficiency of items wherever stipulated in the specifications.

e) Guarantee certificates properly stamped & signed and user's manual shall be sent along with the supply.

f) Technical leaflets/catalogues are to be supplied for each item along with the offer.

g) Packing should be adequate to avoid moisture ingress and transit damage.

1.11 CABLES:
1.11.1 Wiring cables:
Conductors of wiring cables shall be of copper. The smallest size of conductor for' lighting' circuits shall have a nominal cross sectional area of not less than 1.5 sq mm. The minimum size of conductor for 'power' wiring shall be 4 sq mm stranded cable. All wiring cables shall be

FRLS, single core, PVC insulated, unsheathed, 1100V grade, FIA, TAC, IS-694 approved with flexible copper conductor. Any other cables are as per BOQ.

1.12 PVC CASING and CAPPING:

1.12.1 Fixing casing-capping:
PVC casing and capping shall be of standard material free from defects of any kind. It should be properly finished and conform to relevant standards. This system of wiring is suitable for low voltage installation where polyvinyl chloride (PVC), rubber, plastic or other approved insulated cables shall be used in the wiring work carried within PVC casing enclosure.PVC casing and capping wiring shall not be used damp or poorly ventilated places without taking suitable precaution.PVC casing and capping should be strong and properly fitted so as to hold wires laid in it 70% to its full capacity for all areas. For this reason, the thickness of the PVC casing and capping shall be 1.6mm for sizes upto 25mm and 1.5mm or more for sizes up to 50mm.It should be rigidly screwed at150mm interval crosswise with suitable wood screws of 25mm length turned in PVC sleeve inserted in neatly drilled holes of proper size and depth with cup washer to give proper grip over more surface area. Providing and fixing of PVC casing and capping include bends, elbows, tees, inside and outside corners, round blocks and painting. It can be run whether in horizontal or vertical position as required. The inspection shall be done from time to time as the work progresses. Capping shall not be put on until the work has been inspected after the wires are laid in position and approved by the Engineer-in-charge-in-charge.

1.12.2 Providing earth continuity wires:
The earth continuity wire shall be provided in the casing throughout the length of wiring. The size of earth continuity wire shall be same size with the main wire for circuits. All metallic parts, switchboards, light fittings and power sockets shall be connected to the earth wires and the connection shall be electrically and mechanically sound.

1.12.3 Size and Measurement:
The length of the PVC casing capping is available from 1.8 to 3m.The unit of measurement shall be in meters, measured to the nearest cm. The width, depth and thickness of PVC casing and capping shall be as given below:

a. 25mm x 10mm x 1.2mm thick
b. 30mm x 10mm x 1.2mm thick
c. 40mm x 20mm x 1.5mm thick
f. 50mm x 20mm x 1.5mm thick

The maximum number of PVC insulated 650/1100V grade copper conductors that can be drawn in a given size of casing should not be more than 70% of its cross sectional area.

1.13 PVC Conduits:

1.13.1

All rigid conduit pipes shall be of medium duty PVC conduit of standard quality and be ISI marked.
The maximum number of PVC insulated cables conforming to IS:694-1990 that can be drawn in one conduit is given size wise in Table I, and the number of cables per conduit shall not be exceeded. Conduit sizes shall be selected accordingly in each run.No steel conduit less than 20mm in diameter shall be used.

1.13.2
The conduit wiring system shall be complete in all respects, including their accessories.

1.13.3 Outlets:
The switch box or regulator box shall be made of sheet metal on all sides, except on the front. The wall thickness shall not be less than 1.2 mm (18 gauge) for boxes up to a size of 20 cm X 30 cm, and above this size 1.6 mm (16 gauge) thick MS boxes shall be used. The metallic boxes shall be duly painted with anticorrosive paint before erection as per chapter 10 of these Specifications.

Where a large number of control switches and/or fan regulators are required to be installed at one place, these shall be installed in more than one outlet box adjacent to each other for ease of maintenance.

An earth terminal with stud and 2 metal washers shall be provided in each MS box for termination of protective conductors and for connection to socket outlet/metallic body of fan regulator etc.

Clear depth of the box shall not be less than 60 mm, and this shall be increased suitably to accommodate mounting of fan regulators in flush pattern.

1.13.14 Additional requirements:

(i) Making chase:
The chase in the wall shall be neatly made, and of ample dimensions to permit the conduit to be fixed in the desired manner.

The conduits shall be buried in the wall before plastering, and shall be finished neatly after erection of conduit.

(ii) Fixing conduits in chase:
The conduit pipe shall be fixed by means of staples, J-hooks, or by means of saddles, not more than 60 cm apart.

An threaded joints of conduit pipes shall be treated with approved preservative compound- to secure protection against rust.

(iii) Fixing conduits in RCC work:

The conduit pipes shall be laid in position and fixed to the steel reinforcement bars by steel binding wires before the concreting is done. The conduit pipes shall be fixed firmly to the steel reinforcement bars to avoid their dislocation during pouring of cement concrete and subsequent tamping of the same.

Fixing of standard bends or elbows shall be avoided as far as practicable, and all curves shall be maintained by bending the conduit pipe itself with a long radius which will permit easy drawing in of conductors.

Location of inspection / junction boxes in RCC work should be identified by suitable means to avoid unnecessary chipping of the RCC slab subsequently to locate these boxes.

(iv) Fixing inspection boxes:
Suitable inspection boxes to the minimum requirement shall be provided to permit inspection, and to facilitate replacement of wires, if necessary.

These shall be mounted flush with the wall or ceiling concrete. Minimum 65 mm depth junction boxes shall be used in roof slabs and the depth of the boxes in other places shall be as per IS:2667-1977.

Suitable ventilating holes shall be provided in the inspection box covers,

(v) Fixing switch boxes and accessories:
Switch boxes shall be mounted flush with the wall. All outlets such as switches, socket outlets etc. shall be flush mounting type.

(vi) Fish wire:
To facilitate subsequent drawing of wires in the conduit, GI fish wire of 1.2 mm (18 SWG) shall be provided along with the laying of the recessed conduit.

1.13.15 Bunching of cables:
Cables shall always be bunched so that the outgoing and return cables are drawn into the same conduit.

Where the distribution is for three phase loads only, conductors for all the three phases and neutral wire shall be drawn in one conduit.

1.13.16 Earthing requirements:
The entire system of metallic work, including the outlet boxes and other metallic accessories, shall be mechanically and electrically continuous by proper screwed joints, or by double check nuts at terminations. The conduit shall be continuous when passing through walls or floors.

Protective (loop earthing) conductor(s) shall be laid along the runs of the conduit between the metallic switch boxes and the distribution boards/ switch boards, terminated thereto.

These conductors shall be of such size and material as specified. Depending upon their size and material, the protective earth conductors shall be either drawn inside the conduits along with the cables, or shall be laid external to the conduits. When laid external to the conduits, this shall be properly clamped with the conduit at regular intervals.

The protective conductors shall be terminated properly using earth studs/ earth terminal block etc. as required.

Gas or water pipe shall not be used as protective conductor (earth medium).

TABLE-I:

Maximum Permissible No of single core cable that can be drawn into casing capping

Nominal cross-Sectional area of Conductor in sq. mm.	CASING CAPPING SIZE					
	10/15mm x 10mm	20mm x 10mm	25mm x 10mm	30mm x 10mm	40mm x 20mm	50 mm x 20mm
1.50	3	5	6	8	12	18
2.50	2	4	5	6	9	15
4.00	2	3	4	5	8	12
6.00	-	2	3	4	6	9
10.00	-	1	2	3	5	8
16.00	-	-	1	2	4	6
25.00	-	-	-	-	2	5
35.00	-	-	-	-	2	4

TABLE-II:

Maximum number of PVC insulated 650/1100 V grade copper conductor cable conforming to IS: 694-1990 which can be drawn through a conduit

Nominal cross-Sectional area of Conductor in sq. mm.	CONDUIT DIAMETER											
	20mm		25mm		32mm		38mm		51 mm		64mm	
	S	B	S	B	S	B	S	B	S	B	S	B
1.00	3	2	5	4	7	6	9	8	11	10	13	12
1.50	5	4	8	6	15	10	-	-	-	-	-	-
2.50	4	2	6	4	10	8	-	-	-	-	-	-
4.00	2	-	4	4	8	6	-	-	-	-	-	-
6.00	2	-	4	3	6	5	-	-	-	-	-	-
10.00	-	-	3	2	5	4	6	5	-	-	-	-
16.00	-	-	2	2	3	3	5	4	9	6	11	7
25.00	-	-	-	-	3	2	5	3	8	6	9	7

35.00 - - - - - - 3 2 6 5 8 6

Note:
The above table shows the maximum capacity of conduits for a simultaneous drawing in of cables.

The columns headed 'S' apply to runs of conduits which have distance not exceeding 4.25 m between draw in boxes and which do not deflect from the straight by an angle of more than 15 degrees. The columns headed 'B' apply to runs of conduit which deflect from the straight by an angle of more than 15 degrees. Conduit sizes are the nominal external diameters.

1.14 WIRING ACCESSORIES:

1.14.1 Control switches for points:
Control switches (single pole switches) carrying not more than 16A shall be of clamp on type complete with plate, as specified, and the switch shall be "ON" when the knob is down. The type and current rating of switch controlling a group of points, or discharge lamps, or a single large load, shall be specified in the tender documents. Control switch shall be placed only in the live conductor of the circuit. No single pole switch or fuse shall be inserted in the protective (earth) conductor, or earthed neutral conductor of the circuit.

1.14.2 Socket outlets:
Socket outlets shall also be of clamp on type complete with plate. These shall be rated either for 6A, or 16A. Combined 6A/16A six pin socket outlet shall be provided in 'power' circuits wherever specified. Socket outlets and plugs shall only be of 3 pin type; the third pin shall be connected to earth through protective (loop earthing) conductor. 2 pin or 5 pin sockets shall not be permitted to be used. The control switches for 6A and 16A socket outlets shall be kept along with the socket outlets.

1.14.3 Switch box covers:
These shall be molded type of suitable size.

1.15 FITTINGS:

1.15.1 Indoor type fittings specification:

Mirror optic suspension mount T5 fluorescent tube light luminaire with all accessories and lamps, ready for installation as per the following description.

1) Optical system should provide all round glare and beam control. Glare shall be as per British Lighting guide-3, Cat 2.

2) Luminaire shall be supplied with:
a) 1/2x28 Watt T5 fluorescent lamp.
b) 1/3/4 x 14 Watt T5 fluorescent lamp.

3) Luminaires shall be pre-wired up to the terminal block and fitted with High Performance electronic ballast (THD<10%) as standard, PF> 0.95; ballast to conform to IS/IEC for safety/ performance.

4) Luminaires shall be supplied with all standard accessories (including chains etc.) for suspension mounting.
Power supply: 230/240v, 50 Hz, single phase
Make: Philips/Bajaj/Crompton Greaves/GE/Havells/Osram
Model:
a) Similar to Philips make TCS150 2xTL5-28W 2x 28W T5 fluorescent lamp.
b) Similar to Philips make TPH824 2xTL5-28W luminaire for 2x 28w T5 Decorative fluorescent lamp
c) Similar to Philips TWG207, 1xTL5 14w.
d) Similar to Philips TCS150 1xTL5-28W, 1xTL5 28w.
e)Similar to Philips make FBH145 M 1xPL-C/4P13W HFM type for 1 x 13 W CFL
The type of fittings shall be as specified in BOQ.

1.15.2 LED Lighting Luminaire:
High power and high lumen efficient LEDs suitable for following features shall be used:

Lumen output > 65 Lumen per Watt
Light color Neutral White -4000K
Voltage 220-240V AC 50 Hz
Driver Constant Current Driver
Optics High Efficiency Powder Coated reflectors and High Transitivity Opal Diffuser Cover
a. The efficiency of the LED lamps at 1100C junction temperature shall be more than 80%.
b. The working life of the lamp at junction temperature of 1100C for 350mA current shall be more than 50,000 hours of accumulative operation and shall be suitable for continuous operation of 24 hours per day .these features shall be supported with datasheet.
c. Adequate heat sink with proper thermal management shall be provided.
d. Colour temperature of the proposed white colour LED shall be 4000k.
e. The output of LED shall be more than 65 lumen per watt at minimal operating current and shall ensure guaranteed operation life of 50,000 burning hours with controlled junction temperature of 1100C.
f. Efficiency of driver electronics shall be more than 85%.
g. Power factor of complete fitting shall be more than 0.9
h The driver card shall withstand 440V and shall resume normal working when nominal voltage is applied again.

i. Thermal management shall be in such a way that LED junction temperature shall not go beyond 80 degree centigrade

1.16 SWITCHGEAR AND CONTROLGEAR - General aspects:

All items of switchgear and distribution boards (DB's) shall be metal clad type.The types, ratings and/or categories of switchgear and protective gear shall be as specified in the SOQ.
RCBs (ELCBs) where specified, shall conform to the requirements of current rating, fault rating, single phase or three phase configuration and sensitivity laid down in the SOQ.
While each outgoing way of distribution board (DB) shall be of miniature circuit breaker (MCB) as specified, and of suitable rating on the phase conductor, the corresponding earthed neutral conductor shall be connected to a common neutral terminal block and shall be capable of being disconnected individually for testing purposes.

(v)Independent earth terminal block:
Every distribution board (single phase as well as 3 phase) shall have an earth terminal block identical to, but independent from neutral terminal block, to enable termination of protective (loop earthing) conductors (incoming as well as outgoings) individually by screwed connection and without twisting.
Earthing terminal (1 for single phase and 2 for 3 phases) shall be provided on the metal cladding of switches and DB's for body earthing. These shall be suitably marked.
Knock out holes, with or without end plates as per standard design of manufacturers, shall be provided in the metal cladding of switches and DBs for termination of conduits/cables.

1.17 PRE-WIRED MCB DISTRIBUTION BOARDS:
Pre wired MCB DB's shall be provided only where specified. The complete board shall be factory fabricated and shall be duly pre wired in the works, ready for installation at site. The board shall be of wall mounted, cubical type construction, fabricated out of 1.6mm thick sheet steel, with stove enameled paint finish.

The board shall also be provided with a loose wire box as a compartment for the complete width and, depth of the board, and of minimum height of 125mm in case of TPN DB's, and 100mm in case of SPN DB's.

The board shall be provided with a hinged cover of 1.6mm thick sheet steel in the front. Only the knobs of the MCB's shall protrude out of the front covers through openings neatly machine made for the purpose.

Knock out holes at the bottom, and detachable plate with knock out holes at the top of the board shall be provided.
Each distribution board shall be provided with a circuit list giving details of each circuit which it controls and the current rating of the circuit, and the size of the MCB.

The board shall be complete with the following accessories:
(a) 100 A copper bus bar(s).

(b) Neutral link.
(c) Common earth bar.
(d) DIN bar for mounting MCB's
(e) Screw type terminal connectors suitable for incoming and outgoing cables.
(f) Earthing stud(s).

The board shall be fully prewired with single core PVC insulated copper conductors/insulated solid copper links, and terminated on to extended type terminal connectors, suitable for connections to the sizes of the respective conductors.

All incoming and outgoing wiring to the pre wired MCB DB's shall be terminated only in the Elemex type extended terminal connectors to be provided within the DB. The terminal connectors shall, therefore, be so provided as to facilitate easy cable connections and subsequent maintenance.

A common copper earth bar shall be provided within the loose wire box. The common neutral bar as well as the terminal connectors shall, however, be provided within the main compartment just below the loose wire box.

1.18 MINIATURE CIRCUIT BREAKERS (MCB's):
'C' series MCB's shall be invariably used for all loads.
Ratings (A), number of poles, type as MCB or isolator, etc. shall be as specified in the SOQ. The MCB's shall be of minimum 10KA rupturing capacity.

1.19 SWITCH BOARD LOCATIONS:
1.19.1 General aspects:
Switch boards shall be located as indicated on the drawings. However exact location will be as per suitable available spaces.

1.20 SWITCH BOARD INSTALLATION:
A switch board shall not be installed so that its bottom is within 1.25 m above the floor. Where it is required to terminate a number of conduits on a board, it may be convenient to provide a suitable PVC adopter box for the purpose. Such boxes shall be provided with the prior approval of the Engineer-in-charge (Electrical) and this will not be paid for separately. No apparatus shall project beyond any edge of the panel.

1.21 WIRING OF SWITCH BOARDS AND DISTRIBUTION BOARDS:

All connections between pieces of apparatus, or between apparatus and terminals on a board shall be neatly arranged in a definite sequence, following the arrangement of the apparatus mounted thereon, avoiding unnecessary crossings.

Cables shall be connected to terminals either by crimped or soldered lugs, unless the terminals are of such a form that they can be securely clamped without cutting away of cable strands.
All bare conductors shall be rigidly fixed in such a way that a clearance of at least 2.5 cm is maintained between conductors of opposite polarity or phase, and between the conductors and any material other than insulating material.

The incoming and outgoing cables shall be neatly bunched and shall be fixed in such a way that the door shall be capable of swinging through an angle of not less than 90 degrees.

1.22 MARKING OF APPARATUS:

(i) Marking of earthed neutral conductor:
On the switchgear, the earthed conductor of a two wire system, or an earthed neutral conductor of a multi-wire system, an indication of a permanent nature shall be provided to identify the earthed neutral conductor. In this connection Rule 32(1) of Indian Electricity Rules 1956 (see Appendix C) shall be referred to. The neutral conductor shall be black in colour.

(ii) Main earthing terminal:
The main earthing terminal in the main switch board shall be permanently marked as "SAFETY EARTH - DO NOT REMOVE".

All distribution boards shall be marked 'L' for lighting or 'P for power and 'E' for essential as the case may be.

When a board is connected to a voltage higher than 250V, all the terminals or leads of the apparatus mounted on it shall be marked in the following colours to indicate the different poles or phases to which the apparatus or its different terminals may have been connected:

Where a four wire, three phase wiring is done, the neutral shall preferably be in one colour, and the other three wires in another colour.
Three phases - Red, Blue & Yellow AND Neutral - Black
All marking required under this rule shall be clear and permanent.

1.23 FANS, REGULATORS AND CLAMPS:

1.23.1 Exhaust Fans:
Exhaust fans shall conform to relevant Indian Standards. Exhaust fans shall be erected at the places indicated on the drawings. For fixing an exhaust fan, a circular hole shall be provided in the wall to suit the size of the frame, which shall be fixed by means of rag bolts embedded in the wall. The hole shall be neatly plastered to the original finish of the wall. The exhaust fan shall be connected to the exhaust fan point, which shall be wired as near to the hole as possible, by means of a flexible cord, care being taken to see that the blades rotate in the proper direction.

1.23.2 Fan Regulators:
Electronic modular type fan regulator shall be from approved vendor. The regulators are to be procured from authorized dealer to ensure genuineness of the material. Fan regulator shall be fixed in the switch board as per the ceiling fan circuit shown in the drawing.

1.24 WORKMANSHIP:

Good workmanship is an essential requirement to be complied with. The entire work of manufacture/fabrication, assembly and installation shall conform to sound Engineering practice.

The work shall be carried out under the direct supervision of a first class licensed foreman, or of a person holding a certificate of competency issued by the State Govt. for the type of work involved, employed by the contractor, who shall rectify then and there the defects pointed out by the Engineer-in-charge (Electrical) during the progress of work.

1.25 COMMISSIONING ON COMPLETION:
Before the workman leaves the work finally, he must make sure that the installation is in commission, after due testing.

1.26 DRAWINGS:
The work shall be carried out in accordance with the drawings enclosed with the tender documents and also in accordance with detailing to be receive from OIL Engineer-in-charge in charge immediately after award of contract also modification thereto from time to time as approved by the OIL Engineer-in-charge.

All circuits shall be indicated and numbered in the wiring diagram and all points shall be given the same number as the circuit to which they are electrically connected.

1.26.1 Following drawings & documents shall be supplied.

Sl No.	Name of the Document	No. of Copies after Order	
		For Approval	Final
1.	Specification Sheet	2	6
2.	Technical particulars	2	6
3.	Feeder Details	2	6
4.	General Arrangement Drag. and Foundation Plan	2	6
5.	Schematic/wiring Diagrams	2	6
6.	Calculation for Bus Bar sizing	2	-
7.	Terminal Arrangement Drawing	2	6
8.	Illustrative and Descriptive Literature	-	4
9.	Catalogues for brought out accessories.	-	4

10. Installation and operation and maintenance manual - 4
11. Test Certificates i) Switch Board, MCCB's - -
ii) Routine - 4
12. Guaranty/Warranty Certificate - 2
13. Spare Parts List if any - 4

Note: All final drawings shall be submitted prior to despatch of equipment. These shall be made in sets and shall be supplied in fine plastic coated folder.

1.27: LT Panel:

Following documents to be submitted within one month from the issue of work order:

1) Contractor has to supply the panel from panel manufacturer / channel partner / authorized dealer of 415V AC PCC panels / switchboards. In case of authorized dealer/ Channel partner and offering on behalf of OEM, the Contractor shall submit copy of valid dealership/channel partner certificate /authorization letter from the OEM.

2)Contractor has to furnish certificate from manufacturer / channel partner mentioning they have experience of design, manufacturing, and supply of minimum 1 set of 415V or LT MCC / PCC panel or feeder pillar with 400/630A/800A (minimum) MCCB or Air Circuit Breaker in any central Govt./Govt.PSU/Public Limited Companies during last 5 years.

3) Contractor has to submit following documents from Panel builder/Channel partner, CPRI or any other organisation accredited by National Accreditation Board for Testing and Calibration Laboratoies, Govt of India:
(i) Copy of test certificate for busbar fault level of 50kA
(ii) Copy of Temp rise test of busbar as per IS.
(iii) Short time current withstand test (50 kA for 1 sec).

4) Contractor shall submit General arrangement, Schematic drawing, Single line diagram and bill of material of panel.

5) The Panel shall be inspected by OIL at manufacturer's works before dispatch and all routine tests shall be witnessed during inspection. Party/Bidder to inform OIL for inspection minimum 15 days before dispatch. All routine tests as per ISI shall be done at the time of inspection.

APPENDIX-A

APPROVED MAKE OF MATERIAL:
1 SINGLE CORE COPPER CABLES(STRANDED/FLEXIBLE) 1100 V GRADE, IS 694 COPPER CONDUCTOR FRLS INSULATED WIRES.
o FINOLEX
o HAVELL'S
o L&T
o Polycab

2. COPPER LUGS
o DOWEL or EQUIVALENT

3. SWITCH SOCKET (MODULER TYPE)
As per BOQ

4. PVC CASING CAPPING
§ Plaza/Payal
§ AKG
§ Presto plast

5. METAL CLAD SWITCH SOCKET UNIT
§ LEGRAND,
§ MERLIN GERIN
§ SIEMENS

6. CEILING FAN
§ Havells
§ Bajaj
§ Crompton Greaves
§ KHAITAN

7. EXHAUST FANS
§ USHA
§ KHAITAN
§ CG

8. LIGHT FITTINGS
§ PHILIPS
§ CROMPTON
§ GE
§ Bajaj
§ Havells

9. MCCB
o SCHNEIDER/MERLIN GERIN
o SIEMENS
o LEGRAND

10. SFU/FSU/HRC FUSES/FUSE LINKS
§ SIEMENS
§ GE/Indo asian/ Havells

11.MCB'S& MCB DBs (I0KA)
§ SCHNEIDER.
§ SIEMENS

§ LEGRANDS

12. PVC conduit
- o AKG
- o Plaza
- o Presto plast
- o Richa

OTHER ITEMS:

AS APPROVED BY THE ENGINEER-IN-CHARGE IN-CHARGE OR AS PER SOQ AND SPECS.

APPENDIX - B

IMPORTANT INDIAN STANDARDS

(1) IS:732 - 1989
Code of practice for electrical wiring installations.
(2) IS:4648 - 1968
Guide for electrical layout in residential buildings.
(3) IS:8061 - 1976
Code of practice for design, installation and maintenance of service lines up to and including 650V.
(4) IS:8884 - 1978
Code of practice forinstallation of electric bells and call system.
(5) IS:5578 - 1985
Guide for conductor marking of insulated
(6) IS:11353- 1985
Guide for uniform system of marking and identification of conductors and apparatus terminals.
(7) IS:5728 - 1970
Guide for short-circuit calculations.
(8) IS:7752(part-I)-1975
Guide for improvement of power factor in consumer installation Low and medium supply voltages.
(9) IS:3 646(part-I)-1966
Code of practice for interiorillumination.Principlesfor good lightingand aspects of design.
(10) IS:3646(part-2)-1966
Code of practice for illumination. Schedule of interior illumination and glare index.
(11) IS:3646(part-3)-1968
Code of practice for interior illumination.Calculation of coefficients of utilization by the BZ method lighting.
(12) IS:2672 - 1966
Code of practice for library lighting.
(13) IS:lOI18(part-I)-1982

Code of practice for selection, installation and maintenance switchgear and of controlgear General.
(14) IS:lOI18(part-2)-1982
Code of practice for selection, installation and maintenance of switchgear and controlgear .
(15) IS:l 0 118(part-3)-1982
Code of practice for selection, installation and maintenance of switchgear and controlgearinstallation.
(16) IS:I0118(part-4)-1982
Code of practice for selection, installation and maintenance of switchgear and controlgearMaintenance.
(17) IS:4146 - 1983
Application guide for voltage transformers.
(18) IS:4201 - 1983
Application guide for current transformers.
(19) IS:5547 - 1983
Application guide for capacitor voltage transformers
(20) IS:2309 - 1989
Code of practice for the protection and alliedstructures against lightning.
(21) IS:3043 - 1987
Code of practice for earthing.
(22) IS :5216(part-l)-1982
Guide for practices safety procedures and in electrical work General.
(23) IS:5216(part-2)-1982
Guide for safety procedures and practices in electrical work: Life saving techniques
(24) IS:3696(part-2)-1966
Safety code For scaffolds and ladders
(25) IS:374- 1979
Electric ceiling type fans and regulators.
(26) IS:2997 - 1964
Air circulator type electric fans and regulators.
(27) IS:11037- 1984
Electronic type fan regulators.
(28) IS:12155- 1987
General and safety requirements for fans and regulators for household and similar purposes.
(29) IS:4237 - 1983
General requirements for switchgear and controlgear for voltages not exceeding 1000 V ac or 1200V DC.
(30) IS:6875(part-1)-1973
Control switches (switching Devices for control and auxiliary circuits including contactor relays) for voltages up to and including 1000 V AC and 1200VDC : General requirements and tests.
(31) IS:6875(part-2}.1973
Control switches (switching devices for control and auxiliary circuits including contactor relays) for voltages up toand including 1000 V AC and 1200V DC : Push- buttons and related control switches.
(32) IS:6875(part-3)-1980

Control switches (switching devices for control and auxiliary circuits including contactor relays) for voltages upto and including 1000 V AC and 1200VDC: Rotary control switches.
(33) IS:10027-1981
Composite units of air-break switches and rewireable type fuses for voltages not exceeding 650 V AC.
(34) IS:4064(part-1)-1978
Air break switches, air break disconnectors, air-break switch disconnectors and fuse-combination units for voltages not exceeding 1000 V AC or 1200 V DC : General requirements
(35) IS:2675 - 1983
Enclosed distribution fuse-boards and cutouts for voltage not exceeding 1000V
(36) IS:8828 - 1978
Miniature air break circuit breakers for voltages not exceeding 1000 volt.
(37) IS:13032- 1991
Miniature circuit breaker boards for voltages up to and including 1000 volts AC.
(38) IS:12640- 1988
Residual current operated circuit breakers.
(39) IS:2959 - 1985
Contactors for voltages not exceeding 1000 V AC or 1200 V DC
(40) IS:8623(part-1)-1977
Factory built assemblies of switchgear and controlgear for voltages up to and including 1000 V AC and 1200V DC : General requirements.
(41) IS':8623(Part-2)-1980
Factory built assemblies of switchgear and controlgear for voltages upto and including 1000 V AC and 1200V DC .Particular requirements for busbartrunking system (busways).
(42) IS:694 - 1990
PVC Insulated cables for working voltages upto and including 1100 V
(43) IS:l554(part-1)-1988
PVC insulated (heavy duty) electric cables: For working voltages upto and including 1100 V
(44) IS:3 961 (part-5) 1968
Recommended current ratings for cables: PVC insulated light duty cables.
(45) IS:4288 - 1988
PVC insulated (heavy duty) electric cables with solid aluminium conductors for voltages upto and including 1100 V
(46) IS:9537(part-1)-1980
Conduits For electrical installations :Generalrequirements.
(47) IS:9537(part-2)-1981
Conduits for electrical installations Rigid steel conduits
(48) IS:3480 - 1966
Flexible steel conduits for electrical wiring.
(49) IS:2667 - 1988
Fittings for rigid steel conduits for electrical wiring
(50) IS:3837 - 1976
Accessories for rigid steel conduits for electrical wiring
(51) IS:5133(part-l)-1969
Boxes for enclosure of electrical accessories: Steeland cast iron boxes.
(52) IS:2412 - 1975
Link clips for electrical wiring

(53) IS:371 - 1979
Ceiling roses
(54) IS:3854 - 1988
Switches for domestic and similar purposes
(55) IS:4615 - 1968
Switch socket outlets (non interlocking type).
(56) IS:4160 - 1967
Interlocking switch socket outlet.
(57) IS:1293 - -1988
Plugs and socket outlets of rated voltage up to and including 250volts and rated current upto and including 16 amperes
(58) IS:418- 1978
Tungsten filament general service electric lamps.
(59) IS:2418(part-l)-1977
Tubular fluorescent lamps for general lighting service:Requirements and tests.
(60) IS:1258 - 1987
Bayonet lamp holders
(61) IS:3323 - 1980
Bi-pin lamp holders for tubular fluorescent lamps
(62) IS:3324 - 1982
Holders for starters for tubular fluorescent lamps
(63) IS: 2215 - 1984
Starters for fluorescent lamps
(64) IS: 1534(part-l)-1977
Ballast for fluorescent lamps: For switch startcircuits.
(65) IS: 1569 - 1976
Capacitors for use In tubular fluorescent high pressure mercury and low pressure sodium vapor discharge lamp circuits.
(66) IS: 1913(part-l)-1978
General and safety requirements for luminaries: Tubular fluorescent lamps
(67) IS: 1 03 22(part-l)-1982
Luminaries: General requirements.
(68) IS: 10322(part-2)-1982
Luminaires Constructional requirements
(69) IS: 10322(part-5/Sec-l)
Luminaries Particular requirements: Recessed luminaries.
(70) IS: 1777 - 1978
Industrial reflectors luminaries with metal reflector
(71) IS: 302- 1979
General and safety requirements for household and similar electrical appliances.
(72) IS: 2268 - 1988
Electric call bells and buzzers for indoor use.
(73) IS: 6236 - 1971
Direct recording electrical measuring instruments.
(74) IS: 1248(part-l)-1983
Direct acting indicating analogue electrical measuring instruments and their accessories: General requirements.

(75) IS: 1248(part-2)-1983
Direct acting indicating analogue electrical measuring instruments and their accessories.Ammeters and voltmeters.
(76) IS: 722(part-I)-1988
AC electricity meters: General requirements and tests.
(78) IS: 2551 -1982
Danger notice plates
(79) IS: 2448(part-1)-1963
Adhesive insulating tapes for electrical purposes: Tapes with cotton textile substrates
(80) IS: 1885(part-1)-1961
Electrotechnicalvocabulary : Fundamental definitions
(81) IS: 1885(part-16/Sec-1)
Electrotechnical vocabulary: Lighting: General -1968 aspects
(82) IS: 1885(part-16/Sec-2)
Electrotechnicalvocabulary:Lighting: General -1968 illumination, lighting fittings and lighting for traffic and signaling.
(83) IS: 1885(part-17)-1979
Electrotechnicalvocabulary : Switchgear andcontrolgear
(84) IS: 1885(part-32)-1971
Electrotechnical vocabulary: Cables, conductors and accessones for electricity supply.
(85) IS: 2629 Recommended practice for hot dip galvanizing on iron and steel.
(86) IS: 4759 Hot dip zink coatings on structural steel and other allied products.

Following Indian Standards are for LED Lamp:

1. 16101: 2012 General Lighting - LEDs and LED modules - Terms and Definitions
2. 16102(Part 1): 2012 Self- Ballasted LED-Lamps for General Lighting Services
Part 1 Safety Requirements
3 16102(Part 2): 2012 Self-Ballasted LED-Lamps for General Lighting Services Part 2 Performance Requirements
4 16103(Part 1): 2012 Led Modules for General Lighting- Safety Requirements
5 15885(Part 2/Sec 13): 2012 Lamp Control Gear Part 2 Particular Requirements Section 13 d.c. or a.c. Supplied Electronic Control gear for Led Modules
6 16104: 2012 D.C. or A.C. Supplied Electronic Control Gear for LED Modules Performance requirements
7 16105: 2012 Method of Measurement of Lumen Maintenance of Solid -State Light (LED) Sources
8 16106 : 2012 Method of Electrical and Photometric Measurements of Solid-State Lighting (Led) Products
9 16108 : 2012 Photobiological Safety of Lamps and Lamp Systems
10. Relevant IEC standards for LED lighting Lamp and luminaires.

APPENDIX-C:

SAFETY PROCEDURE:

1. The National Electricity Code and National Building Code as amended up to date, are to be followed in their entirety. Any installation or portion of installation which does not comply with these codes should be got rectified immediately.

2. The detailed instructions on safety procedures given in B.I.S. Code No. 5216-1969-"Code of Safety Procedures and Practices in Electrical Works" shall be strictly followed.

3. No inflammable materials shall be stored in places other than the rooms specially constructed for this purpose in accordance with the provisions of Indian Explosives Act. If such storage is unavoidable, it should be allowed only for a short period and in addition, special precautions, such as cutting off the supply to such places at normal times, storing materials away from wiring and switch boards, giving electric supply for a temporary period with the permission of consultants shall be taken.

4. The electrical switchgears and distribution boards should be clearly marked to indicate the areas being controlled by them.

5. Before energizing on an installation after the work is completed, it should be ensured that all tools have been removed and counted, no person is present inside any enclosure of the switch board etc. any earthing connection made for doing the work has been removed.

APPENDIX-D:

GENERAL HEALTH, SAFETY AND ENVIRONMENTAL (HSE) ASPECTS:

1. It will be solely the Contractor's responsibility to fulfill all the legal formalities with respect to the Health, Safety and Environmental aspects of the entire job (namely; the person employed by him, the equipment, the environment, etc.) under the jurisdiction of the district of that state where it is operating. Ensure that all sub-contractors hired by him comply with the same requirement as the Contractor himself and shall be liable for ensuring compliance all HSE laws by the sub or sub-sub contractors.

2. Every person deployed by the Contractor in a mine must wear safety gadgets to be provided by the Contractor. The Contractor shall provide proper Personnel Protective Equipment as per the hazard identified and risk assessed for the job and conforming to statutory requirement and Company PPE schedule. Safety appliances like protective footwear, Safety Helmet and Full Body harness has to be DGMS approved. Necessary supportive document shall have to be submitted as proof. If the Contractor fails to provide the safety items as mentioned above to the working personnel, the Contractor may apply to the Company for providing the same. Company will provide the safety items, if available. But in turn, Company will recover the actual cost of the items by deducting from Contractor's Bill. .

However, it will be the Contractor's sole responsibility to ensure that the persons engaged by him in the mines use the proper PPE while at work. All the safety gears mentioned above are to be provided to the working personnel before commencement of the work.

3.The Contractor shall prepare written Safe Operating Procedure (SOP) for the work to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOP should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the Contractor and how it is to be managed.

4. The Contractor shall provide a copy of the SOP to the person designated by the mine owner who shall be supervising the Contractor's work.

5. Keep an up to date SOP and provide a copy of changes to a person designated by the Mine Owner/Agent/Manager.

6. Contractor has to ensure that all work is carried out in accordance with the Statute and SOP and for the purpose he may deploy adequate qualified and competent personnel for the purpose of carrying out the job in a safe manner. For work of a specified scope/nature, he should develop and provide to the mine owner a site-specific code of practice in line.

7. All persons deployed by the Contractor for working in a mine must undergo Mines Vocational Training, initial medical examination, PME. They should be issued cards stating the name of the Contractor and the work and its validity period, indicating status of MVT, IME & PME.

8.The Contractors hall submit to DGMS returns indicating - Name of his firm, Registration number, Name and address of person heading the firm, Nature of work, type of deployment of work persons, Number of work persons deployed, how many work persons hold VT Certificate, how many work persons undergone IME and type of medical coverage given to the work persons.

9. The return shall be submitted quarterly (by 10th of April, July, October & January) for contracts of more than one year. However, for contracts of less than one year, returns shall be submitted monthly.

10. It will be entirely the responsibility of the Contractor/his Supervisor/representative to ensure strict adherence to all HSE measures and statutory rules during operation in Company's installations and safety of workers engaged by him. The crew members will not refuse to follow any instruction given by company's Installation Manager / Safety Officer / Engineer-in-charge / Official / Supervisor/Junior Engineer-in-charge for safe operation.

11. Any compensation arising out of the job carried out by the Contractor whether related to pollution, Safety or Health will be paid by the Contractor only.

12. Any compensation arising due to accident of the Contractor's personnel while carrying out the job, will be payable by the Contractor.

13. The Contractor shall have to report all incidents including near miss to Installation Manager / departmental representative of the concerned department of Company.

14. The Contractor has to keep a register of the persons employed by him/her. The Contractor's supervisor shall take and maintain attendance of his men every day for the work, punctually.

15. If the Company arranges any safety class / training for the working personnel at site (company employee, Contractor worker, etc) the Contractor will not have any objection to any such training.

16. The health checkup of Contractor's personnel is to be done by the Contractor in authorized Health Centers as per Company's requirement & proof of such test(s) is to be submitted to Company. The frequency of periodic medical examinations should be every five years for the employees below 45 years of age and every three years for employees of 45 years of age and above.

17. To arrange daily tool box meeting and regular site safety meetings and maintain records.

18. Records of daily attendance, accident report etc. are to be maintained in Form B, E, J (as per Mines Rules 1955) by the Contractor.

19. A Contractor employee must, while at work, take reasonable care for the health and safety of people who are at the employee's place of work and who may be affected by the employee's act or omissions at work.

20.A Contractor employee must, while at work, cooperate with his or her employer or other persons so far as is necessary to enable compliance with any requirement under the act or the regulations that is imposed in the interest of health, safety and welfare of the employee or any other person.

21. Contractor's arrangements for health and safety management shall be consistent with those for the mine owner.

22. In case Contractor is found non-compliant of HSE laws as required company will have the right for directing the Contractor to take action to comply with the requirements, and for further non-compliance, the Contractor will be penalized prevailing relevant Acts/Rules/Regulations.

23. When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures Company will have the right to direct the Contractor to cease work until the non-compliance is corrected.

24. The Contractor should prevent the frequent change of his contractual employees as far as practicable.

25. The Contractor should frame a mutually agreed bridging document between Company & the Contractor with roles and responsibilities clearly defined.

26. For any HSE matters not specified in the contract document, the Contractor will abide the relevant and prevailing Acts/rules/regulations/ pertaining to Health, Safety and Environment.

OIL INDIA LIMITED
(A Govt of India Enterprise)
NEF Project, Duliajan

WORKS CONTRACT

Schedule of Company's Plants, Materials and Equipments (SCPME)

Tender No.: D205930P15

INTERIOR DECORATION OF NEW OFFICE ROOMS AT FIRST FLOOR OF NEF PROJECT AT DULIAJAN

NIL

OIL INDIA LIMITED
(A Govt of India Enterprise)
NEF Project, Duliajan

SUB: SAFETY MEASURES

Tender No.: D205930P15

INTERIOR DECORATION OF NEW OFFICE ROOMS AT FIRST FLOOR OF NEF PROJECT AT DULIAJAN

Sir,

We hereby confirm that we have fully understood the safety measures to be adopted during execution of the above contract and that the same have been explained to us by the concerned authorities. We also give the following assurances.

a) Only experienced and competent persons shall be engaged by us for carrying out work under the said contract.

b) The names of the authorized persons who would be supervising the jobs on day to day basis from our end are the following

i) _____

ii) _____

iii) _____

The above personnel are fully familiar with the nature of jobs assigned and safety precautions required.

c) Due notice would be given for any change of personnel under item (b) above.

d) We hereby accept the responsibility for the safety of all the personnel engaged by us and for the safety of the Company's personnel and property involved during the course of our working under this contract. We would ensure that all the provisions under the Oil Mines Regulations, 1984 and other safety rules related to execution of our work would be strictly followed by our personnel. Any violation pointed out by the Company's Engineers would be rectified forthwith or the work suspended till such time the rectification is completed by us and all expenditure towards this would be on our account.

e) We confirm that all persons engaged by us would be provided with the necessary Safety Gears at our cost.

f) All losses caused due to inadequate safety measures or lack of supervision on our part would be fully compensated by us and the Company will not be responsible for any lapses on our part in this regard.

(Seal)

Yours Faithfully

Date_____

M/s_____
CONTRACTOR
FOR & ON BEHALF OF