



INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR
KHARAGPUR, WEST BENGAL 721302

TENDER DOCUMENT

for

Electrical renovation and modification works in REKHI Centre of
Excellence at New Academic area, IIT Kharagpur.

NIT No. IIT/E/E&M/T/83/2018-19

Notice Invitation Tender Serial No. IIT/E/E&M/T/83/2018-19 dated- 28.01.2019

Tender Serial No. _____ Issued to:

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.....
.....



Contents

1. NOTICE INVITING TENDER	2
1.1. INTRODUCTION	2
1.2. PARTICULARS	2
1.3. ELIGIBILITY CRITERIA.....	2
2. INFORMATION TO BIDDERS	4
2.1. SCOPE OF WORK.....	4
2.2. GENERAL INSTRUCTIONS.....	4
2.3. SUBMISSION OF TENDER.....	5
2.4. EVALUATION OF BIDS AND AWARD OF WORK	5
3. UNDERTAKING BY THE BIDDER	8
4. Schedule of Quantities	09-11
5. Make List Format	12
6. Special Condition for Electrical work	13-14



1. NOTICE INVITING TENDER**1.1. INTRODUCTION**

Indian Institute of Technology (IIT) Kharagpur, hereinafter called IITKGP, invites sealed tenders from the eligible contractors for **Electrical renovation and modification works in REKHI Centre of Excellence at New Academic area, IIT Kharagpur.** Particulars of the project are as following.

1.2. PARTICULARS

1.NIT Number	NIT No. IIT/E/E&M/T/83/2018-19
2.Name of Work	Electrical renovation and modification works in REKHI Centre of Excellence at New Academic area, IIT Kharagpur.
3.Location of Work	REKHI Centre of Excellence at New Academic area, IIT Kharagpur.
4.Estimated Cost(including GST)	₹ 147600/- (Rupees One Lakhs Forty Seven Thousand only)
5.Earnest Money Deposit	₹ 2950 /- (Rupees Two Thousand and Nine Hundred Fifty Only)
6.Time Limit	30 days.
7.Tender Fee	Nil
8.Tender Basis and Mode	Single Stage Bidding (Containing Technical Bid & Financial Bid)
9.Mode of Payment to IITKGP (EMD/Tender fee)	Demand Draft / Pay order in favour of IIT Kharagpur payable at Kharagpur.
10.Closing Date & Time for Receipt of bids	13 th Feb 2019 up to 15:30hrs
11.Date& Time for Opening of Bid	13 th Feb 2019 at 16:30hrs
12. Engineer-in-charge and contact details.	Mr. Sabyasachi Ghosh Senior Executive Engineer Tel: 03222-282522_____, Email: sghosh@hijli.iitkgp.ernet.in
13. Address for tender issue, submission and opening	Office of Senior Executive Engineer (Electrical), 1 st Floor, Old Building, IIT Kharagpur, Kharagpur WB 721302
14.Website for full and updated information	https://eprocure.gov.in/cppp/tendersearch; http://www1.iitkgp.ac.in/topfiles/tenders.php

1.3. ELIGIBILITY CRITERIA

- 1.3.1. The bidder must be registered in appropriate class of works with Government organization like CPWD/ PWD/ MES or PSUs or those having experience in similar nature of works awarded by Government / Semi Government Organizations/ Government Funded Autonomous Organization.
- 1.3.2. The bidder must have done at least 1 (ONE) similar work of value of 80% of the estimated cost **or** 2 (TWO) similar works for projects each of value 60% of the estimated cost **or** 3 (THREE) similar work



for projects each of value 40% of the estimated cost with Government/ Semi-government/ PSU/ Government Funded Autonomous Organization during last **7 (seven) years** preceding last date of the month of tender submission.

Note:

- (i) The estimated cost is Rs. 147600/- (Rupees One Lakhs Forty Seven Thousand only)
- (ii) The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to the last date of receipt of applications for tender.
- (iii) **Similar works shall mean:** Electrical renovation and maintenance works.

1.3.3. Special condition for associate consultant:

This work includes an item in Part II of BoQ for detailed design and drawing work including structural and architectural, electrical, S&P. Bidders shall associate themselves with the consultant eligible for comprehensive consultancy work at least for 1 (one) similar project costing 80% of the estimated cost or 2 (two) similar projects for each value 60% of the estimated cost or 3 (three) similar projects each value 40% of the estimated cost.

The bidder has to submit document in support of eligibility of their associate consultant.

1.3.4. The bidder or the specialized agency the bidder intends to associate with must be registered with appropriate government authority as a bonafide business entity and must have GST registration certificate and Permanent Account Number of income tax.

1.3.5. Electrical work shall be executed by selected bidder through agency holding electrical license and electrical supervisor license valid on date of execution.

1.3.6. The validity of the registrations and licenses should be valid as on the date of tender submission.

1.3.7. Average annual turnover of the bidder as per ITCC or profit & loss statement shall not be less than 30% of the estimated cost, not having incurred loss in more than two years, during last 5 years ending 31 Mar 2018.

1.3.8. Bidder must hold solvency certificate from any scheduled banks for a minimum value of 40% of the estimated cost, issued not earlier than 6 (six) months from the last date of submission.

Sd/-

Sr. Executive Engineer (Electrical)

On behalf of the Director, Indian Institute of Technology Kharagpur

Copy to:

- 1) Registrar
- 2) Chief Engineer
- 3) Superintending Engineer (E&M)
- 4) Chief System Manager
- 5) Mr. M. Kumar, Senior Executive Engineer (EW)
- 6) Executive Engineer (Telephone)
- 7) Engineer/Assistant Engineer/ Junior Engineer (E&M)
- 8) Notice Board
- 9) Tender Notice uploaded to CPPP portal & Institute Website

Office file





2. INFORMATION TO BIDDERS

2.1. SCOPE OF WORK

- 2.1.1. The IITKGP intends to award the work of **Electrical renovation and modification works in REKHI Centre of Excellence at New Academic area, IIT Kharagpur**. The work consists of comprehensive repair, renovation and modification of existing electrical systems.
- 2.1.2. The vendor shall work out execution sequence and methodology so as to complete the project within the envisaged time and the estimated cost, duly handling the constraint mentioned above.

2.2. GENERAL INSTRUCTIONS

- 2.2.1. Bidding documents are to be obtained electronically through websites: <https://eprocure.gov.in/cppp/tendersearch>; <http://www1.iitkgp.ac.in/topfiles/tenders.php>. The tender fee in the prescribed mode must accompany the tender documents issued electronically at the time of submission.
- 2.2.2. This bid document shall be read in conjunction with GCC (General Conditions of Contract) available on <http://www1.iitkgp.ac.in/topfiles/tenders.php>.
- 2.2.3. The bidder shall visit and inspect the site and obtain all information on his own responsibility and at own cost, which may be necessary for the purpose of quoting and submitting the tender. No excuse or ignorance as to site conditions and local information shall be accepted after awarding of the contract. Access to the site will be granted by the Engineer-in-charge on all working days within working hours.
- 2.2.4. IITKGP shall not provide any space at site for labour hutments.
- 2.2.5. All clarifications about the tender shall be sought by bidder on or before **13th Feb 2019 1.00 PM** through e-mail to the Engineer-in-charge on sghosh@hijli.iitkgp.ernet.in.
- 2.2.6. Completion certificate issued by Competent Authority will only be considered as credential. If the Completion certificate issued by Competent Authority does not reflect the type of work, then Final bill / Schedule of Quantity of the qualifying works also to be attached along with the Completion certificates. Certificate from private individuals / organizations for whom such works have been executed shall not be accepted.
- 2.2.7. The bidding document (consisting of specifications, the schedule of quantities of various types of items to be executed, the set of terms and conditions of the contract and other documents / drawings, if any), Corrigenda, Clarifications to Pre-bid queries can be downloaded from the websites: <https://eprocure.gov.in/cppp/tendersearch>; <http://www1.iitkgp.ac.in/topfiles/tenders.php>. Corrigenda, if any shall be published only on these websites. The institute shall not be responsible for any delay / difficulties / inaccessibility of downloading facility for any reason whatsoever.
- 2.2.8. All costs, charges & expenses that may be incurred in connection with the preparation of his tender shall be borne by him and the Institute accepts no liability whatsoever therefore.
- 2.2.9. **Rates quoted by the bidders shall be inclusive of GST (Goods and Services Tax - Central, State and Interstate) and all applicable taxes. Income Tax and all other statutory deductions like labour cess etc. will be deducted from the bill as per prevailing rules.**
- 2.2.10. Exemption to IITKGP against any tax/ duty/ fee/ surcharge/ charge/ cost, if any, found applicable or sought later from IITKGP after award shall be passed on to IITKGP by the contractor without dispute.
- 2.2.11. IITKGP reserves the right to reject any or all of the bids without assigning any reason.
- 2.2.12. **Bid Validity:** Bid shall remain valid for 120 days from the date of submission.
- 2.2.13. **Firm Price: Bidder's quoted Rates/Prices for executing the activities under the Contract shall remain firm till completion of the entire work & shall not attract any escalation under any circumstances whatsoever.**
- 2.2.14. If any information furnished by the bidder is found as false / fabricated, then his bid will be rejected and treated as cancelled. Even if the such manipulation is detected at any stage after signing of the contract, it would lead to termination of the contract besides forfeiture of Earnest Money Deposit and liabilities towards prosecution. In such cases the bidder will be debarred from participation in future tendering process in IITKGP for next 05 (Five) years.



- 2.2.15. Earnest Money Deposit (EMD)** of requisite amount and that in prescribed mode or proof of payment thereof shall be enclosed with the Technical Bid explained in following section.
- 2.2.16. Refund / Conversion of Earnest Money Deposit:** The Earnest Money received shall be refunded to the unsuccessful bidders without any interest after the opening of financial bids. The Earnest Money Deposit of successful bidder shall be retained and converted into part of Security Deposit.
- 2.2.17. Forfeiture of Earnest Money Deposit:** Earnest Money Deposit will be forfeited in any of the following cases:
- The bidder withdraws / modifies his tender during the period of Bid Validity.
 - The bidder, in case of tie between lowest bids, refuse to submit revised offer.
 - The bidder does not accept the correction of arithmetical errors of his tender.
 - The bidder fails to deposit Performance Guarantee and information as per format given in GCC within the stipulated time period before award of the work.

2.3. SUBMISSION OF TENDER

- 2.3.1.** The sealed tenders shall be received at the Office of Senior Executive Engineer (Electrical), 1st Floor, Old Building, IIT Kharagpur, Kharagpur WB 721302, up to **15:30hrs, 13th Feb 2019** or Corrigenda otherwise.
- 2.3.2.** Tenders received after the due date and time shall not be considered.
- 2.3.3.** Tenders shall be submitted in a sealed Master envelope super scribed **“Electrical renovation and modification works in REKHI Centre of Excellence at New Academic area, IIT Kharagpur..”** with NIT No. **IIT/E/E&M/T/83/2018-19 as NIT No.**, containing three separate sealed covers, each clearly super scribed as **“Tender Fee and EMD”, “Technical Bid”** and **“Financial Bid”** respectively, in the following manner:
- 2.3.4. Envelope-1 (Tender FEE & EMD)** will consist of:
- Earnest Money Deposit** of requisite amount, in the prescribed mode or proof of payment thereof.
- 2.3.5.** Tender without payment of Earnest Money Deposit would be summarily rejected.
- 2.3.6. Envelope-2 (Technical Bid)** will consist of:
- Covering letter of the offer signed by firm’s authorized signatory.
 - Documents establishing the identity and authenticity of the bidder/ bidding firm
 - Self-certified copies of all the documents in support of eligibility of bidder.
 - Self-certified copies of all the documents in support of eligibility of proposed/associated agencies for specialized services.
- 2.3.7. Envelope-2 (Financial Bid)** will consist of the complete tender document, each page duly signed and stamped by the bidder as acceptance of the conditions, Declaration by Bidder and **Financial Bid** all duly filled-in, signed by the bidder or his/her authorized signatory and stamped.

2.4. EVALUATION OF BIDS AND AWARD OF WORK

- 2.4.1.** The Bid of bidder will be opened on the specified date and time of opening at the Office of Senior Executive Engineer (Electrical), 1st Floor, Old Building, IIT Kharagpur, Kharagpur WB 721302 in the presence of willing bidders or their authorized representatives.
- 2.4.2.** Bids shall, first, be checked for payment of **Tender Fee** and **Earnest Money Deposit**. Only those bids found to have duly paid/ submitted Tender Fee and Earnest Money Deposit shall be considered for evaluation.
- 2.4.3.** Evaluation of **Technical Bid:** The bids received will then be assessed on the eligibility criteria mentioned at para 1.3 of Notice Inviting Tender. Bids found not meeting the eligibility criteria shall be considered non-responsive and shall be rejected summarily.
- 2.4.4.** IITKGP retains the right to revert back to individual bidders with further clarifications / queries on the Technical Bid. The bidder has to respond to the queries within the specified time mentioned in the covering letter.
- 2.4.5.** On the date & time specified for opening of Financial Bid or the Revised Financial Bids as the case may be will be opened on specified date and time.

- 2.4.6. **EVALUATION OF Financial Bids:** The Financial Bid should contain the complete bid document with duly filled in Schedule of Financial Quote. Financial Bids opened as above will be checked for arithmetical errors.
- 2.4.7. The successful bidder shall be issued Letter of Acceptance (LOA) of the bid, and be required to furnish a Performance Guarantee as per General Conditions of Contract, Program Schedule with specific Milestones to be achieved as to complete the work within the stipulated time limit and details of his Technical Staff to be deployed as per ANNEXURE-I
- 2.4.8. **Letter of Award (Work Order)** shall be issued to the successful bidder only after receipt of the Performance Guarantee, along with Program Schedule and the details of Technical Staff to be deployed for the work.
- 2.4.9. **Agreement (Contract)** consisting of complete tender document including conditions, bill of quantities, technical proposal and specialized services, drawings, if any, and acceptance thereof together with any correspondence leading thereto, shall be drawn and signed with the awardee **within 10 days** of the Letter of Award.
- 2.4.10. **Date of start** of work shall be reckoned from **the 7th day** of the issue of the Work Order.
- 2.4.11. **Defect Liability Period (DLP):** In partial modification to clause no.16 of General Conditions of Contract (GCC), the Defect Liability Period shall be 12 months after the certificate final or otherwise of its completion of work or till the final bill has been prepared.



3. UNDERTAKING BY THE BIDDER**UNDERTAKING**

I / We have read and examined the Tender document including terms & conditions, specifications, bill of quantities, drawings and designs, general rules & directions, General Conditions of Contract, Special Conditions of Contract and all relevant other documents, publications and rules referred to in the Conditions of Contract and all other contents in the tender documents for the work.

I / We, hereby tender for execution of the work specified for the Indian Institute of Technology Kharagpur within the time specified and in accordance in all respects with the specifications, designs, drawings and instructions in writing.

We agree to keep the tender open for 120 days from the last date of its submission and not to make any modifications in its terms and conditions. A sum of Rs. _____ has been deposited in cash / demand draft of a scheduled bank / Pay order as earnest money. If I / we, fail to furnish the prescribed performance guarantee within prescribed period, I / we agree that the said Director, Indian Institute of Technology Kharagpur or his authorized officer shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I / we fail to commence work as specified, I / we agree that the Director, Indian Institute of Technology Kharagpur shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein.

Further, I / We agree that in case of forfeiture of earnest money or both Earnest Money & Performance Guarantee as aforesaid, I / We shall be debarred for participation in the re-tendering process of the work.

I / We hereby declare that I / We shall treat the tender documents, drawings and other records connected with the work as secret / confidential documents and shall not communicate information derived there-from to any person other than a person to whom I / We am / are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Seal & Signature of Contractor

Postal Address

Dated

Witness

Address

Occupation



ANNEXURE-I

TECHNICAL STAFF OF CONTRACTOR

DISCIPLINE	NAME	QUALIFICATION	EXPERIENCE	CONTACT NUMBER
Overall Project In-charge				
Engineer - Structure and Civil Works				
Engineer – Electrical & Mechanical Works				
In-charge - Safety, Health & Environment				

Seal & Signature of Contractor

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR



भारतीय प्रौद्योगिकी संस्थान खड़गपुर

4. SCHEDULE OF QUANTITIES

Name of the Work: Electrical renovation and modification works in REKHI Centre of Excellence at New Academic area, IIT Kharagpur.

Sl. No	Item Name	Unit	Qty	Rate	Amount
1	Wiring for circuit / sub main wiring along with earth wire the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required . Make: Finolux,Havells, Gloster,polycab,KEI , equivalent approved by EIC.				
	i) 2 x 1.5 sqmm + 1 x 1.5 sqmm earth wire	Mtr	180		
	ii) 2 x 2.5 sqmm + 1 x 2.5 sqmm earth wire	Mtr	400		
2	S/F of 6 A to 32 A rating, 240/415 volts "C" cuve, 10KA, MCB of following poles in the existing MCB DB complete with connections, testing , commissioning etc as required. Make: Legrand/L&T/ Havels/Schneider/ equivalent approved by EIC.				
	i) SP MCB (6A-32A)	No	24		
	ii) 4P MCB (6A-32A)	No	1		
3	S/F of 40 A to 63 A rating, 240/415 volts "C" cuve, 10KA, MCB of following poles in the existing MCB DB complete with connections, testing , commissioning etc as required. Make: Legrand/ L&T/Havels/schneider/ equivalent approved by EIC.				
	i) DP MCB(40A-63A).	No	1		
	ii) 4P MCB (40A-63A)	No	1		
4	S/F of following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, IP43, on surface/recess, complete with tinned copper bus bar, neutral bus bar,earth bar, din bar interconnection, powder painted including earthing and mending good to the damaged to original finish where conceal work to be done etc as required .(But without MCB/RCCB/Isolator) . Make: legrand/L&T/Havells/Schneider equivalent approved by EIC.				
	i)12 way, SPN double door DB.	No	1		
5	Wiring for light point / fan point/ exhaust fan / call bell point with 2 x 1.5 sqmm copper conductor of 1.1KV grade house wiring FRLS cable through medium class PVC conduit /good quality 1 x 1.5 sqmm ECC flexible conduit / 25 mm width PVC casing capping with all accessories as per drawing with modular type switches fixed on good quality metal board / PVC board as required with necessary connection including good to the damaged to original finishing where conceal work to be done. Note: Casing capping : Precession/ Presto- plus(MMS). Copper conductor:-Havells/Finolux/Gloster/ POLYCAB - FRLS only.PVC conduit:- Kallinga/Precision (MMS)/Pres plus. Switch /Socket:- Legrand/L&T/ Crabtree/Havells or Equivalent. (Group- A, 7.88Mtrs long per point).	Mtr	15		

6	S/F of IP 43 with metal door,ETPN DB , sheet steel, double door, with provision for FP MCB / Isolator/RCCB/RCBO as incomer and SP MCBs as outgoing distribution board, 415 volts, on surface / recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar interconnection, powder painted including earthing and mending good to the damaged to original finish where conceal work to be done etc as required of the following types , (But without MCB/RCCB/Isolator/RCBO). Make: legrand/L&T/Havells/Schneider/equivalent approved by EIC.				
	i) 6 way (8+18) ETPN double door DB.	No	1		
7	S/F of modular type PVC box on surface /wall/lab table or equivalent surface complete connection, testing, commissioning etc for the following modules, as required. Make: Crabtree/Legrand/Havells/L&T/Equivalentapproved by EIC				
	i) 1 or 2 module (75mm x 75mm),	No	3		
	ii) 3 module(100mm x 75mm),	No	5		
	iv) 6 module(200mm x 75mm),	No	40		
	vi) 12 module(200mm x 150mm),	No	3		
8	S/F of following modular type PVC front plate/ cover plate on existing modular metal boxes/modular PVC boxes ect as required. Make : Crabtree/ legrand/Havells/L&T/ or equivalent approved by EIC.				
	i) 1 or 2 module (75mm x 75mm)	No	3		
	ii) 3 module(100mm x 75mm)	No	5		
	iv) 6 module(200mm x 75mm)	No	40		
	vi) 12 module(200mm x 150mm)	No	3		
9	S/F of following modular switch /socket on the existing modular plate & switch box including connections but excluding modular plate ect as required. Make : Crabtree/ legrand(myrius)/MK(wraparound)/L&T or equivalent approved by EIC.				
	i) 6/10A switch without indication.	No	10		
	ii) 16 A Switch with indication.	No	40		
	iii) 5 pin, 6 A Shuttered socket.	No	5		
	iv)6/16 A, 3 pin combined Shuttered socket.	No	40		
10	Surface/ Reces mounted downlight with polycarbonate housing, 240V, CRI : - > 80, power factor :- > 0.90, Lumen :- 900, CCT :- 5700K, ACKC :- Efficacy, Lumen/watt :- > 100 . Make- Havells/Legrand/ L&T/ Schneider/Equivalent approved byEIC.	No	12		
11	LED TUBELIGHT (Single Side Connection) is to be retrofitted in place of T8 Tube light, ultra bright LED polycarbonate Tubelight with <10% THD with very high efficiency suited for installation in existing T8 tubelight with G13 lamp holders to give glare free light. Technical specification :- CRI >= 80, PF >= 0.95, Lumen :- 2000, Colour Temp., CCT + 6500K, Efficacy (Lm/watt) > 110. Make - Havells/ Legrand/L&T/Schneider/Equivalent approved byEIC.	No	20		

12	Wall/ Recess mounted CYLINDRO LED Downlights, with the high power LED, CYLINDRO offers various lumenous intensity levels from 1500 - 2500 Lumens which is the perfect alternate to conventional HID lamps. Suitable for 3 circuit 4 wire universal tracks. (Black colour available on request). Technical Specification :- Beam angle : 38 degree, CRI >= 80, PF >= 0.95, Lumen : 1575, CCT = 4000K, Efficacy (Lumen/watt) : > = 105. Make- Havells/Legrand/ L&T/ Schneider/Equivalent approved byEIC.	No	2		
13	Dismantling of old wiring / Main switches / existing light fittings / wall fans / ceiling fans and exhaust fans etc and shifting to site store including mending good damages to original finish.	Complete work	1		
14	Only fixing of light fittings (Tube,sodium, PL) on wall / ceiling or as desired on round wooden block and connection complete after assembling and testing, providing 3 x 1.5 sqmm pvc insulated copper wire. This includes disconnection and dismantling the old items and depositing them to store. Note: a) Dept. will supply only the fans and down rod. b) All hard wares as required are to be supplied by the contractor.	No	5		
			Total (RS.)		

Total amount in words **inclusive GST** (Please mention applicable GST %):

N.B:1) All materials to be used after prior approval of Engineer in charge.

2) Suitable connectors are to be used for making connections of the neutral and earth wire in the switch boards.

3) No electrical wiring are allowed to lay on the false ceiling.

4) No joints are allowed in the wiring.

5) suitable Al or Cu lugs are to be used during any connection, connection without using lugs are not allowed.

6)suitable brass glanding of the cables are to be done for cable end termination .

7)GI anti rust screws are to be used during fixing of pipes, cables, conduites, light fittings etc on the wall.

8) valid challans and test/guarantee certificates of all the materials supplied by the contractor are to be submitted before execution of work.

Make list format

Name of the Work: Electrical renovation and modification works in REKHI Centre of Excellence at New Academic area, IIT Kharagpur.

Sl. No.	Description of items	Approved makes proposed by the contractor	Makes approved by the Department
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Signature of E (EW)

Signature of Sr.E.E.(EW)

Signature of S.E (E&M)





Special Condition for Electrical work

1. The work shall be carried out as per national code or C. P. W. D specifications for works with correction slips issued up-to date unless otherwise specified in the schedule of quantities for the works.
2. The following Indian Standard Specifications and Codes of Practice will apply to the equipment and the work covered by the scope of this contract. In addition the relevant clauses of the Indian Electricity Act 1910 and Indian Electricity Rules 1956 as amended upto date shall also apply. Wherever appropriate Indian Standards are not available, relevant British and/or IEC Standards shall be applicable.

BIS certified equipment shall be used as a part of the Contract in line with Government regulations. Necessary test certificates in support of the certification shall be submitted prior to supply of the equipment.

It is to be noted that updated and current Standards shall be applicable irrespective of those listed below.

Low voltage Switchgear and Controlgear specifications IS 13947 : 1993

Part I – General

Part 2 – Circuit Breakers

Part 3 – Switch Fuse Units

Part 4 – Contactors and Motor Starters

Part 5 – Control Circuit Devices

Electrical Relays for power system protection IS 3231 : 1986

Low voltage Switchgear and Control gear assemblies IS 8623 : 1993

Marking of Switchgear busbars IS 11353 : 1985

Degree of Protection of Enclosures for low voltage switchgear IS 2147 : 1962

Code of Practice for selection, installation and maintenance of Switchgear IS 10118 : 1982

4. No under-ground work or above the false ceiling shall be covered until the same has got approved by the Engineer-in-charge. The contractor will supply the drawings of specific works for approval, if required
5. All the old wiring has to be dismantled with proper care. The reusable old materials if any are to be handed over to departmental store with proper documentation and the other non reusable (nil reselling value) will be disposed by the contractor. The contractor shall clear the site thoroughly of all scaffolding materials & rubbish etc. left out of his work & dress the site around the building to the satisfactions & his decision in writing shall be final & binding on all concerned
6. Special care to be taken to avoid any theft of electrical fittings and fixtures while executing the work.
7. The location of Panel / DB / Switch board / Light point / Fan point will be as per existing location or as per the instruction of Engineer-in-charge.
8. All the wiring will be done with feruling and cable / Wire termination by required size or lugs of required materials and It should be noted that license wire man shall only be allowed for the wiring work.

Electrical safety at work site

The contractor will identify one of the supervisors for taking care of implementation of Safety systems.

The Contractor should follow the following General Guidelines governing the safety rules as laid down under:

Usage of eye protection equipment shall be ensured when workmen are engaged for grinding, chipping, welding and gas-cutting. For other jobs as and when site safety co-coordinator insists eye protection has to be provided.

1. All safety appliances like Safety shoes, Safety gloves, Safety helmet, Safety belt, Safety goggles etc. shall be arranged before starting the job.
2. All excavated pits shall be barricaded & barricading to be maintained till the backfilling is done. Safe approach to be ensured into every excavation.
3. All the dangerous moving parts of the portable / fixed machinery being used shall be adequately guarded.
4. Ladders being used at site shall be adequately secured at bottom and top. Ladders shall not be used as work platforms.
5. Material shall not be thrown from the height. If required, the area shall be barricaded and one person shall be posted outside the barricading for preventing the tre-passers from entering the area.
6. Other than electricians no one is allowed to carry out electrical connections, repairs on electrical equipment or other jobs related thereto.
7. All electrical connections shall be made using 3 or 5 core cables, having a earth wire.
8. Inserting of bare wires for tapping the power from electrical sockets is completely prohibited.
9. A tools and tackles inspection register must be maintained and updated regularly.
10. Debris, scrap and other materials to be cleared from time to time from the workplace and at the time of closing of work every day.
11. All the unsafe conditions, unsafe acts identified by contractors, reported by site supervisors and / or safety personnel to be corrected on priority basis.
12. No children shall be allowed to enter the workplace.
13. All the lifting tools and tackles shall be stored properly when not in use.
14. Clamps shall be used on Return cables to ensure proper earthing for welding works.
15. All the pressure gauges used in gas cutting apparatus shall be in good working condition.
16. Proper eye washing facilities shall be made in areas where chemicals are handled.
17. Connectors and hose clamps are used for making welding hose connections.
18. All underground cables for supplying construction power shall be routed using conduit pipes.
19. Spill trays shall be used to contain the oil spills while transferring / storing them.
20. Tapping of power by cutting electric cables in between must be avoided. Proper junction boxes must be used.
21. Non-compliance to above shall invite a penalty recovery as per 3.22.8.

