

**HEAVY ENGINEERING CORPORATION LIMITED****PROJECT DIVISION****PURCHASE DEPARTMENT****Open Tender**

Tender Enquiry No. : HEC/PROJ/PUR/BLOCK B/14

Date: 31.08.2021

Dear Sir,

We request you to submit your most competitive offer for the following items as per the given schedule.

**ENQUIRY SCHEDULE**

| SI No. | Description  | Unit of Measure | Qty | Remarks   |
|--------|--|-----------------|-----|---|
| 1.     | Design, engineering, manufacture, assembly, shop testing, inspection, painting, supply at site of <b>100 KVA, 6.6KV/230V (L-L) OIL IMMERSSED LIGHTING TRANSFORMER</b> for Coal Handling Plant, Block B Project, Northern Coalfields Limited. | No              | 2   | Specification shall be exactly in line with Enclosure-II (Technical specification ) |

**Schedule of tender receipt of Offer: : As mentioned in CPP Portal****Schedule of tender opening of****Techno-commercial bid: : As mentioned in CPP Portal .....****Price Bid opening date : Will be intimated later through E-tender Portal only.**

Tender is available on our website in e-procurement section i.e. <https://etenders.gov.in/e procure/app> . Approved Bidders may go through the tender document. Bidders are required to upload the bid along with all supporting documents including priced part (BOQ) only on the e-tendering website (<https://etenders.gov.in/e procure/app>), on or before the due date and time for submission of bid.

**EMD/Tender fee to be submitted and sealed in separate envelop superscribed Tender No. & Due date of offer submission.**

Thanking you,

(Pradip Kumar)  
Sr. Manager/Purchase/PROJECT DIVISION  
Heavy Engineering Corporation Limited HMBP ADM. BUILDING  
(ANNEXE) DHURWA, RANCHI 834004  
Ph.06512401266/240056 Fax. : 0651 – 2401533  
E-mail: [projectpurchase@hecltd.com](mailto:projectpurchase@hecltd.com)



**INSTRUCTIONS TO TENDERER (ITT)**

**All bidders are requested to go through the all parts of Tender Document very carefully in detail before submitting the offer.**

**1.0 Offer has to be submitted only online at E-tender Portal: [www.etenders.gov.in](http://www.etenders.gov.in). Offers submitted in Hard copy shall not be considered, however tender Cost, Earnest Money Deposit (Original Demand Draft/bank Guarantee) may be submitted to us in hard copy. Scan copy of tender Cost & EMD to be uploaded in part-1 of offer i.e technocommercial bid.**

**2.0** Prospective Tenderers are advised to get register themselves only on at NIC e-tender portal i.e. <https://etenders.gov.in/eprocure/app>, obtain 'User ID' & 'Password' and go through the 'Self Help files' available in the Home Page after log in to the portal <http://etenders.gov.in>. They should also obtain Class III Digital Signature Certificate (DSC) in parallel which is essentially required for submission of their application. Detailed instructions for online bid submission are attached in **annexure-3**. No registration fee would be charged from the bidders.

**NOTE:**

- i. Please note that there is no provision to take out the list of parties downloading the tender document from the above referred web site. As such, tenderers are requested to see the website once again before due date of tender opening to ensure that they have not missed any corrigendum uploaded against the said tender after downloading the tender document. The responsibility of downloading the related corrigenda, if any, will be that of the downloading parties.
- ii. No separate intimation in respect of corrigendum to this NIT( if any ) will be sent to tenderers who have down loaded the documents from website. Please see website i.e., <http://www.hecltd.com> or <http://www.etenders.gov.in>
- iii. HEC reserves the right to extend / change the schedule of any activity by intimating the bidders through a notification on the e-tender portal only.

The Following two covers shall be submitted through online CPP - portal by the bidders. Last date and time of submission of bids (cover I, II) is as per given dates. **No other modes of bid submission is acceptable.**

Cover – I: - Containing techno-commercial bid and Technical Specification ( As per ITT, Enclosure-I (Commercial terms & Conditions) and Enclosure-II (Technical Specification ))

Scan copy of documents to be uploaded required as per Annex- 1 – Proof of Tender Fee submission document (DD/BG/NEFT/RTGS), SSI/NSIC/MSME certificate (for exemption of tender fee) and other relevant documentary evidence (PO copy, performance certificate etc.)

**3.0 Cover - II: Price Bid (BoQ)**

The tenderer shall upload the digitally signed Schedule of price bid in the form of BOQ.xls *Bidders may please note, the schedule of quantities is attached in the portal. The same (BOQ) shall be downloaded and be filled in the editable (un protected) cells only and they should necessarily submit their financial bids in the format provided after entering the financial quotes, name of the bidder etc.*

**4.0 Bid Opening Process is as below:-**

Cover-I: Technical bid opening date will be as per given dates. If any clarification is needed from the bidder about the deficiency in his uploaded documents in Cover-I, the bidder will be asked to provide it through Short fall documents folder in e-tendering portal. The bidder shall upload the requisite clarification / documents within time specified by HEC, failing which tender will be liable for rejection. Cover-II: The financial bids of the contractors / firms



# HEAVY ENGINEERING CORPORATION LIMITED

## PROJECT DIVISION

found to be meeting the qualifying requirements and technical criteria shall be intimated through portal. (Depending on Cover-I evaluation any changes in the date shall be intimated through e-tendering portal).

**5.0 Earnest Money Deposit** – The offers submitted shall be considered valid only when scan copy of EMD document .The scan copy of EMD document in form of DD/BG/Receipt of NEFT/RTGS have to be uploaded with the Techno- Commercial bid (Part 1) only. Exemption of EMD shall be applicable on submission of valid SSI/NSIC/MSME certificate and as per prevailing govt guidelines. SSI/NSIC/MSME Certificate to be uploaded in Techno Commercial Part 1 . EMD detail as per the details mentioned below

- a. The Bidder shall submit EMD of **Rs. 5,000/-** in the form of Bank Guarantee (in prescribed enclosed proforma at *annexure-4*) / Bank Draft in favour of Heavy Engineering Corporation Limited, Ranchi from a Nationalised Bank / Scheduled Indian Bank.
- b. The validity of the Bank Guarantee shall be for a period of 120 days beyond the validity of the Bid.
- c. Tenders not accompanied with EMD shall be liable for rejection

**The original EMD in form of DD/BG/Receipt of NEFT/RTGS should be reached us through courier or in person before the opening date of tender in following address**

To , I/C /Purchase  
PROJECT DIVISION  
HMBP ADM. BUILDING (ANNEXE)  
DHURWA, RANCHI- 834004  
Fax. No. 0651-24015  
Ph. No. 0651-2401266 / 2400562

**Refund of EMD:** The Earnest Money will be retained in the case of successful tenderer. The Earnest Money deposited by the successful bidder will be refunded on receipt of required Security Deposit from the bidder. EMD of the unsuccessful tenderers shall be refunded immediately after finalization of the tender. EMD shall be forfeited if any tenderer withdraw their offer before finalization of the tender.

**6.0 Tender Fee of Rs. 200/-** in the form of Demand Draft in favour of Heavy Engineering Corporation Ltd., payable at Ranchi

- a) Tenders not accompanied with Tender Fee shall be liable for rejection.

Exemption of Tender Fee shall be applicable on submission of valid SSI/NSIC/MSME certificate and as per prevailing govt guidelines. SSI/NSIC/MSME Certificate to be uploaded in Techno Commercial Part 1.

**Note:**

**The tender fee and EMD exemption is applicable to MSMEs subject to conditions given below:**

- i. MSMEs participating in the tender must submit valid & authorised copy of certificate of registration with any one of the above agencies. In case of bidders submitting DIC registration certificate shall attach original notarised copy of the DIC certificate. The MSME's Bidder to note and ensure that nature of services and goods/items manufactured mentioned in MSME's certificate matches with the nature of the services and goods /items to be supplied as per Tender.
- ii. Traders / resellers / distributors / authorized agents will not be considered for availing benefits under Public Procurement policy 2012 for MSMEs as per MSME guidelines issued by MoMSME.
- iii. The registration certificate issued from any one of the above agencies must be valid as on Bid closing date of the tender. Bidder shall ensure validity of registration certificate in case



- bid closing date is extended.
- iv. The MSMEs who have applied for registration or renewal of registration with any of the above agencies / bodies, but have not obtained the valid certificate as on close date of the tender, are not eligible for exemption / preference.
  - v. Where any aggregator has been appointed by the Ministry of MSME, themselves quote on behalf of some MSE units, such offers will be considered as offer from MSE units and all such facilities would be extended to these aggregators also.

### 7.0 Examination of Terms & Conditions- Technical Evaluation

Any bidder seeking benefit/preference under MSME / Make in India or any other policy/scheme of the Government of India, which is currently in force MUST at the time of bidding itself enclose all relevant documents / certificates etc. for claiming such benefits. The bidder must also clearly highlight the provisions of the policy and the kind of benefit being sought by it for which it meets the conditions for claiming such benefits. It may be noted that no other benefit / preference / concessions which is beyond the scope of the policy or the bidder's entitlement under the policy shall be given / considered by us. If the bidder fails to claim such benefit and/or fail to submit necessary documents/certificates in support of its claim at the time of bidding itself, its claim shall not be entertained at a later stage in the bidding process and no opportunity shall be provided to it to submit any document / certificate.

### 7.1 Evaluation and comparison of bids

The bids shall be evaluated on the basis of final landed cost which shall be arrived as under and as per format given in BOQ of e-Tender:

#### For Goods manufactured within India

|      |   |
|------|---|
| i)   | The price of the goods quoted Ex-works  |
| ii)  | GST which will be payable on the goods if the contract is awarded.  |
| iii) | The charges for inland transportation, insurance and other local services required for delivering the goods at the desired destination as specified in the BOQ. |
| iv)  | The installation, commissioning and training charges including any incidental services, if any as given in Scope of Works of NIT                                |
| v)   | Deviation to NIT payment terms.   |

The comparison between the offers shall be made on FOR destination on Landed cost basis.

**Price preference to Local suppliers as per Make in India procurement policy of Govt. of India and Department for Promotion of Industry and Internal Trade (DPIIT) order No. P-45021/2/2017-PP (BE-II) dated 04th June, 2020**

#### A. Eligibility of 'Class-I local supplier', 'Class-II local supplier' and 'Non-local supplier'

- i. Only Class-I local suppliers are eligible to participate in tender if there is sufficient local capacity and local competition irrespective of the purchase value. L1 bidder amongst Class-I local suppliers shall be awarded contract subject meeting other requirements as per tender.
- ii. In procurement of all goods or services not covered above, with the estimated value of purchases less than Rs. 200 Crore, only 'Class-I local supplier' and 'Class-II local supplier', shall be eligible to bid.

#### B. Estimated value of procurement of tendered goods is below Rs. 200 Crore and it is not a Global Tender:

- i. **Tendered goods are not divisible in nature, the following procedure shall be followed to evaluate L1 and award of contract:**
  - a. Among all qualified bids, the lowest bid will be termed as L1. If L1 is from a Class-I local supplier, the contract will be awarded to L1.
  - b. If L1 is not from a Class-I local supplier, the lowest bidder among the Class-I local



# HEAVY ENGINEERING CORPORATION LIMITED

## PROJECT DIVISION

suppliers, will be invited to match the L1 price subject to local supplier's quoted price falling within the margin of purchase preference, and the contract shall be awarded to such local supplier subject to matching the L1 price.

- c. In case such lowest eligible Class-I local supplier fails to match the L1 price, the Class-I local supplier with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on and contract shall be awarded accordingly. In case none of the Class-I local suppliers within the margin of purchase preference matches the L1 price, then the contract may be awarded to the L1 bidder.

**For more clarity in this regard, following table is furnished:**

| Quantity of Tended goods | Price quoted by Local suppliers                 | Finalization of tender  |
|--------------------------|---|---|
| Cannot be Split          | L1 is Class-I local supplier                    | Full Order on Class-I Local supplier                              |
| Cannot be Split          | Not L1 but Class-I local supplier within L1+20% | Full Order on Class-I Local supplier subject to matching L1 price |

Definitions of terms applicable to this clause

'Local content ' means the amount of value added in India which shall be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent.

'Class-I Local supplier' means a supplier or service provider whose goods or services offered for procurement, has local content equal to or more than 50% .

'Class-II local supplier' means a supplier or service provider, whose goods or services offered for procurement, has local content equal to or more than 20% but less than 50%.

'Non-Local supplier' means a supplier or service provider, whose goods or services offered for procurement, has local content less than or equal to 20%.

'L1' means the lowest tender or lowest bid or the lowest quotation received in this tender, bidding process or other procurement solicitation as adjudged in the evaluation process as per the tender or other procurement solicitation .

'Margin of purchase preference' means the maximum extent to which the price quoted by a Class-I local supplier may be above the L1 for the purpose of purchase preference.

### **C. Verification of local content**

- i. The 'Class-I local supplier'/ 'Class-II local supplier' at the time of tender, bidding or solicitation shall be required to provide self certification that the item offered meets the minimum local content and shall give details of the location(s) at which the local value addition is made. **(Annexure-5)**
- ii. In cases of procurement for a value in excess of ₹ 10 crores, the local supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.
- iii. False declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Finance Rules along with such other actions as may be permissible under law.
- iv. A supplier who has been debarred by any procuring entity for violation of the order of the Department for Promotion of Industry and Internal Trade (DPIIT) order No. P-45021/2/2017- PP (BE-II) dated 04th June, 2020 shall not be eligible for preference under the said order for procurement by any other procuring entity for the duration of the debarment. The debarment for such other procuring entities shall take effect





prospectively from the date on which it comes to the notice of other procurement entities, in the manner prescribed in the order of the Department for Promotion of Industry and Internal Trade (DPIIT) order No. P- 45021/2/2017-PP (BE-II) dated 04th June, 2020.

**D. "Class-II local supplier" will NOT get purchase preference in any procurement.**

**8.0 PERIOD OF VALIDITY OF TENDER**

Unless otherwise specified, the Tenderer shall keep his tender valid initially for a period of 120 days from the due date of opening of the tender.

**9.0 LANGUAGE**

The Tender shall be submitted in English language.

**10.0 NO CLAIM OR COMPENSATION FOR SUBMISSION OF TENDER**

The Tenderer whose Tender is not accepted shall not be entitled to claim any costs, charges, expenses of and incidental to or incurred by him through or in connection with his submission of Tenders, even though HEC Ltd may decide to withdraw the Invitation of Tender.

**11.0 INCOME TAX / SALES TAX CLEARANCE CERTIFICATE / PAN**

The Tenderer shall furnish the Income Tax Clearance Certificate, Sales Tax Clearance Certificate and copy of PAN with the tender duly countersigned by the respective officer under the seal of the office. Failure to produce the requisite certificate with tender, their quotation is liable to be rejected.

**12.0 CONFIDENTIALITY**

Tenderer shall note that all data/drawings/specifications enclosed with Tender document is confidential. Tenderer shall keep all data/drawings in strict confidence and shall not copy or pass on any of the Tender papers etc. to any third party. Tenderer shall return the Tender documents alongwith the Tender.

**13.0 NOTICES ON BEHALF OF HEC LTD**

Notice and Certificate on behalf of HEC LTD in connection with the Purchase Order may be given by duly authorised officers of HEC LTD. Any modification which may become necessary in the interim period will be intimated to you as soon as possible.

**14.0 PURCHASER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS**

The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Purchaser's action.

**15.0 Tenderer to note that procurement shall be done on PACKAGE BASIS** i.e L-1 firm will be decided based on combined lowest landed value for all tendered items by adding individual quoted values for all respective items and purchase order will be awarded to overall L-1 firm on **Package basis** .In case there is deviation against NIT Payment term, loading as mentioned at note of clause 6.0 of commercial term will be applicable to arrive at L-1 firm.

**16.0 PRE QUALIFING CRITERIA**

Bidder shall submit three (03) nos of Purchase Order alongwith Performance/Completion certificate duly issued by their client towards supply of 100 KVA, 6.6KV/230V (L-L) Oil Immersed Lighting Transformer or above rating in last 5 years.

**16.0 General conditions of the contract :**

**Unless otherwise specified in the Terms & Conditions above, this order shall be governed by General conditions of contract of purchase of HEC Ltd, which is available in the web site of HEC.(www.hecltd.com):**

**Note:-**

- 1. As per the govt. Guidelines it is to be specified clearly in your offer whether your firm is registered with SSI/NSIC/MSME and also confirm whether the firm is owned by SC/ST Entrepreneurs or not.**
- 2. Pl. provide UAM no to avail Facilities of MSME.**
- 3. Please get registered your firm with HEC Ltd.**



# HEAVY ENGINEERING CORPORATION LIMITED

## PROJECT DIVISION

Annexure – 1

PART – I

(To be filled by the bidder and to be uploaded alongwith techno-commercial bid)

Quotation No.....

| SI No. | Requisite   |  | Remark |
|--------|---|--|--------|
| 1      | Submission of the offer with signed and stamped copy of annexure-A,B & C of commercial Terms & conditions. Also submit signed & stamped copy of <b>Enclosure-I of commercial terms &amp; conditions</b> and <b>Enclosure-II of Technical specification.</b>     | Upload the relevant documents  |        |
| 2      | All NIT Items must be quoted otherwise offer shall not be considered as procurement is on <b>Package Basis.</b>   | YES/NO   |        |
| 3      | Class of the bidder (Class-I / Class-II/ Non-Local supplier ) must be specified in line with procurement policy of Govt. of India and Department for Promotion of Industry and Internal Trade (DPIIT) order No. P-45021/2/2017-PP (BE-II) dated 04th June, 2020 | Class-I / Class-II/ Non-Local supplier                                 |        |
| 4      | Declaration of local content as per annexure -5 (Must be enclosed)  | Enclosed/ Not Enclosed.  |        |
| 5      | Whether SSI/NSIC/MSME and confirm whether the firm is owned by <b>SC/ST/WOMEN Entrepreneurs</b>   | Yes / No (In case yes, then upload certificate)                        |        |
| 6      | Tender fee (Rs 200/- ) / EMD (Rs. 5,000/-)  | Yes / No (In case yes, then upload scan copy of DD/BG/Online receipt ) |        |
| 7      | F.O.R. BLOCK B CHP, NCL Site<br>(As per clause 1 of Terms & condition)  | Yes / No   |        |
| 8      | Payment Term<br>(As per clause 6 of Terms & condition)  | Yes / No (In case your answer is No, then please mention your term)    |        |
| 9      | Delivery Term<br>(As per clause 5 of Terms & condition)   | Yes / No (In case your answer is No, then please mention your term)    |        |
| 10     | Validity<br>( one hundred and twenty (120) days from the due date of opening of the tender.)  | Yes / No   |        |
| 11     | L.D. Clause<br>(As per clause 9 of Terms & conditions)  | Yes / No   |        |
| 12     | Guarantee Clause<br>(As per clause 7 of Terms & conditions)   | Yes / No   |        |
| 13     | Performance Bank Guarantee<br>(As per clause 8 of Terms & conditions)   | Yes / No   |        |
| 14     | Security Deposit<br>(As per clause 8 of Terms & conditions)   | Yes / No   |        |
| 15     | GST   | Yes / No,<br>Applicable GST (%).....                                   |        |
| 16     | Inspection<br>(As per clause 4 of Terms & conditions)   | Yes / No   |        |
| 17     | Whether Terms & Condition/Note etc. mentioned in the tender enquiry is acceptable to the tenderer   | Yes / No   |        |
| 18     | GCC of HEC to be Accepted   | Yes / No   |        |

(Signature of Tenderer with seal)



**Annexure - 2  
PART-II (Price Bid)**

1. The tenderer shall upload the digitally signed Schedule of price bid in the form of BOQ.xls
2. Bidders may please note, the schedule of quantities is attached in the portal. The same (BOQ) shall be downloaded and to be filled in the editable (un protected) cells only and they should necessarily submit their financial bids in the format provided after entering the financial quotes, name of the bidder etc.
3. Bidders to note that the price as per the offer is strictly to be mentioned under Part-II of Price bid and not to be disclosed in any manner under techno-commercial bid Part-I ,In case price of the bidder is disclosed under techno-commercial bid Part-I , the offer of the firm will be summarily rejected.
4. If any item of BOQ is not quoted then offer of the firm **shall not be considered** as procurement is on **PACKAGE BASIS**.





**Annexure 3**  
**Instructions for Online Bid Submission**

*The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.*

*More information useful for submitting online bids on the CPP Portal may be obtained at: <https://eprocure.gov.in/eprocure/app>.*

**REGISTRATION**

- (i) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <https://etenders.gov.in/eprocure/app>) by clicking on the link "Online bidder Enrollment" on the CPP Portal which is free of charge.
- (ii) In case of any clarification please contact M/s NIC, before the schedule time of the submission of bid. Contact Person:- **Shri Kushal Kumar: 09852923855/ 7903884318**
- (iii) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- (iv) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- (v) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / eMudhra etc.), with their profile.
- (vi) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to *ensure that they do not lend their DSC's to others which may lead to misuse.*
- (vii) Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

**SEARCHING FOR TENDER DOCUMENTS**

- i) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.
- ii) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.



- iii) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

### PREPARATION OF BIDS

- i) Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- ii) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- iii) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
- iv) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Space” or “Other Important Documents” area available to them to upload such documents. These documents may be directly submitted from the “My Space” area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

**Note:** My Documents space is only a repository given to the Bidders to ease the uploading process. If Bidder has uploaded his Documents in My Documents space, this does not automatically ensure these Documents being part of Technical Bid.

### SUBMISSION OF BIDS

- i) Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- ii) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- iii) Bidder has to select the payment option as “offline” to pay the tender fee / EMD as applicable and enter details of the instrument.
- iv) Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by as specified in the tender documents. The details of the DD / any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
- v) Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BOQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the



BOQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.

- vi) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- vii) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- viii) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- ix) Upon the successful and timely submission of bids (i.e. after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- x) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

#### ASSISTANCE TO BIDDERS

Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.

Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 **CPP Portal** Helpdesk.

Note: For any query related to registration and processing on the Portal please visit FAQ available at <https://etenders.gov.in/eprocure/app?page=FAQFrontEnd&service=page>

You may call the Helpdesk. The 24 x 7 Help Desk Numbers are

0120-4200462, 0120-4001002, 0120-4001005, 0120-6277787

E-Mail: [support-eproc@nic.in](mailto:support-eproc@nic.in)

Or

You may call to our service provider, :06512400562,06512401266

E-Mail: : [projectpurchase@hecltd.com](mailto:projectpurchase@hecltd.com)



**Annexure 4**  
**BANK GUARANTEE PROFORMA FOR**  
**EARNEST MONEY DEPOSIT**

*(TO BE STAMPED IN ACCORDANCE WITH STAMP ACT)*  
*(TO BE ISSUED BY ANY NATIONALISED/SCHEDULED BANK*  
*AUTHORISED BY RBI TO ISSUE A BANK GUARANTEE)*

To:

Heavy Engineering Corporation Limited

Ranchi-834004

WHEREAS \_\_\_\_\_ [*name and address of Tenderer*] (hereinafter called "the Tenderer")

shall be submitting its Tender dated \_\_\_\_\_ [*date of the Tender*] for the work. [*name of the work*] (hereinafter called "the Tender").

KNOW ALL MEN by these present that we, \_\_\_\_\_ [*name of the bank*] of [*name of the country*] \_\_\_\_\_ having our registered office at [*address of the bank*] (hereinafter called "the bank"), are bound unto the Heavy Engineering Corporation Limited, P.O. Dhurwa, Dist. Ranchi (Jharkhand) (hereinafter called "the Purchaser") for the sum of [*amount of the Guarantee in words and figures*] for which payment well and truly to be made to the said Purchaser the Bank binds itself, his successors and assigns by these presents. SEALED with the Common Seal of the said bank this \_\_\_\_\_ day of 200\_.

THE CONDITION of this obligation are :

1. If the Tenderer withdraws its Tender during the period of Tender Validity specified by the Purchaser on the Tender form ; or
2. If the Tenderer withdraws having been notified of the acceptance of its Tender by the Purchaser during the period of Tender Validity :
  - (a) Fails or refuses to execute the Contract Agreement when required ; or
  - (b) Fails or refuses to furnish the Security-cum-Performance Guarantee Security (if any) in accordance with the Tender conditions.

We, \_\_\_\_\_ [*name of the bank*] undertake to pay to the Employer up to the above amount upon receipt of its first written demand, without the Employer having to substantiate its demand, provided that in its demand the Employer will note that the amount claimed by it is due to it owing the occurrence of 1 or both of the 2 (a) or (b) specifying the occurred condition or conditions.

This guarantee will remain in full force up to and including the date and any demand in respect thereof should reach the Bank not later than the date of expiry of this guarantee.

For and on behalf of the Bank.

Signature

Name

Designation

Common Seal of Bank



**HEAVY ENGINEERING CORPORATION LIMITED**

**PROJECT DIVISION**

**Annexure – 5**

**Local Content Declaration**

**Date:**

To,

M/s HEC Ltd ,  
Plant Plaza Road  
Ranchi-834004

**Sub:** Certificate as per clause 9 (a) of Revised Public Procurement (Preference to Make in India Order, 2017 of DPIIT dated 04/06/2020 and 16/09/2020.

**Ref:** HEC Tender / RFQ / NIT Number .....

I (authorized signatory for M/s .....)  
declares the local content for the items of the tender with their location details in the below mentioned table :

| <b>Sl. No.</b> | <b>Description</b>  | <b>Local Content (in %)</b> | <b>Location details at which local value addition is made (Factory address)</b> |
|----------------|---|-----------------------------|---|
| <b>1</b>       | <b>100KVA, 6.6KV/230V (L-L) Oil Immersed Lighting Transformer</b> |                             |   |

We also certify that if the details are true & correct and if found to be false then it shall be a breach of the Code of Integrity and our bid will be liable to be rejected and we will have no objection against rejection of bid.

For M/s .....

Authorized Signatory  
(with company seal &Name)



# HEAVY ENGINEERING CORPORATION LIMITED

## PROJECT DIVISION

### ENCLOSURE - I

### COMMERCIAL TERMS AND CONDITIONS

#### DEFINITIONS :

|                              |  |
|------------------------------|--|
| EMPLOYER                     | BLOCK B OCP/ NCL, Singrauli (MP)   |
| CONSULTANT                   | CMPDIL, Ranchi   |
| PURCHASER                    | Heavy Engineering Corporation Limited  |
| SUPPLIER                     | Successful Bidder  |
| ITT                          | Instructions to Tenderer   |
| Start-up                     | Refer Technical Specification (Enclosure- II)  |
| Trial Operation              | Refer Technical Specification (Enclosure- II)  |
| Performance & Guarantee Test | Refer Technical Specification (Enclosure- II)  |
| Site Engineer                | Engineer In charge of Employer   |
| Store/Site                   | Store/Site shall be the Store/Site of the Employer at BLOCK B OCP located in BLOCK B, P.O.-Gorbi, Distt- Singrauli (MP), Pin- 486892 |

#### **1.0 SCOPE OF SUPPLY / WORK & SERVICES :**

**1.1** The scope of supply is to manufacture and deliver the total equipment / items in full and good condition as given in technical specification (enclosed at "Enclosure-II") FOR Site basis within BLOCK B OCP located in BLOCK B, P.O.-Gorbi, Distt- Singrauli (MP). The scope includes, inter alia, all auxiliary and ancillary related activities such as procurement of all inputs, raw materials, bought-out components and consumables including testing and inspection, painting, safe & secure packing, handling and transportation of finished equipment duly inspected and accepted by PURCHASER/representative of Employer/Consultant till safe delivery in Purchaser's Store at Project Site.

Any scope of supplies which is not specifically mentioned in this order but materially required for the completion of the supplies and/or for safe, trouble free normal operation shall be supplied free of cost to the Purchaser/Employer unless, expressly excluded in this order.

**1.2** Total Time period for completion of Supervision of Erection & Commissioning is **5 man days**.

**1.3** The approval by the Purchaser at any stage for any supplies by the supplier/supplier's sub-suppliers shall not relieve the supplier of his obligations under this order.

#### **2.0 PRICE BASIS**

##### **2.1 FOR SUPPLIES :**

**2.1.1** Prices shall be firm and fixed till execution of order in full. No escalation will be admissible and granted on any account under any circumstances. Price schedule is to followed as per BOQ

**2.1.2** The Prices are for the entire Scope of the Facilities including Commissioning spares, oils, grease, lubricants, flushing liquor, chemicals for pickling & Special Tools & Tackles if any etc., required till commissioning of the facilities.

**2.1.3** The Prices are inclusive of all Taxes, Duties and freight upto site store. Price shall comprise of Basic Price, GST, freight, as may be applicable and prevailing on Base Date of the Purchase order.





## HEAVY ENGINEERING CORPORATION LIMITED

### PROJECT DIVISION

- 2.1.4 The payment of duties, taxes, levies, etc., will be reimbursed (on actual) against documentary evidence to be produced by the Supplier, subject to a ceiling indicated in Price Schedule of the P.O. In no case the reimbursement towards duties and taxes, etc., shall exceed the amount indicated in price schedule of the P.O. towards duties, taxes, levies, etc. except on account of variation in Taxes & Duties.
- 2.1.5 If the commissioning spares mentioned in the offer are found inadequate, the Supplier shall supply additional required Commissioning Spares, without any extra cost to the Purchaser. However, unused Commissioning Spares shall be the property of the Employer.
- 2.1.6 If the Oil, Grease & Lubricants found to be inadequate, the Supplier shall supply additional required Oil, Grease & Lubricants, without any extra cost to the Purchaser. However, unused Oil, Grease & Lubricants shall be the property of the Employer.

### **2.2 PRICE BASIS FOR SUPERVISION OF ERECTION, TESTING, COMMISSIONING & PG TEST**

- i) Prices should be quoted on the per man day basis and all applicable GST
- ii) GST for supervision of erection and commissioning if applicable shall be reimbursed against documentary evidence by PURCHASER. The price also includes all charges towards to and fro travel, boarding, local transportation, medical etc.
- iii) Price shall remain firm and binding and shall not be subject to any variation whatsoever on any account except for statutory variation on GST.
- iv) Purchaser will not entertain any additional visit charges under following circumstances :
  - a) In case of delay in erection/commissioning due to delay by supplier's engineer.
  - b) Due to lack of proper documents / knowledge to be possessed by supplier's engineer.
  - c) In case of additional visit necessitated due to fault / repair in the supplier's supplied equipment, because of design / manufacturing / workmanship fault.
  - d) In case of delays / loss of time beyond purchaser's control.
  - e) In case of short supplies by the supplier.

### **3.0 TAXES (GST)**

#### **3.1 FOR SUPPLY**

- a) GST on finished items are included in the purchase order price. GST on finished items shall be paid at the rates prevailing at the time of delivery period or purchase order delivery period, whichever is earlier and will be limited to taxes and duties actually paid by the Supplier subject to a maximum value declared in their Bid. GST shall not be paid on the intermediate products, components, assemblies, raw materials etc. purchased by the Supplier.
- b) Any revised imposition of taxes/duties on the finished items within the purchase order delivery period will be reimbursed by PURCHASER against documentary evidence. Similarly, if any of existing taxes, duties, are reduced or abolished, PURCHASER shall be entitled to get the resultant benefit in full.



## HEAVY ENGINEERING CORPORATION LIMITED

### PROJECT DIVISION

- c) Original copy of the GST Invoice as duty paying document (i.e., Buyer's Copy of GST Invoice) shall be furnished by Supplier for claiming GST on the finished items. In addition to the above, the Supplier shall furnish a certificate to the effect that no refund of GST has been obtained or claimed except credit under **GST rule**. In case any refund is obtained in future by the Supplier, the same shall be immediately passed on to PURCHASER in full.
- d) Duplicate copy of the GST Invoice (i.e., Transporter's Copy) shall be sent along with Transporter and it should be ensured that the transporter's copy of GST invoice is handed over to Site/Stores of EMPLOYER/PURCHASER, along with the consignment. Documentary evidence shall be furnished by the Supplier regarding receipt of Transporter Copy of invoice at site stores of EMPLOYER/PURCHASER.
- e) GST Invoice should be Drawn in favour of EMPLOYER as per the details indicated in the despatch instructions. PURCHASER shall not reimburse GST in case GST Invoice is not drawn as stated in the despatch instruction. GST Invoice should contain all the particulars as per Latest Notification issued by Central Board of Excise and Customs / other concerned authorities.
- f) GST No. of HEC: **23AAACH4534P1ZH**

#### 3.2 **E-Way Bills( If Required)**

The e-way bill required in connection with supply of goods or services, if any, shall be arranged by the contractor/supplier. However, the e-way bill will be arranged by NCL if provisions of the relevant Act and the rules made there under specifically states that the e-way bill is required to be issued by recipient of goods.

#### 4.0 **INSPECTION** : As per instruction in Technical Specification (Enclosure-II)

#### 5.0 **DELIVERY**

Drawings and QAP will be submitted for approval within **15 days** from the date of issuance of P.O & commented drawing will be re-submitted within **10 days** from the date of receipt of commented drawing . Inspection call with all relevant documents as per approved QAP shall be submitted within **2 months** from the date of approved drawing and QAP whichever is later and all data from our side. Delivery at site shall be completed within **15 days** from the date of issue of despatch clearance/inspection certificate/way bill whichever is applicable.

#### 6.0 **TERMS OF PAYMENT**

- 6.1 No advance payment will be made to the supplier and the payments will be linked with the progress.
- 6.2 **Ninety (90%)** of the basic price including P&F charges alongwith full GST and freight within 60 (sixty) days from date of receipt of materials at site and submission of documents and submission of following complete and correct documents in five (1 original + 4 copies) Sets at HEC, Ranchi after receipt of items at Site Stores of EMPLOYER/PURCHASER. Supplier ensure that despatches are made and Invoices are raised strictly as per the purchase order.
  - i) Five (5) copies of invoice duly signed by the Supplier.
  - ii) Challan/Lorry Receipt received by Employer's Material Receiving Department/ Stores/ Site.
  - iii) Packing list duly signed by the Supplier.



## HEAVY ENGINEERING CORPORATION LIMITED

### PROJECT DIVISION

- iv) Copy of E-way bill .
- v) Intimation for insurance before dispatch of material .
- vi) Test certificates for bought-out items
- vii) Inspection certificates/Dispatch Clearance, issued by the HEC/Employer/ Consultant for manufactured items.
- viii) Certificate from the Supplier to the effect that contents in each case are neither more nor less than those entered in the invoice and packing list and quality of the goods is guaranteed and as per the relevant specification.
- ix) Guarantee Certificate as per clause no 7.
- x) GST-R1 (GST Return Copy)

6.3. **Five (5%)** of the Basic Price excluding GST shall be released upon issue of the Preliminary Acceptance Certificate by Employer.

6.4 **Five (5%)** of the Basic Price excluding GST shall be released upon issue of the Final Acceptance Certificate by Employer.

**Note:**

1. **In case there is deviation in payment terms against NIT Payment terms , credit for no. of days will be taken into consideration, while arriving at Landed cost of material to decide L-1 firm. Interest @ 12.05% per annum will be loaded while calculating the Landed cost.**
2. **For payment all the processing charges by the bank shall be on account of the firm.**
3. **Payment as mentioned above will be made after receipt of material , by I/c(Fin), Project division, HEC Ltd., Ranchi – 834004 through RTGS on submission of Mandate Form duly signed by Bank.**
4. The supplier within five (5) days of the Date of the approval of drawing shall submit detailed Billing Schedules for the purpose of progressive payment which will be scrutinized and approved by the purchaser based on approved billing schedule order.

Number & distribution of above noted dispatch documents including original LR are indicated in our Dispatch Instructions.

#### 7.0 **GUARANTEE :**

The supplier shall must carry a guarantee of equipment/materials against faulty materials, faulty design, defective and bad workmanship for a period of 12 months from the date of FAC (Final Acceptance Certificate) or 24 months from the date of receipt of last consignment whichever is earlier.

#### 8.0 **BANK GUARANTEES**

##### 8.1 **Security Bank Guarantee & Performance Bank Guarantee (as per Annexure – E )**

The Supplier shall, within 15 (fifteen) days after the date of Purchase Order as specified, provide a Security Bank Guarantee (as per Annexure-E hereof) for the due performance of the contract an amount equivalent to 10% of the Total basic Price as indicated in the



## HEAVY ENGINEERING CORPORATION LIMITED

### PROJECT DIVISION

Price Schedule, the same shall be from any of the Nationalised Banks or Scheduled Banks in Ranchi and enforceable at Ranchi Jharkhand only.

The Public Sector Enterprises or State/Central Govt. Undertakings will not be required to submit Security Deposit, but however they shall submit "Performance Guarantee Bond" in lieu of Security Deposit

The Bank Guarantee for Security Deposit shall be valid till completion of supply which will be converted into performance Bank Guarantee valid till guarantee period as per clause 7.

#### **8.2 Claims under Security (Bank Guarantee)**

If the Purchaser considers itself entitled to any claim under any Bank Guarantee, it shall so notify the Supplier by registered/speed post, specifying the default of the Supplier upon which claim is based and it shall require the Supplier to remedy the same. If the Supplier fails to remedy or to take steps to remedy the same within fourteen days of receipt of such notice, then the Purchaser shall be entitled to invoke Security BG/PBG.

#### **9.0 LIQUIDATED DAMAGES FOR DELAY IN COMPLETION**

If the Supplier fails to attain "Delivery Period" as defined in Clause 5.0 above or any extension thereof due to reasons not attributable to the Purchaser, the Purchaser shall recover the amount of Liquidated Damages, but not by way of penalty, by making deductions from the Supplier's account or as a last resort by encashment of Supplier's Bank Guarantees, at the rate of 0.5% of the Final Purchase Order basic Price, if any, paid or payable to the Supplier per complete week of delay up to a maximum of 10% of the Final Purchase Order basic Price, paid or payable to the Supplier.

#### **10.0 TRANSIT INSURANCE**

Shall be covered under Marine-cum-Erection & Commissioning(MCE) policy taken by us. The policy No. and detail address of the Insurance Company will be intimated to the supplier before despatch. Supplier shall have to furnish full despatch details to the Insurance Company with the copy to this office immediately after despatching the materials.

#### **11.0 MODE OF DESPATCH**

For the consignments to be despatched by Road, the supplier shall ensure that the following are observed by them :

- i) All despatches must be effected only on receipt of written despatch clearance from PURCHASER.
- v) Supplier shall despatch all the materials consigned to, GM, Block B, NCL P.O- Gorbi, Distt- Singrauli (MP), Pin-486892
- ii) Identify and obtain the correct type of trucks/trailers, keeping in view the nature of consignments to be despatched.
- iii) Care shall be taken to avoid damages during transit to ensure that all packages are firmly secured.
- vi) All consignments despatched by truck/trailor shall be consigned on door delivery basis (Full or part lorry load). No. transshipment is allowed.
- vii) The transporter must be approved by Bank Association.
- viii) In case any other mode of transport has to be restored other than that mentioned in the Purchase Order, the same should be done only after obtaining prior approval in writing from the Purchaser. By allowing such transportation no increase in freight charges shall be allowed and in case there is decrease, the actual shall be payable to the supplier



**12.0 PACKING, FORWARDING AND SHIPMENT**

- a) The Supplier, wherever applicable, shall after proper painting, pack and crate all equipment in such a manner as to protect them from deterioration and damage during rail and road transportation to the site and storage at the site till the time of erection. The Supplier shall be held responsible for all damages due to improper packing. The supplier shall be liable to deliver the material at the destination as per specification. Any damage during transit shall be sole responsibility of the supplier. In case of damage, the material shall be liable to be rejected and supplier shall replace the same and lift the rejected material within time at their risk and cost.
- b) The Supplier shall notify the Purchaser of the date of each shipment from his works, and the expected date of arrival at the site for the information.
- c) The Supplier shall also give all shipping information concerning the weight, size and content of each packing including any other information the Purchaser may require.
- d) The Supplier shall prepare detailed packing list of all packages and containers, bundles and loose material forming each and every consignment despatched to site. The Supplier shall further be responsible for making all necessary arrangements for loading, unloading and other handling right from his works upto the safe delivery at site store.
- e) The Spplier shall paste the Packing List on the container/boxes as well as inside the container/boxes.
- f) The Supplier shall ensure that after receipt of materials at site, his representative will be available at site for verification of materials as and when required by site I/c, HEC Ltd.

**13.0 DEMURRAGE, WHARF-AGE, ETC.**

All demurrage, wharf-age and other expenses incurred due to delayed clearance of the material or any other reason shall be to the account of the Supplier.

**14.0 FORCE MAJEURE**

- A)** Force majeure is herein defined as any cause which is beyond the control of the Supplier or Purchaser as the case may be which they could not foresee or with a reasonable amount of diligence could not have foreseen and which substantially affect the performance of the purchase order, such as:
  - (a) natural phenomena, including but not limited to floods, draughts earthquakes and epidemics:
  - (b) acts of any government, including but not limited to war, declared or undeclared, priorities, quarantines, embargoes, Provided either party shall within Twenty one (21) days from the date of occurrence of such a cause notify the other in writing of such causes.
- B)** The bidding document will clearly state that
  - (a) The Supplier will advise, in the event of his having resort to this clause by a registered letter duly certified by the local chamber of commerce or statutory authorities, the beginning and end of the cause of delay, within fifteen days of the occurrence and cessation of such force majeure condition. In the event of delay lasting over two months, arising out of force majeure, the purchase order may be terminated at the discretion of the purchaser.



## HEAVY ENGINEERING CORPORATION LIMITED

### PROJECT DIVISION

- (b) For delays arising out of Force Majeure, the Supplier will not claim extension in completion date for a period exceeding the period of delay attributed to causes of Force Majeure and neither EMPLOYER nor PURCHASER shall be liable to pay extra costs (like increase in rates, remobilization advance, idle charges for labour, machinery etc.).
- (c) If any of the Force Majeure conditions exists in the place of operation of the Supplier even at the time of submission of the bid he will categorically specify them in the bid and state whether they have been taken into consideration in their quotations.

**C)** The Supplier or the Purchaser shall not be liable for delays in performing his obligations resulting from any force majeure cause as referred to and/or defined above. The date of completion will, subject to hereinafter provided, be extended by a reasonable time even though such cause may occur after Supplier's performance of his obligations has been delayed for other causes.

#### **15.0 LONG TERM AVAILABILITY OF SPARES**

15.1 The Supplier shall guarantee the long term availability of spares to the Employer for the full life of the equipments covered under the purchase order. The Supplier shall guarantee that before going out of production of spare parts of the equipment covered under the purchase order, he shall give the Employer at least twelve (12) months advance notice so that the later may order his bulk requirement of spares, if he so desires. The same provision will also be applicable to sub-Supplier. Further, in case of discontinuance of manufacture of any spares by the Supplier or his sub-Suppliers, the Supplier will provide the Employer two years in advance, with full manufacturing drawings, material specifications and technical information required by the Employer for the purpose of manufacture of such items.

15.2 Further, in case of discontinuance of supply of spares by the Supplier or his sub-Suppliers, the Supplier will provide the Employer with full information for replacement of such spares with other equivalent makes, if so required by the Employer.

#### **16.0 MARKING OF EQUIPMENT :**

The materials must be marked/stenciled of Equipment No.

#### **17.0 NOTIFICATION OF DESPATCH :**

Each and every despatch should be notified immediately after despatch giving the relevant particulars like Truck No., Challan No. with date, C/Note No., Name of the transporter with their full address, date of despatch etc. to the following through telex/telegram/fax :

|    |  |
|----|--|
| a) | Project Manager(I/c) HEC Ltd., Block B, NCL  |
| b) | I/C(Purchase), Project Division<br>HMBP Adm. Bldg. Annexe, HEC Ltd.,Ranchi- 834004 |

#### **18.0 PAYING AUTHORITY**

Payment as mentioned above will be made by (I/C,Finance), Project Division, HEC Ltd., Ranchi 834 004.

#### **19.0 PROGRESS REPORT:**

Progress of delivery/inspection must be given to the officer who has signed the purchase order, on the 15<sup>th</sup> and 30<sup>th</sup> of each month during urgency of delivery period. Where





# HEAVY ENGINEERING CORPORATION LIMITED

## PROJECT DIVISION

delivery period is crossed by the supplier, he has to take approval of buyer in writing before despatch.

### **20.0 SUBLETTING AND ASSIGNMENT :**

The supplier shall not, have without the previous consent in writing of the purchasers, sublet, transfer or assign the purchase order or any part thereof or interest therein or benefit or advantage thereof in any manner whatsoever. Provided nevertheless that any such consent shall not relieve the supplier from any obligation, duty or responsibility under the purchase order.

### **21.0 CHANGE IN A FIRM :**

Where the supplier is a partnership firm, a new partner shall not be introduced in the firm except with the previous consent in writing of the purchaser (which may be granted only as an exception) of a written undertaking by the new partner to perform the purchase order and accept all liabilities incurred by the firm under the purchase order prior to the date of such undertaking.

### **22.0 CONSEQUENCE OF BREACH :**

Should the supplier or a partner in the supplier firm commit breach of either of the clauses (20) and (21) of this commercial terms and conditions, it shall be lawful for the purchaser to cancel the purchase order and purchase or authorize the purchase of the stores at the risk and cost of the supplier firm and that even the provisions of Clause (9) shall, as far as applicable, apply.

The decision of Heavy Engineering Corporation Limited as to any matter or thing concerning or arising out of this clause or any question whether the supplier or any partner of the supplier firm has committed a breach of any of the conditions in this clause contained shall be final and binding on the supplier.

### **23.0 CONSIGNEE :**

Site In-charge  
Heavy Engineering Corporation Ltd.  
Block-B OCP,  
Gorbi  
Dist-Singrauli  
Madhya Pradesh-486892  
Kind Attn. :- **Mr. Bikram Singh DGM/Site(I/c), Mob No- +919938421303**

**And bill to** Site In-charge, Heavy Engineering Corporation Ltd., Block-B OCP, Gorbi, Dist-Singrauli, Madhya Pradesh-486892 **And GST No. 23AAACH4534P1ZH of HEC**

### **24.0 FIRST FILL OF CONSUMABLES, OILS AND LUBRICANTS :**

Shall be provided by supplier at no extra cost as per Technical Specification.

### **25.0 TRAINING OF PERSONNEL :**

Supplier shall provide free of cost training of personnel from PURCHASER/NCL for ..... month at his works. However, boarding, lodging and fare etc shall be borne by the purchaser/employer.

### **26.0 Q.A. PLAN :**

Approved QAP and inspection procedure by HEC's/CMPDIL's/NCL's Engineer/ Officer shall apply.

### **27.0 WEIGHT OF EQUIPMENT**

Weight of equipment must be intimated to the purchaser before effecting delivery.



# HEAVY ENGINEERING CORPORATION LIMITED

## PROJECT DIVISION

**28.0 COMMISSIONING SPARES:**

Will be supplied free of cost by supplier as required.

**29.0 FORMAT AND NAME PLATE**

All the drawings should be prepared in the format and nameplates with drawing No. out of allotted drawing Nos. to be given to the supplier at the time of placement of order.

**30.0 DRAWING, DOCUMENTS & MANUALS**

Will be furnished as per Technical Specification(Refer Enclosure-II).

**31.0 UNIT RATES**

Unit rates of various supply item which may be required during execution of this package will remain firm till execution of the order.

**32.0 BOUGHT-OUT ITEMS:**

Un-priced purchase order of supplier's bought-out items will be submitted to us within a week after issue of your order.

**33.0 PAINTING**

Painting will be done as per Technical Speciation (Refer Enclosure-II).

**34.0 REJECTION**

If the stores supplied are not to specifications/samples or in accordance with order and are rejected, the same will be removed by supplier at supplier's own risk and cost within 21 days of the date of intimation of rejection by Inspection Deptt/Stores Deptt/Purchase Deptt. If no instruction are received from supplier with regard to mode of despatch, purchaser/employer shall be free and reserve the right to return the rejected materials at supplier's risk and cost and to recover entire freight and other incidentals incurred by PURCHASER. Such rejected stores will be kept in our go down/site for 21 days from the date of intimation to supplier and thereafter those remain at supplier's risk and cost. The purchaser shall also be entitled to recover ground rent/demurrage charges on the rejected stores after expiry of free time mentioned above.

**35.0 SPECIAL INSTRUCTION (DESPATCH MARK/IDENTIFICATION MARK)**

The following markings are to be done on each package

All packages shall be clearly and properly marked in English language with indelible paint stenciling. All previous irrelevant markings shall be carefully obliterated. The Supplier shall ensure that the following are clearly stenciled with good quality non-fading paint on the packages in characters of 150 mm high or so depending upon size of the packages.

a) Name and address of the Consignee : Engineer (*designation & address to be given in the detailed letter of Acceptance*)

GM, Block B, NCL

P.O.- Gorbi, Distt- Singrauli (M.P.)-486892

b) Name of the Supplier/ :

c) Description :

d) Quantity :

e) Package Number :

f) Gross and Net Weights :

g) Outer dimensions :

h) Port of loading and :unloading (for imported Equipment, wherever applicable)

i) Place of loading and unloading



## HEAVY ENGINEERING CORPORATION LIMITED

### PROJECT DIVISION

#### **36.0 LEGALITY AND DISPUTE SETTLEMENT :**

- a) This order/purchase order shall be governed by and interpreted according to the relevant laws of India with jurisdiction of courts at Ranchi.
- b) Any dispute that may arise between the parties out of or in-connection with this order/purchase order or for the breach thereof, shall be settled amicably and in good faith by negotiations between the designated executives of the parties, at the first instance.
- c) In the event, the parties fail to resolve the disputes or differences arising out of or in connection with the order/purchase order or execution thereof through amicable settlement, the same shall be referred to settlement through “adjudication” of the same by the Sole Arbitrator appointed by PURCHASER. Such arbitration shall proceed as per the provisions of Arbitration and Conciliation Act, 1996 and /or amended from time to time.
- d) The arbitration shall be governed by and in accordance with the Arbitration and Conciliation Act, 1996 for adjudication of the disputes and differences including claims and counter-claims of the parties. The award rendered shall be final and binding upon both the parties.
- e) The venue of arbitration shall be normally at Ranchi only, unless and until agreed otherwise by the parties.
- f) The courts at Ranchi in the State of Jharkhand shall have the exclusive jurisdiction in respect of all the disputes arising out of this contract.

#### **37.0 OTHER TERMS AND CONDITIONS**

Other terms and conditions which are not mentioned above shall be as per General Terms and Conditions of Contract of the Corporation which can be downloaded from our website <https://etenders.gov.in/e procure/app>,

#### **Enclosures:**

1. Form of Tender (Annexure-A)
2. No Dispute Certificate (Annexure –B)
3. Check List for acceptance/ confirmation of commercial terms & conditions (Annexure-C)
4. Proforma for Security / Performance Bank Guarantee (Annexure-E)



HEAVY ENGINEERING CORPORATION LIMITED

PROJECT DIVISION

Annexure-A

FORMS OF TENDER

Sub : TENDER for the Work \_\_\_\_\_

To,

\_\_\_\_\_  
\_\_\_\_\_

Dear Sir,

We offer to execute the Works described above in accordance with the Conditions of Contract accompanying the Tender Document issued to us.

This tender and your written acceptance of it shall constitute a binding contract between us. We understand that you are not bound to accept the lowest or any tender you received.

We hereby confirm that this tender complies with the tender validity and tender security required by the tender documents.

Yours faithfully

Authorised Signature :

Name and Title of the Signatory :

Name of Tenderer :

Address :

Date :

(To be filled by the tenderer )



**HEAVY ENGINEERING CORPORATION LIMITED**

**PROJECT DIVISION**

**Annexure-B**

**NO DISPUTE CERTIFICATE**

Sub : TENDER for the Work \_\_\_\_\_

To,

The Incharge/Purchase  
Projects Division/HEC  
HMBP Adm. Building(Annexe)  
Dhurwa, Ranchi -834 004, Jharkhand

Dear Sir,

We hereby declare that there is no dispute with Heavy Engineering Corporation Ltd., Ranchi on date.

Yours faithfully

Authorised Signature :

Name and Title of the Signatory :

Name of Tenderer :

Address :

Date :

(To be filled by the tenderer )



# HEAVY ENGINEERING CORPORATION LIMITED

## PROJECT DIVISION

ANNEXURE – C

Sh 1 of 2

### **CHECK LIST FOR ACCEPTANCE / CONFIRMATION OF COMMERCIAL TERMS & CONDITIONS**

Please confirm your acceptance of following Clauses of Commercial Terms & Conditions :-

| CLAUSE No. | PARTICULARS   | ACCEPTANCE / CONFIRMATION OF TENDERER (YES / NO) | REMARKS |
|------------|---|--|---------|
| 1.0        | SCOPE OF SUPPLY / WORK & SERVICES                         |  |         |
| 2.0        | PRICE BASIS   |  |         |
| 3.0        | TAXES & DUTIES  |  |         |
| 4.0        | INSPECTION  |  |         |
| 5.0        | DELIVERY  |  |         |
| 6.0        | TERMS OF PAYMENT  |  |         |
| 7.0        | GUARANTEE   |  |         |
| 8.0        | BANK GUARANTEES   |  |         |
| 9.0        | LIQUIDATED DAMAGES DUE TO DELAY IN COMPLETION             |  |         |
| 10.0       | TRANSIT INSURANCE   |  |         |
| 11.0       | MODE OF DESPATCH  |  |         |
| 12.0       | PACKING, FORWARDING AND SHIPMENT                          |  |         |
| 13.0       | DEMURRAGE, WHARF-AGE, ETC.                                |  |         |
| 14.0       | FORCE MAJEURE   |  |         |
| 15.0       | LONG TERM AVAILABILITY OF SPARES                          |  |         |
| 16.0       | MARKING OF EQUIPMENT                                      |  |         |
| 17.0       | NOTIFICATION OF DESPATCH                                  |  |         |
| 18.0       | PAYING AUTHORITY  |  |         |
| 19.0       | PROGRESS REPORT   |  |         |
| 20.0       | SUBLETTING AND ASSIGNMENT                                 |  |         |
| 21.0       | CHANGE IN A FIRM  |  |         |
| 22.0       | CONSEQUENCE OF BREACH                                     |  |         |
| 23.0       | CONSIGNEE   |  |         |
| 24.0       | FIRST FILL OF CONSUMABLES, OIL & LUBRICANTS               |  |         |
| 25.0       | TRAINING OF PERSONNEL                                     |  |         |
| 26.0       | Q.A. PLAN   |  |         |
| 27.0       | WEIGHT OF EQUIPMENT                                       |  |         |
| 28.0       | COMMISSIONING SPARES                                      |  |         |
| 29.0       | FORMAT AND NAME PLATE                                     |  |         |
| 30.0       | DRAWING, DOCUMENTS & MANUALS                              |  |         |
| 31.0       | UNIT RATES  |  |         |
| 32.0       | BOUGHT-OUT ITEMS  |  |         |
| 33.0       | PAINTING  |  |         |
| 34.0       | REJECTION   |  |         |
| 35.0       | SPECIAL INSTRUCTION (DESPATCH MARK / IDENTIFICATION MARK) |  |         |
| 36.0       | LEGALITY AND DISPUTE SETTLEMENT                           |  |         |
| 37.0       | OTHER TERMS AND CONDITIONS                                |  |         |





**HEAVY ENGINEERING CORPORATION LIMITED**

**PROJECT DIVISION**

**ANNEXURE - E**

**SECURITY / PERFORMANCE BANK GUARANTEE**

**(To be executed on Non-Judicial Stamp Paper of appropriate value)**

**(TO BE ISSUED BY ANY NATIONALISED/ SCHEDULED BANK  
AUTHORISED BY RBI TO ISSUE A BANK GUARANTEE)**

..... **(Name of the Bank)**

Address.....

Guarantee No. ....

A/c Messrs ..... **(Name of Supplier)**

Date of Expiry .....

Limit to liability (**currency & amount**) .

Contract No. ....

For ..... **(Name of Facilities)**

**Subject:**..... **Performance Bank Guarantee.**

Date ..... 201.

**To  
Heavy Engineering Corporation Limited  
P.O. Dhurwa, Dist. Ranchi, Pin - 834 004, (Jharkhand)**

Dear Sir,

We refer to the Contract Agreement / Purchase Order (hereinafter called the "Contract") Reference No..... Dated ..... between you and M/s. (**Name of the Supplier**) (hereinafter called the "Supplier") for the design, civil, manufacture, supply of plant & equipment, refractories and structures, storage, insurance & handling, erection, testing, commissioning and performance guarantee tests of .. . (**Name of the Facilities**) (**strikeout whichever is not applicable**).

In consideration of the Heavy Engineering Corporation Limited, having its Registered office at Plant Plaza Road, P.O. Dhurwa, Ranchi - 834004 (hereinafter called to as the "Purchaser" which expression shall unless repugnant to the context or meaning thereof, include all successors, administrators and assigns) having awarded to \_\_\_\_\_ [**Name & Address of the supplier**] (hereinafter called to as "Supplier" which expression shall unless repugnant to the context or meaning thereof include its successors, administrators, executors and assigns) the work \_\_\_\_\_ [**Name of the Work**] by issue of Letter of Award No. \_\_\_\_\_ [**Letter of Intent No.**] and the same having been unequivocally accepted by the Supplier resulting into a Purchase Order No. \_\_\_\_\_ dated \_\_\_\_\_ valued at \_\_\_\_\_ [**value of P. O.**] (hereinafter called 'the Contract') and the



**HEAVY ENGINEERING CORPORATION LIMITED**

**PROJECT DIVISION**

Purchaser having agreed to accept Performance Bank Guarantee of \_\_\_ [indicate figure]% of the Contract Sum \_\_\_\_\_ [amount in figures and words) from a Nationalized/Scheduled Bank for due performance of the work executed by the Supplier as per the terms & conditions contained in the said Contract.

We, \_\_\_\_\_ [name of the Bank], of \_\_\_\_\_ [address of the Bank] (hereinafter called to as "Bank" which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Purchaser immediately on demand and or, all money payable by the Supplier to the extent of \_\_\_\_\_ [amount of guarantee in figures and words ], at any time from \_\_\_\_\_ to \_\_\_\_\_ without any demur, reservation, recourse, contest or protest and/or without any reference to the Supplier. Any such demand made by the Purchaser on the Bank shall be conclusive and binding notwithstanding any difference between the Purchaser and the Supplier or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. We agree that the Guarantee herein contained shall be irrevocable and shall continue to be enforceable as per the terms & conditions contained in the said Contract.

The Purchaser shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee, from time to time, to extend the validity of time of Performance of the Contract by the Supplier. The Purchaser shall have the fullest liberty without affecting this Guarantee, to postpone, from time to time, the exercise of any powers vested in them or of any right which they might have against the Supplier, and to exercise the same at any time in any manner, and either to enforce or to forebear or to enforce any covenants contained or implied in the Contract, between the Purchaser and the Supplier or any other course or remedy or security available to the Purchaser. The Bank shall not be released of its obligations under these presents by any exercise by the Purchaser of its liberty with reference to matter aforesaid or any of them or by reason of any other act of forbearance or other acts of omission or commission on the part of the Purchaser or any other indulgence shown by the Purchaser or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving the Bank. The Bank also agrees that the Purchaser at its option shall be entitled to enforce this Guarantee against the Bank as a Principal Debtor in first instance, without proceeding against the Supplier and notwithstanding any security or other Guarantee that the Purchaser may have in relation to the Supplier's liabilities.

This Bank Guarantee shall be operable at State Bank of India, Commercial Branch, MECON Campus, Doranda, Ranchi.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ at \_\_\_\_\_

For and on behalf of the Bank.

Signature \_\_\_\_\_

Name \_\_\_\_\_

Designation \_\_\_\_\_

Common Seal of Bank \_\_\_\_\_

**HEAVY ENGINEERING CORPORATION LIMITED****PROJECT DIVISION****ENCLOSURE-II**

**TECHNICAL SPECIFICATION  
FOR  
100 KVA OIL IMMERSED LIGHTING TRANSFORMER**

**INDEX**

| <b>Sl. No.</b> | <b>Description</b>  | <b>Page No.</b> |
|----------------|---|-----------------|
| 1.             | Scope of Works  | 2 of 13         |
| 2.             | Codes & Standard  | 2 of 13         |
| 3.             | General   | 2 of 13         |
| 4.             | Equipment Specification   | 2 of 13         |
| 5.             | Technical data sheet of the Equipment                                       | 3 of 13         |
| 6.             | Painting  | 3 of 13         |
| 7.             | Protection  | 4 of 13         |
| 8.             | Inspection, Testing and Inspection Certificate                              | 4 to 5 of 13    |
| 9.             | Inspection & Quality control before despatch                                | 5 to 6 of 13    |
| 10.            | Test  | 6 to 8 of 13    |
| 11.            | Packing   | 8 of 13         |
| 12.            | Guarantee   | 8 of 13         |
| 13.            | Spares, Consumables, Tools & Tackles  | 9-10 of 13      |
| 14.            | Drawings & Documents  | 10-13 of 13     |
| 15.            | Design Co-ordination  | 13 of 13        |
| 16.            | Design Co-ordination Meeting  | 13 of 13        |
| 17.            | Training of Owner's Personnel   | 13 of 13        |
| 18.            | <b><u>ANNEXURES</u></b>   | 1 to 19         |
|                | i) Annexure-1 : Equipment Specification                                     | 1 to 11 of 17   |
|                | ii) Annexure-2 : Technical Data Sheet                                       | 12 to 14 of 17  |
|                | iii) Annexure-3 : Deviation from Tender Documents                           | 15 of 17        |
|                | iv) Annexure-4 : Questionnaire to be filled-in and submitted with the Offer | 16 of 17        |
|                | v) Annexure-5 : Bill of Quantity  | 17 of 17        |



**1.0 SCOPE OF WORK**

The scope of work includes Design, Engineering, Manufacture, Assembly, Shop Testing, Painting at Manufacturer's Shop, Inspection by HEC/CMPDIL/NCL/Authorized Agency, Packing, Transportation and Supply F.O.R. Site of **"100 KVA, 6.6KV/230V (L-L) OIL IMMERSED LIGHTING TRANSFORMER"** as detailed in Annexure-1 and Bill of Quantity as per Annexure-5 for Coal Handling Plant, Block B Project, Northern Coalfields Limited. Unit price shall be quoted for each item.

**1.1 SCOPE OF WORK ALSO INCLUDES:**

- a) Submission of Drawings & Documents.
- b) Supports, fixing bolts & nuts including foundation bolts if any, required for installing the equipment.
- c) Supervision of Installation, Commissioning, Trial Run and PG Test as per equipment specification.
- d) Required quantity of initial fill of oil, grease, lubricants, hydraulic fluid etc. and other consumables which are necessary for cleaning/flushing including erection, testing and commissioning of the machine.
- e) The equipment supply shall be completed in all respect including its structural, mechanical and electrical components and any material/component or accessory not specifically stated in this specification but necessary for trouble free operation shall be deemed to be included.
- f) Operation, Instruction and Maintenance Manuals.
- g) Guarantee for 24 months from the date of supply or 18 months from the date of commissioning whichever is later.

**1.2 EXCLUSIONS:**

- a) Erection, Testing & Commissioning of the equipment.
- b) Civil Work

**1.3 TECHNICAL ELIGIBILITY CRITERIA:-**

Copy of three (03) nos. of purchase order along with performance/completion certificate duly issued by their clients towards supply of 100 KVA, 6.6KV/230V (L-L) Oil Immersed Lighting Transformer or above rating in last 5 years.

**2.0 CODES & STANDARD**

The equipment & accessories offered shall be designed, manufactured & tested in accordance with the latest standards & codes of practices by the Bureau of Indian Standards / International Standards. Hierarchy of specification will be as under:

- i) Technical Specification
- ii) Bureau of Indian Standard
- iii) International Standard

**3.0 GENERAL**

This specification will be read in conjunction with the Instruction to Tenderer (ITT) and supplies.

**4.0 EQUIPMENT SPECIFICATION**

As per the enclosure at Annexure-1.



**5.0 TECHNICAL DATA SHEET OF THE EQUIPMENT**

As per the enclosure at Annexure-2 to be filled up by Tenderer.

**6.0 PAINTING**

**6.1 PAINTING AT MANUFACTURER'S WORKS:**

Painting shall be carried out after issue of inspection certificate. All exposed metal parts of the equipment including piping, structure railing etc. wherever applicable, after installation unless otherwise surface protected, shall be first painted with at least two coat of suitable primer which matches the shop primer paint used, after thoroughly cleaning all such parts of all dirt, rust, scales, greases, oils and other foreign materials by wire brushing, scarping or sand blasting, and the same being inspected and approved by the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative for painting. Afterwards, the above parts shall be finished with two coats of alloyed resin machinery enamel paints. The quality of the finish paint shall be as per the standards of ISI or equivalent and to be of the colour as approved by the HEC's/NCL's/Consultant's Engineer.

Shop primer for all steel surfaces which will be exposed to operating temperature below 95°C shall be selected by the successful bidder, after obtaining specific approval of the engineer regarding the quality of primer proposed to be applied. Special high temperature primer shall be used on surfaces exposed to temperatures higher than 95°C and such primers shall also be subject to approval of the HEC's/NCL's/Consultant's Engineer.

All other steel surfaces which are not to be painted shall be coated with suitable dust preventive compound subject to approval of the engineer.

**6.2 PAINTING AT SITE:**

Surfaces damaged during transportation shall be repainted after installation at site.

Adequate quantity of paints shall be supplied with equipment for this purpose.

**6.3 PRESERVATIVE SHOP COATING:**

(a) All exposed metallic surfaces subject to corrosion shall be protected by shop application of suitable coatings. All surfaces which will not be easily accessible after the shop assembly, shall beforehand be treated and protected for the life of the equipment. All surfaces shall be thoroughly cleaned of all mill scale, oxide and other coatings and prepared in the shop. The surfaces that are to be finish painted after installation or require corrosion protection until installation, shall be shop painted with at least two coats of primer. Transformers and other electrical equipment, if included shall be shop finished with one or more coats of primer and two coats of high grade resistance enamel. The finished colours shall be as per manufacturer's standards, to be selected and specified by the engineering at a later date.

(b) All other steel surfaces which are not to be painted shall be coated with suitable dust preventive compound subject to the approval of the engineer.



**7.0 PROTECTION:**

All coated surfaces shall be protected against abrasions, impact, discoloration and any other damages. All exposed threaded portions shall be suitably protected with either a metallic or a non-metallic protecting device. All ends of all valves and piping and conduit equipment connections shall be properly sealed with suitable devices to protect them from damage. The parts which are likely to get rusted, due to exposure to weather, should also be properly treated and protected in a suitable manner.

**8.0 INSPECTION, TESTING AND INSPECTION CERTIFICATE**

Inspection & Testing to be carried out : Load/No load test as per Approved Quality Assurance Plan (QAP)

Inspecting Authority : HEC/CMPDIL/NCL/Authorised Agency

- 8.1 The manufacturer will prepare a detailed quality Assurance Plan (QAP) in purchaser's format & submit the same in Quintuplicate (5) for HEC/CMPDIL/NCL approval. The QAP shall cover all necessary checks related to receiving inspection of raw materials/bought-out items, in process & final inspections including painting, marking, packing etc.
- 8.2 The HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative and/or outside inspection agency acting on behalf of the Purchaser shall have at all reasonable times access to the Successful bidder's premises or works and shall have the power at all reasonable times to inspect and examine the materials and workmanship of the works during its manufacture and if part of the works is being manufactured or assembled at other premises or works, the Successful bidder shall obtain for the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative permission to inspect as if the works were manufactured or assembled on the Successful bidder's own premises or works.
- 8.3 Successful bidder shall give the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative fifteen (15) days written notice of any material being ready for testing. Such tests shall be to the Successful bidder's account except for the expenses of the Inspector. The HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative, unless witnessing of the tests is virtually waived, will attend such tests within fifteen (15) days of the date on which the equipment is notified as being ready for test / inspection, failing which the Successful bidder may proceed with the test which shall be deemed to have been made in the Inspector's presence and he shall forthwith forward to the Inspector duly certified copies of tests in triplicate.
- 8.4 The HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative shall within fifteen (15) days from the date of inspection as defined herein give notice in writing to the Successful bidder, of any objection to any drawings and all or any equipment and workmanship which in his opinion is not in accordance with the Technical Specification. The Successful bidder shall give due consideration to such objections and shall either make the modifications that may be necessary to meet the said objections or shall confirm in writing to the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative giving reasons therein, that no modifications are necessary to comply with the contract.





- 8.5 When the factory tests have been completed at the Successful bidder's or sub-vendors works, the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative shall issue a certificate to this effect within fifteen (15) days after completion of tests but if the tests are not witnessed by the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative, the certificate shall be issued within fifteen (15) days of the receipt of the Successful bidder's test certificate by the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative. Failure of the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative to issue such a certificate shall not prevent the successful bidder from proceeding with the works. The completion of these tests or the issue of the certificate shall not bind the Purchaser to accept the equipment should it, on further tests after erection, be found not to comply with the contract.
- 8.6 In all cases where the contract provides for tests whether at the premises or works of the Successful bidder or of any sub-vendors, the Successful bidder, except where otherwise specified, shall provide free of charge such items as labour, materials, electricity, fuel, water, stores, apparatus and instruments as may be reasonably demanded by the HEC's/NCL's/Consultant's Engineer and/or his authorised representative to carry out effectively such tests of the equipment in accordance with the contract and shall given facilities to the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative to accomplish testing.
- 8.7 The inspection by HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative and issue of Inspection Certificate thereon shall in no way limit the liabilities and responsibilities of the Successful bidder in respect of the agreed quality assurance programme forming a part of the contract.

**9.0 INSPECTION & QUALITY CONTROL BEFORE DESPATCH**

**9.1 SPECIAL MATERIAL:**

The manufacturer should furnish during inspection without extra charges test certificates covering mechanical properties and chemical composition for special raw materials used including that of liners. The certificates should be from the approved testing laboratories such as Small Industries Services, CMERI, Durgapur, NPL, New Delhi etc. If considered necessary, samples for material may be selected as per relevant latest Indian Standards and code by the Employer's representative from amongst the raw materials and manufactured components of equipment and got tested in the approved laboratory. In case samples so selected fail to meet the standard specifications the whole lot of manufactured components will be rejected and disqualified for use again for any of the Employer's supplies.

**9.2 STAGE INSPECTION:**

Employer/CMPDI/HEC reserves the right to carry out inspection at any stage of the process of manufacture and assembly for which all facilities will be provided by the successful bidder. Before carrying out such inspection, necessary information will be given to the manufacturer by the Employer/CMPDI.



**9.3 AVAILABILITY OF STANDARD SPECIFICATION METERS, GAUGES ETC. FOR TESTING & INSPECTION.**

The manufacturer will maintain all relevant standards and codes of practice for manufacture, inspection and testing of components of the equipment ordered. He will also maintain a set of meters, gauges etc. as may be required for testing and inspection of components.

**9.4 CHECKS DURING INSPECTION:**

The details of the checks to be carried for various components are to be submitted by the successful bidder for HEC/CMPDI/NCL's approval. However, some indicative checks on different items are given below which should necessarily form part of the quality assurance programme to be agreed with the CMPDI/NCL.

- All plates above 20mm thickness shall be ultrasonically tested for laminations.
- Shaft forgings and castings shall be checked for hardness, microstructure and ultrasonic testing in addition to check for chemical and mechanical properties.
- Following minimum NDT requirements to be ensured for welds:
  - i) Butt welds : 10% Ultrasonic/Radiographic and 100% Magnetic particle
  - ii) Fillet welds : 10% Magnetic particle

**10.0 TEST**

Procedures for start up, trial operation & Performance Guarantee Test shall be as under and will be carried out in presence of Purchaser & Employer. Presence of successful bidder's representative, if applicable, during above test shall be as per Scope mentioned above.

**10.1 START UP**

10.1.1 On completion of erection of the equipment by the Purchaser and before start-up, each item of the equipment shall be thoroughly cleaned and then inspected jointly by the Engineer and the Successful bidder for correctness and completeness of installation and acceptability of start-up, leading to initial pre-commissioning tests at site. The list of pre-commissioning tests to be performed shall be as mutually agreed and included in the Successful bidder's Quality Assurance Programme.

10.1.2 The Successful bidder's commissioning/start-up engineers specifically identified as far as possible shall be responsible for carrying out all the pre-commissioning tests. On completion of inspection, checking and after the pre-commissioning tests are satisfactorily over, the complete equipment shall be placed on initial operation during which period the complete equipment shall be operated integral with sub-systems and supporting equipment as a complete plant referred hereinafter as plant.

**10.2 TRIAL OPERATION**

10.2.1 The plant shall then be put on trial operation during which period all necessary adjustments shall be made while operating over the full load-range enabling the plant to be made ready for performance and guarantee tests.



- 10.2.2 The duration of trial operation of the complete equipment shall be fourteen (14) days out of which at least seventy two (72) hours shall be continuous operation on full load or any other duration as may be agreed to, between the Engineer and the Successful bidder. The trial operation shall be considered successful, provided that each item of the equipment can operate continuously at the specified operating characteristics, for the period of trial operation.
- 10.2.3 For the period of trial operation, the time of operation with any load shall be counted. Minor interruptions not exceeding four (4) hours at a time, caused during the continuous operation shall not affect the total duration of trial operation. However, if in the opinion of the Engineer, the interruption is long, the trial operation shall be prolonged for the period of interruption.
- 10.2.4 A trial operation report comprising of observations and recordings of various parameters to be measured in respect of the above trial operation shall be prepared by the Successful bidder. This report, besides recording the details of the various observations during trial run, shall also include the dates of start and finish of the trial operations and shall be signed by the representatives of both the parties. The report shall have sheets, recording all the details of interruptions occurred, adjustments made and any minor repairs done during the trial operation. Based on the observations, necessary modifications/ repairs to the plant shall be carried out to the full satisfaction of the Engineer In charge to enable the later to accord permission to carry out performance and guarantee tests on the plant.

### **10.3 PERFORMANCE AND GUARANTEE TEST**

- 10.3.1 The final test as to the performance and guarantees shall be conducted at site by the Employer. Such tests will be commenced within a period of two (2) months after successful completion of trial operations. Any extension of time beyond the above two (2) months shall be mutually agreed upon.
- 10.3.2 These tests shall be binding on both the parties (Successful bidder & Purchaser) to determine compliance of the equipment with the performance guarantees.
- 10.3.3 The available instrumentation and control equipment will be used during such tests and the Engineer In charge will calibrate, all such measuring equipment and devices as far as practicable. However, immeasurable parameters shall be taken into account in a reasonable manner by the Engineer, for the equipment of these tests. The tests will be conducted at the specified load points and as near the specified cycle condition as practicable. The Engineer will apply proper corrections in calculation, to take into account conditions which do not correspond to the specified conditions.
- 10.3.4 Any special equipment, tools and tackles required for the successful completion of the performance and guarantee tests shall be provided by the Successful bidder, free of cost.
- 10.3.5 The guaranteed performance figures of the equipment shall be proved by the Successful bidder during these performance and guarantee tests. Should the results of these tests show any decrease from the guaranteed values, the Successful bidder shall modify the equipment as required to enable it to meet the guarantees. In such case, performance and guarantee tests shall be repeated within one month, from the date the equipment is ready for re-tests and all cost for modifications including labour, materials and the cost of additional testing to prove that the equipment meets the guarantees, shall be borne by the Successful bidder.



Duration of performance guarantee tests will be of one month of which 6 (six) days continuous on load operation is the minimum requirement and in case it fails, the process of performance guarantee tests will be repeated.

10.3.6 In addition to other tests, the specific tests to be conducted on equipment have been brought out in the technical specifications.

10.3.7 Performance and guarantee test shall make allowance for instrumentation errors as may be decided by the engineer-in-charge.

#### **10.4 TEST CODES**

The provisions outlined in the ASME performance test codes or other international and Indian approved equivalents shall generally be used as a guide for all the above test procedures unless otherwise specified in the technical specifications.

#### **10.5 TAKING OVER**

Upon successful completion of all the tests to be performed at site on equipment furnished and erected by the contractor, the engineer shall issue a taking over certificate to the contractor as a proof of the final acceptance of the equipment. Such certificate shall not unreasonably be withheld nor will be engineer delay the issuance thereof, on account of minor omissions or defects which do not affect the commercial operation and/or cause any serious risk to the equipment. Such certificate shall not relieve the contractor of any of his obligations which otherwise survive, by the terms and conditions of the contract after issuance of such certificate.

#### **11.0 PACKING**

All the equipment shall be suitably protected, coated, covered or boxed and crated to prevent damage or deterioration during transit, handling and storage at site till the time of erection.. The Successful Bidder shall be responsible for any loss or damage during transportation, handling and storage due to improper packing.

The Successful Bidder shall prepare detailed packing list of all packages and containers, bundles and loose material forming each and every consignment dispatched to site. The Successful Bidder shall further be responsible for making all necessary arrangements for loading, unloading and other handling right from his works up to the site

#### **12.0 GUARANTEE**

- 1) The successful bidder shall warrant that the equipment will be new and in accordance with the contract documents and be free from defects in material, design, manufacture and workmanship.
- 2) The successful bidder's liability shall be limited to the replacement of any defective parts in the equipment of their own manufacture or those of their sub-contractor (s)/ sub-vendor (s) or replacement of the complete equipment, under normal use and arising solely from faulty design, manufacture, materials, and/or workmanship provided always that such defective parts/ equipment are repairable at the site/ replacing the equipment as a whole without hampering the operation of the plant. Such replaced defective parts/ old equipment shall be returned to the successful bidder unless otherwise arranged.



**13.0 SPARES, CONSUMABLES, TOOLS & TACKLES**

**13.1 COMMISSIONING SPARES**

The successful bidder shall make arrangement for an adequate inventory at site of necessary commissioning spares prior to commissioning of the system/equipment furnished and erected so that any damage or loss during these commissioning activities necessitating the requirements of spares shall not come in the way of timely completion of the works under the contract.

**13.2 SPECIAL TOOLS AND TACKLES**

The Successful Bidder shall supply with the equipment one complete set of all special tools and tackles for the erection, assembly, dis-assembly and maintenance of the equipment. However, these tools and tackles shall be separately packed and brought on to site.

**13.3 FIRST FILL OF CONSUMABLE, OILS AND LUBRICANTS**

All the first fill of consumable such as oils, lubricants and essential chemicals etc., which will be required to put the equipment covered under the scope of the specifications, into successful trial operation, shall be furnished by the Successful Bidder

**13.4 LONG TERM AVAILABILITY OF SPARES**

The Successful Bidder shall guarantee the long term availability of spares to the owner for the full life of the equipments. The Successful Bidder shall guarantee that before going out of production of spare parts of the equipment he shall give the owner at least twelve (12) months advance notice so that the latter may order his bulk requirement of spares, if he so desires. The same provision will also be applicable to sub-vendors of successful bidder. Further, in case of discontinuance of manufacture of any spares by the Successful Bidder or his sub- vendors the Successful Bidder will provide the owner two years in advance, with full manufacturing drawings, material specifications and technical information required by the owner for the purpose of manufacture of such items.

Further, in case of discontinuance of supply of spares by the Successful Bidder or his sub-vendors the Successful Bidder will provide the owner with full information for replacement of such spares with other equivalent makes, if so required by the owner.

The Successful Bidder shall provide the owner with a "directory" of his sub-vendors giving the addresses and other particulars of his sub-contractors. The owner, if he so desires, shall have the right to procure the spares directly from sub-contractors.

Notwithstanding anything stated elsewhere in the bid documents, the prices of all spares will be generally in accordance with the mutually agreed prices.

The Successful Bidder will indicate in advance the delivery period of the items of spares, which the owner may procure. In case of emergency requirements of spares, the Successful Bidder would make every effort to expedite the manufacture and delivery of such spares on the basis of mutually agreed time schedule.



The procedure specified above shall apply for future procurement of items included in stand by spare list, mandatory spares lists, optional spares list and special tools, plants and equipment list, if any, specified in the bid documents.

The Successful Bidder shall indemnify the owner for the availability of long time spares as per the terms and conditions laid down above.

In case of equipment/ system (including manufactured domestic and overseas) the availability of spare parts for 10 years shall have to be guaranteed by the Successful Bidder. In this regard, the Successful Bidder will have to provide, an undertaking regarding supply of spare parts and maintenance support as and when required.

#### **14.0 DRAWINGS & DOCUMENTS**

##### **14.1 DRAWING APPROVAL**

14.1.1 All drawings submitted by the Successful bidder including those submitted at the time of bid shall be sufficiently detailed to indicate the type, size, arrangement, weight of each component, break-up for packing and shipment, the external-connections, fixing arrangements required, the dimensions required for installation and inter-connections with other equipment and materials, clearances and spaces required between various portions of equipment and any other information specifically mentioned in the specifications.

14.1.2 Each drawing submitted by the successful bidder shall have Title Block approved by the Purchaser (shall be provided to successful bidder) indicating the name of the **Employer, Purchaser, Name of the project, Title, Drawing No. etc.** If standard catalogue pages are submitted the applicable items shall be indicated therein. All titles, noting, markings and writings on the drawing shall be in English. All the dimensions should be in metric units.

14.1.3 Drawings shall be submitted for approval in AutoCAD format in CD's along with six copies of hard copies.

14.1.4 Copies of drawings returned to the Successful bidder will be in the form of a print /softcopy with the Employer's marking, or a print made from a CD's for computer base.

14.1.5 The drawings submitted by the Successful bidder shall be reviewed by the HEC's/NCL's/Consultant's Engineer and/or his duly authorized representative and shall be modified by the Successful bidder if any modifications and / or corrections are required by the HEC's/NCL's/Consultant's Engineer and/or his duly authorized representative. The Successful bidder shall incorporate such modifications and/or corrections and submit the final drawings for approval. Any delay arising out of failure by the Successful bidder to rectify the drawings in good time shall not alter the contract completion date.

##### **14.2 APPROVAL BY THE NODAL OFFICER OR HIS NOMINEE:**

14.2.1 The successful bidder shall submit specifications and drawings to HEC's/NCL's/Consultant's Engineer in charge or his nominee who is to approve them if they comply with the specifications and drawings. The Successful bidder shall be responsible for the Design & Performance of items/equipment.





- 14.2.2 The HEC's/NCL's/Consultant's Engineer and/or his duly authorized representative's approval shall not alter the Successful bidder's responsibilities for the Design & Performance of items/equipment.
- 14.2.3 All the drawings shall be prepared in accordance with the provisions of latest standards. All drawings shall comply with current Indian Standard specifications and shall be sufficiently detailed with dimensions and shall be clear and legible.
- 14.2.4 If the drawing is "Approved" then one set shall be returned back to the successful bidder duly stamped "Approved". If the drawing is "Not Approved" or "Approved as Noted" then one stamped print or softcopy with Appropriate Comments shall be returned back to the Successful bidder for incorporation of comments and resubmission of revised drawings for Approval.
- 14.2.5 After completion of the works the Successful bidder shall replace old drawings by As built drawing after incorporating all corrections from the site under the direction of the HEC's/NCL's/Consultant's Engineer and/or his duly authorized representative.
- 14.2.6 Further work by the Successful bidder shall be in strict accordance with these drawings and no deviation shall be permitted without the written approval of the HEC's/NCL's/Consultant's Engineer and/or his duly authorized representative, if so required.
- 14.2.7 All manufacturing and fabrication work in connection with the equipment prior to the approval of the drawings shall be at the Successful bidder's risk. The Successful bidder may make any changes in the design which are necessary to make the equipment conform, to the provisions and intent of the contract and such changes will again be subject to approval by the HEC's/NCL's/Consultant's Engineer In charge and/or his duly authorized representative. Approval of Successful bidder's drawings or work by the HEC's/NCL's/ Consultant's Engineer In charge and/or his duly authorized representative shall not relieve the Successful bidder of any of his responsibilities and liabilities under the contract.
- 14.2.8 Drawings shall include all installation and detailed piping drawings wherever applicable. All piping 100 mm and larger shall be routed in detail and smaller pipe shall be shown schematically or by isometric drawings. All drawings shall be fully corrected to agree with actual as built construction.
- 14.2.9 All Electrical drawing shall include electrical schematic diagram, Equipment & cable layout, Inter connection diagram, cable schedule, detail bill of material, GA Drawing with BOM and circuit diagram of control panel, cable & motor selection calculation.

### **14.3 OPERATING AND MAINTENANCE MANUALS**

"As built" drawings and/ or operating and Maintenance manuals required shall be supplied by the Successful bidder by the dates stated in the contract data. If the Successful bidder does not supply the drawings and / or manuals by the dates stated in the contract data, or they do not receive the Nodal Officer or his Nominee's approval, the Nodal Officer or his Nominee shall withhold the amount stated in the contract data from payments due to the Successful bidder.





#### **14.4 INSTRUCTION MANUALS**

- 14.4.1 The Successful bidder shall submit to the HEC's/NCL's/Consultant's Engineer In charge and/or his duly authorized representative, preliminary instruction manuals for all the equipment, covered under the contract within the time agreed upon between the Purchaser & the Successful bidder. The final instruction manuals complete in all respects shall be submitted by the Successful bidder thirty (30) days before the first shipment of the equipment. The instruction manuals shall contain full details and drawings of all the equipment furnished, the erection procedures, testing procedures, operation and maintenance procedures of the equipment. These instruction manuals shall be submitted in the form of two (2) reproducible original and five (5) copies.
- 14.4.2 If after the commissioning and initial operation of the plant, the instruction manuals require any modifications/ additions/changes, the same shall be incorporated and the updated final instruction manuals in the form of two (2) reproducible original and five(5) copies shall be submitted by the Successful bidder to the Purchaser.
- 14.4.3 The Successful bidder shall furnish to the Employer, ten (10) sets of spare parts catalogue.
- 14.4.4 In addition, the Successful bidder shall supply three (3) sets of all the documents, specifications and as built drawings in CDs. The documents supplied shall be in easily readable, search & printable format.
- 14.4.5 The Successful bidder has to carry out the work in such a manner that it does not affect the operation of the Plant/Shop. If other Successful bidders are also engaged in the same work site for other jobs, the Successful bidder will work with them in a co-ordination manner.

#### **14.6 DRAWINGS/DOCUMENTS/DATA TO BE FURNISHED ALONGWITH OFFER & AFTER PLACEMENT OF ORDER**

The following Information/documents are to be submitted by the Supplier for approval:

- a) Time bar chart of delivery showing break up of time required for raw material procurement engineering, various shop activities order placement for bought out items and their delivery to shop assembly, testing inspection and dispatch.
- b) General arrangement drawing for the equipment/system including sections and details giving relevant Information, binding dimension etc.
- c) G.A drawing & BOQ of transformer.
- d) Name plate details.
- e) Termination plan and interconnection.
- f) Control schematic diagram, alarm & annunciation and interlock scheme.
- g) Internal wiring diagram for all panels and termination diagram.
- h) Quality assurance plan.
- i) Inspection/test Certificates and Guarantee Certificate for the main equipment, component and raw material as applicable.



- j) Inspection manual and “Operation & Maintenance Manual” during delivery of equipment/ spares (Draft document to be furnished for NCL / Consultant’s approval).
- k) Overall dimensions & weight of bigger & heavier component.
- l) Make/Model of equipment parts/component.
- m) Catalogue/ Leaflets for all equipment including brought out items.
- n) Any other document as applicable.

**15.0 DESIGN CO-ORDINATION**

The Successful Bidder shall be responsible for the selection and design of appropriate equipment to provide the best coordinated performance of the entire system. The basic design requirements are detailed out in Technical Specifications. The design of various components, sub-assemblies and assemblies shall be so done, so that it facilitates easy field assembly and maintenance. All the rotating components shall be so selected that the natural frequency of the complete unit is not critical at or close to the operating range of the unit.

**16.0 DESIGN CO-ORDINATION MEETING:**

The successful Bidder will be called upon to attend design co-ordination meetings with the engineer, other Successful Bidders and the consultants of the owner during the period of contract. The Successful Bidder shall attend such meetings at his own cost at or at mutually agreed venue as and when required and fully co-operate with such persons and agencies involved during those discussions.

**17.0 TRAINING OF OWNER'S PERSONNEL:**

The Successful Bidder shall undertake to train free of cost, engineering personnel selected and sent by the owner at the works of the Successful Bidder unless otherwise specified in the technical specifications. The period and the nature of training for the individual personnel shall be agreed upon mutually between the Successful Bidder and the owner. These engineering personnel shall be given special training in the shops, where the equipment will be manufactured and/or their collaborator's works and where possible, in any other plant where equipment manufactured by the Successful Bidder or his collaborator is under installation or test, to enable those personnel to become familiar with the equipment being furnished by the Successful Bidder.

All travelling and living expenses for the engineering personnel to be trained during the total period of training will be borne by the owner. These engineering personnel while undergoing training shall be responsible to the Successful Bidder for discipline.

In the event of the owner, for any reason, failing to avail of the training facilities, he shall not be entitled for any rebate whatsoever on this account.



***EQUIPMENT SPECIFICATION  
FOR  
100 KVA OIL IMMERSED LIGHTING TRANSFORMER***

**1.0 SCOPE**

- 1.1 This specification covers the requirements for two (2) nos. of winding indoor type lighting transformer protected by Vacuum Circuit Breaker and fitted with tap changer. The voltage ratio and kVA rating of the transformer has been specified in Technical Parameters later with this specification.
- 1.2 The transformers shall comply with the latest revisions of IS: 2026 and IEC: 76 except where modified or extended by the provisions of this specification and with the relevant parts of standards mentioned in para 3.0.
- 1.3 The successful tenderer shall furnish all, but not limited to, the equipments, materials and accessories and services specified herein to complete this work. The work shall have to be completed and operative in all details.
- 1.4 Any material, component or accessory not specifically stated in this specification but incidental to or necessary for complete installation and trouble free operation shall be deemed to be included in the scope of the tenderer without any additional charge to the purchaser.

**2.0 GENERAL INFORMATION**

- 2.1 The successful tenderer shall supply and / or erect the addition or modification as will be agreed upon in writing after mutual discussion.
- 2.2 The equipment to be furnished under this specification shall be packaged for shipment so as to meet the space and weight limitations to transport facilities, right upto destination.

**3.0 STANDARDS**

- 3.1 The equipment and materials to be furnished shall be designed, manufactured and tested in accordance with the latest revisions of the IndianStandards (IS). Where Indian standards are not available International standards like British Standards (BS), ISO, DIN, JIS or Other standards and International Electro-Technical Commission (IEC) publications unlessotherwise stated, which ensures performance equivalent or superior to Indianstandard shall be followed.
- 3.2 The equipment conforming to any other national standard which ensures equivalent quality is also acceptable. In such cases the tenderers shall clearly indicate the standards adopted and furnish a copy of the English Version of the Standard along with the tender.
- 3.3 The equipment covered under these specifications shall comply with all the latest applicable statutory rules, regulations, acts and safety codes which may be in force during the period of execution and which are related with design, construction and operation of equipment in the locality where the equipment is to be installed.
- 3.4 The electrical installation shall meet the requirement of Indian Electricity Act1910 and Indian Electricity Rules, 1956 as amended up-to-date, Mines Rules and Regulations (latest revision) and also the applicable section of the latestrevision of the relevant IS code of practice.



- 3.5 Nothing in these specifications shall be construed as to relieve the supplier of the responsibility for correctness of the design and construction of the equipment. All the standards being followed shall be listed out in the bid. Where any foreign standard is being followed, the copy of the same shall be provided with the bid.
- 3.6 Wherever service conditions and requirements laid down in these specifications differ from applicable standards, the conditions specified herein shall prevail.
- 3.7 In addition, any relevant regulations applicable to the work shall be followed. In case of any discrepancy, the decision of purchaser will be final.

**4.0 SERVICE CONDITION**

- Ambient air temperature : 4°C to 50°C
- Altitude : Maximum upto 1000 M above MSL.
- Relative Humidity : 100%.
- Pollution degree : Degree 4 as per IS : 13947 (Part I)  
(i.e. the pollution generates persistent conductivity caused by conductive dust)

**5.0 OPERATING CONDITIONS**

|                        |                      |                       |
|------------------------|----------------------|-----------------------|
| Nominal system Voltage | 415 V ( $\pm 10\%$ ) | 6.6 kV ( $\pm 10\%$ ) |
| Supply Frequency       | 50 Hz ( $\pm 3\%$ )  | 50 Hz ( $\pm 3\%$ )   |
| Highest Fault Level    | 31 MVA               | 250 MVA               |
| System earthing        | Solid earthed        | Restricted earthed    |

**6.0 INSPECTION**

- 6.1 The manufacturer shall carry out a comprehensive inspection and testing program during manufacture for all bought out items and also workmanship during this stage. The manufacturer shall submit the inspection program at least four weeks prior to the purchaser.
- 6.2 The manufacturer shall carry out all standard routine tests in accordance with relevant IS. The manufacturer shall also carry out type tests in accordance with relevant IS on one piece of one rating. While the routine tests shall be carried out at manufacturer's works under prior information to purchaser, the type test certificates from reputed test houses shall be submitted for purchaser's approval giving details of each test and evaluation of test data.
- 6.3 Tests which are common to both type and routine tests may be covered under routine test in the presence of purchaser's representative, if required.

**7.0 TEST CERTIFICATE**

The equipment covered under these specifications shall be Type tested in accordance with relevant codes. The bidder shall supply the routine test certificates at the time of execution from the manufacturer indicating the type of tests conducted and the test results in accordance with relevant codes.



**8.0 SPECIFICATION FOR 100KVA OIL IMMERSSED LIGHTING TRANSFORMER**

**8.1 SCOPE**

This specification covers the requirements for two (2) nos. of winding indoor type lighting transformer protected by Vacuum Circuit Breaker and fitted with tap changer. The voltage ratio and kVA rating of the transformer has been specified in Technical Parameters later with this specification.

The transformers shall comply with the latest revisions of IS: 2026 and IEC: 76 except where modified or extended by the provisions of this specification and with the relevant parts of standards mentioned in para 8.2.

**8.2 OTHER RELEVANT STANDARDS**

The other relevant standards that are applicable are as under:

- IS : 10561 : Application guide for power transformers.
- IS : 10028 : Code of practice for selection, installation and maintenance of transformers.
- IS : 1866 : Code of practice for maintenance and supervision of mineral insulating oil.
- IS : 2099 : Bushing for alternating voltages above 1000 V.
- IS : 3639 : Fittings and accessories for power transformers.
- IS : 335 : New insulating oil for transformers.
- IIS : 6600 : Guide for loading of oil immersed transformers.
- IS : 2165 : Insulation Co-ordination.
- IS : 2071 : Method of Impulse voltage testing.
- IS : 3043 : Code of practice for earthing.
- IS : 1271 : Thermal evaluation and classification of electrical insulation.
- IS : 1554 : PVC insulated (heavy duty) electric cables - 1100V. (Part -I)
- IS : 7404 : Paper covered copper conductors
- IS : 5 : Colour for ready mix paints.

**8.3 DESIGN FEATURES**

The design of the transformers and accessories shall be in accordance with the latest standard practice and shall be such as to facilitate inspection, cleaning, repairs, maintenance and operation and shall ensure safety operations under situation of sudden variations of loads and voltages as may be required under local operating conditions.

**8.4 ELECTRICAL FEATURES**

The electrical features shall ensure the following:

- a) Continuous operation at rated kVA provided service conditions does not exceed the values given.
- b) Continuous operation at rated kVA within  $\pm 10$  percent variation (combined) of voltage and frequency.
- c) Continuous operation at rated kVA at each of the tap voltages.
- d) Over loading of units as indicated in IS: 6600



e) Temperature rise limited to the following values:

| <b>Cooling</b> | <b>Oil</b> | <b>Winding</b> |
|----------------|------------|----------------|
| ONAN           | 45°C       | 55°C           |

f) The insulation levels shall be uniform and conform to the following values:

| <b>Nominal system voltage</b> | <b>Highest system voltage</b> | <b>Rated lightning impulse withstand voltage</b> | <b>Power frequency voltage 1 minute</b> |
|-------------------------------|-------------------------------|--|---|
| kV rms                        | kV rms                        | kV peak  | kV rms                                  |
| 6.6                           | 7.2                           | 40   | 20                                      |

### 8.5 **MECHANICAL FEATURES**

- a) The transformer shall be able to withstand the electro-dynamic stress due to terminal short circuit of the LV side assuming the HV side fed from an infinite bus. The short circuit withstand duration shall be minimum of 3 sec.
- b) The transformer shall be so designed as to minimize any undue noise and vibration.

### 8.6 **CONSTRUCTIONAL DETAILS**

#### A. **CORE**

- a) The transformer core shall be made as per relevant IS. Lifting eyes and lugs shall be provided on the limbs and coils assembly. Preferably no bolt shall be used in the cores. Clamping shall be done externally to the limb.
- b) Cores and windings shall be capable of withstanding shocks during transport, installation & service and adequate provision shall be made to prevent movement of core and winding relative to tank during these conditions.

#### B. **TANKS**

- a) Tanks shall be of welded construction and fabricated from boiler steel plates.
- b) Tanks stiffeners shall be provided for general rigidity and these shall be designed to prevent retention of water.
- c) The tanks shall be designed to withstand:
  - i) Mechanical shocks during transportation
  - ii) Vacuum filling of oil
  - iii) Short circuit force
- d) Suitable guides shall be provided in the tank for positioning the core and coil assembly.
- e) Each tank shall be provided with
  - i) Lifting lugs suitable for lifting the complete transformer
  - ii) A minimum of four jacking pads to be raised or lowered using hydraulic or screw jacks.



**C. TANK COVER**

- a) At least two adequately sized inspection covers one at each end of the tank shall be provided for easy access to bushings and earth connection. The inspection covers shall have suitable lifting arrangement.
- b) The tank covers shall be fitted with thermometer pockets (in the position of maximum oil temperature) for bulbs of oil and winding temperature indicators. It shall be possible to remove these bulbs without lowering the oil in the tank.
- c) Bushings, inspection covers, thermometer pockets etc. shall be designed to prevent ingress of water into or leakage of oil from the tank.
- d) All bolted connections shall be fitted with weather proof hot oil resistant neoprene gasket in between for complete oil tightness. If gasket is compressible metallic stop shall be provided to prevent over compression.

**D. MOUNTING ARRANGEMENT**

- a) The transformers shall be provided with two nos. bi-directional skids and pulling eyes integral with the tank body for fixing the transformer tank on base frame.
- b) These skids shall be such that the bottom of the tank is at a sufficient height above base frame for cleaning purposes. The transformer shall be provided with uni/bi-directional, flat/flanged rollers of suitable size.

**E. CONSERVATOR TANK**

- a) The conservator tank shall have adequate capacity to accommodate oil preservation system and volumetric expansion of the total cold oil volume in the transformer and radiators for a change in temperature from minimum ambient air temperature of 5°C to 50°C.
- b) The conservator shall be bolted into position so that it can be removed for cleaning purposes.
- c) The conservator tank shall be fitted with a silica-gel filter breather.
- d) The conservator shall be fitted with magnetic oil level gauge with two independent low level electrically insulated alarm and trip contacts. The oil level at 30°C shall be marked on the gauge.

**F. PRESSURE RELIEF DEVICE**

- a) The transformers shall be provided with the single diaphragm type of explosion vent and a pressure relief device of spring loaded type.
- b) An equalizer pipe shall be connected to explosion vent from the conservator.
- c) The pressure relief device shall be of sufficient size for rapid release of any pressure that may be generated in the tank. The device shall operate at a static pressure less than the hydraulic test pressure of transformer tank. Means shall be provided to prevent ingress of rain water. An extension pipe fitted above the device shall direct the major flow of ejected oil downwards and permit its removal without disturbing the device.





G. **EXPLOSION VENT**

- i) The transformers shall be provided with the single diaphragm type of explosion vent with air release device.
- ii) An equalizer pipe shall be connected to explosion vent from the conservator.

H. **TEMPERATURE INDICATOR**

a) **OIL TEMPERATURE INDICATOR (OTI)**

The transformer shall be provided with a 150 mm dial type thermometer for top oil temperature indication. The thermometer shall have adjustable, potential free alarm and trip contacts, maximum reading pointer and resetting device and shall be mounted in the marshaling box. A temperature sensing element suitably located in a pocket in the top oil shall be furnished. This shall be connected to the OTI by means of capacity tubing. Accuracy class of OTI shall be 2°C or better. The OTI shall have full scale deflection of at least 240°C and shall have linear graduation to read every 2°C.

b) **WINDING TEMPERATURE INDICATOR (WTI)**

A device for measuring the hot spot temperature of the winding shall be provided. The accuracy class of winding temperature indicator shall be  $\pm 2^\circ\text{C}$  or better. It shall comprise the following:

- i) Temperature sensing element.
- ii) Image coil and bushing current transformer.
- iii) Auxiliary CTs if required to match the image coil, shall be furnished and mounted in the marshaling box.
- iv) 150 mm local indicating instrument with max. reading pointer mounted in marshaling box. It shall have two adjustable potential free contacts, one for winding temp. high alarm and one for trip, in addition to the contacts required for control of cooling equipment.
- v) Automatic ambient temperature compensation.
- vi) All contacts shall be adjustable on a scale and suitable for connection in 240V circuit. These shall be accessible on removal of the cover.
- vii) The WTI shall have a full scale deflection of at least 240°C and shall have linear graduations to read every 2°C.

I. **WINDING**

- a) The conductors shall be of electrolytic grade copper.
- b) All windings shall be fully insulated.
- c) The insulation of transformer windings and connections shall be as per relevant IS.
- d) The maximum fault level to which the transformers may be subjected is 750MVA for 33 kV, 250 MVA for 6.6 kV and 150 MVA for 3.3 kV.
- e) All bus bars and leads shall be adequately supported in insulated cleats or frames from the clamping structure.
- f) The studs, set screws or bolts provided for securing cleats or frames shall be effectively locked.
- g) Bus bars and leads shall be supported throughout their length to ensure they will not move under normal service or transport or be forced from the prescribed position during any short circuit.



**J. INSULATION MATERIALS**

a) Class 'A' insulating materials specified in IS: 1271 or latest version shall be used.

**b) INSULATING OIL**

- i) The insulating oil supplied with the transformer shall conform to the requirements of IS: 335. No inhibitors shall be used in the oil.
- ii) The oil for the transformer shall conform to the requirements of IS: 1866.
- iii) Ten percent (10%) extra oil shall be supplied for topping up, in non-returnable sealed containers suitable for outdoor storage.
- iv) Supply of insulating oil is in the scope of the tenderer.

**K. EARTHING TERMINAL**

Two numbers suitable earthing terminals shall be provided at positions close to the two diagonally opposite bottom corners of tank. Two earthing terminals shall also be provided on marshaling box and any other equipment mounted separately.

**L. OIL PRESERVATION SYSTEM**

- a) The transformers shall be provided with conservator preservation system. The top of the conservator shall be fitted with a silica gel filter breather. It shall be so designed that:
  - i) Passage of air is through dust filter and silica gel.
  - ii) Silica gel is isolated from atmosphere by an oil seal.
- b) The Transformers shall be provided with diaphragm sealing type oil preservation system. The rubber diaphragm shall be suitably sized to accommodate total change in the oil volume from minimum ambient temperature (5°C) to 110°C. The diaphragm shall withstand full vacuum intake.

**M. TERMINAL ARRANGEMENT**

**a) PORCELAIN BUSHING (WHEREVER APPLICABLE)**

- i) The minimum clearances in air between the phases and between the phase and earth potential of the porcelain bushings shall be in accordance with IS: 2026 - part V, 1994.
- ii) Bushing terminals shall be provided with suitable terminal connectors of approved type and size for ACSR/aluminum tubular conductors as specified in the annexure.
- iii) All transformer bushings shall be of solid porcelain with rain sheds conforming to IS:8603.
- iv) The removal of bushing shall be possible without disturbing the current transformers, secondary terminals and connectors or pipe work.

**b) CABLE BOXES AND DISCONNECTING CHAMBERS**

- i) Wherever cable connections are specified, suitable air insulated type cable boxes of sufficient sizes shall be provided to accommodate cable termination. Cable boxes shall be designed and installed such that it shall be possible to move away the transformer without disturbing the cable termination leaving the cable box on external supports. The support for the cable box shall be of galvanized iron.



- ii) Cable boxes shall have terminal connectors of adequate size and bolt holes to receive cable lugs.
- iii) The transformer cable box shall be provided with two numbers earthing terminals.
- iv) All necessary cable terminating accessories such as supporting brackets, power cable lugs, hard ware etc. shall be provided by the bidder.
- v) Cable boxes shall have removable top cover and ample clearance shall be provided to enable either transformer or each cable to be subjected separately to high voltage test.
- vi) Cable boxes shall have degree of protection of IP-52 as per IS: 2147.
- vii) Cable box shall be suitable for termination of HT cable of size 2X3X150 Sq. MM with HT termination Kit.

**N. TERMINAL MARKING**

The terminal marking and their physical position shall be in accordance with IS: 2026.

**O. OFF LOAD TAP CHANGE SWITCH**

- a) The tap change switch shall be three phase, hand operated, for simultaneous switching of similar taps on the three phases by operating an-external handle.
- b) Arrangement shall be made for securing and pad locking the tap changer in each of the working positions, and it shall not be possible for setting or padlocking in any intermediate position. An indicating device shall be provided to show tap in use.
- c) The cranking device for manual operation shall be removable and suitable for operation by a man standing on ground level. The mechanism shall be complete with the following:
  - i) Mechanical operation indicator.
  - ii) Mechanical tap position indicator which shall be clearly visible from the transformer.
  - iii) Mechanical stops to prevent over cranking of the mechanism beyond extreme tap position.
  - iv) The manual operating mechanism shall be labeled to show the direction of operation for raising the secondary voltage and vice versa.
  - v) A warning plate, indicating "The switch shall be operated only when the transformer has been de-energized", shall be fitted.

**P. RADIATOR**

The radiators shall be detachable type, mounted on the tank. Each radiator shall be provided with the following:

- a) A drain valve at the bottom.
- b) An air release plug at the top.
- c) Shut off valve at each point of connection to the tank. The location and configuration of radiators shall be subject to purchaser's approval.

**Q. MARSHALING BOX (WHEREEVER APPLICABLE)**

- a) A sheet steel weather, vermin and dust proof marshaling box shall be provided with each transformer to accommodate:
  - i) Temperature indicators
  - ii) Terminal blocks for incoming and outgoing cables



- b) The sheet steel used shall be at least 2.0 mm thick. The box shall be free standing floor mounted type and have a sloping roof. The degree of protection shall be IP 53 in accordance with IS: 2147.
- c) All cables shall enter the kiosk from the bottom and the gland plate shall not be less than 450 mm from the base of the box. The gland plate and the associated compartment shall be sealed in suitable manner to prevent the ingress of moisture, rodents, insects etc. from the cable trench. Gland plates, cable lugs, cable glands, etc. shall be provided and installed by the bidder.
- d) The marshaling box shall be supplied with space heater and cubicle lighting with ON-OFF switches and associated fuses.
- e) The gland plate shall be made into two detachable halves, for facilitating termination of incoming and outgoing cables separately.

**R. PAINTING**

The transformer shall be painted with oil and weather resistant non fading paint as per IS: 5. Primary paint shall be as per IS: 104 and intermediate and final coats of paint shall be as per IS: 2932.

**S. BOLTS AND NUTS**

All bolts and nuts exposed to weather shall be of hot dip galvanized or cadmium plate or zinc passivated steel. All bolts, nuts and washers in contact with non-ferrous part which carry current shall be of phosphor bronze.

**T. CONTROL WIRING**

- a) All controls, alarms, indicating and relaying devices provided with the transformer shall be wired by the bidder up to the terminal blocks inside the marshaling box. The bidder shall supply and install the required 1100 V grade heavy duty PVC insulated, steel wire armoured, PVC sheathed, multi core cables with copper conductors conforming to IS: 1554. The cables shall be properly supported.
- b) All devices and terminal blocks within the marshaling box shall be clearly identified by symbols corresponding to those used on applicable schematic or wiring diagrams.
- c) Not more than two (2) wires shall be connected to one terminal. At least 20% spare terminals shall be provided. Each terminal shall be suitable for connecting two numbers of stranded copper conductors from each side.
- d) Terminal blocks for CT secondary shall have shorting facility.

**U. FITTINGS**

The following fittings shall be provided with all the transformers:

- a) Rating and diagram plate.
- b) Terminal marking plate.
- c) Two earthing terminals.
- d) Lifting lugs.
- e) Jacking lugs.
- f) Drain valve with plug 50mm.
- g) Dehydrating breather.



- h) Plain oil level indicator with minimum marking.
- i) Magnetic oil level indicator with two electrical contacts, one for alarm and other for tripping.
- j) Thermometer pocket.
- k) Marshaling box.
- l) Off load tap changing switch.
- m) Oil filling hole with cover.
- n) Conservator.
- o) Air release device and explosion vent.
- p) Oil temperature indicator with one electrical contact for alarm.
- q) Winding temperature indicator with one electrical contact for trip and additional contact for switching on cooler fans.
- r) Skids and pulling eyes on both sides.
- s) Rollers -Flanged bi-directional 1435 mm.
- t) Bushings with metal parts and gaskets.
- u) Filter valve at the top of the transformer tank.
- v) Inspection cover.

**8.7**

**PERFORMANCE**

**a) OPERATING CONDITIONS**

- i) The transformers shall be capable of being loaded in accordance with IS:6600 up-to load of 150%. There shall be no limitation imposed by bushings, tap changer etc.
- ii) The transformers shall be capable of being operated continuously without danger on any tapping at the rated KVA with voltage variation of  $\pm 10\%$  corresponding to the voltage of the tapping.

**b) FAULT CONDITIONS**

- i) Transformers shall accept, without injurious heating, combined voltage and frequency fluctuations which produce on over condition of 120% for one (1) minute. Bidder shall indicate 150% over voltage.
- ii) Noise level when energized at normal voltage and frequency with all auxiliary equipment running shall not exceed, when measured under standard conditions, the value specified in NEMA standard publication TR-1.

**c) IMPEDANCE**

The impedance on principal tapping shall be guaranteed to be as indicated in below mentioned Technical Parameter.

**8.8**

**TECHNICAL PARAMETERS:**

|   |                     |                             |
|---|---------------------|-----------------------------|
| 1 | Rated Capacity      | 100 kVA                     |
| 2 | Quantity            | 2 Nos.                      |
| 3 | Type of transformer | Core type oil immersed      |
| 4 | Number of phases    | 3                           |
| 5 | Frequency           | 50 Hz $\pm 3\%$ , $\pm 5\%$ |
| 6 | Location            | Indoor                      |
| 7 | Type of cooling     | ONAN                        |
| 8 | Type of oil         | Mineral oil                 |

**HEAVY ENGINEERING CORPORATION LIMITED****PROJECT DIVISION**

|    |   |   |
|----|---|---|
| 9  | Rated capacity at the main tappings   | Rated kVA as at sl no.1                               |
| 10 | <b>Rated Voltage</b>  |   |
|    | HV Winding  | 6600 Volts $\pm$ 10%                                  |
|    | LV Winding  | 230 Volts $\pm$ 10%                                   |
| 11 | <b>Highest system voltage</b>   |   |
|    | HV Winding  | 7200 Volts  |
|    | LV Winding  | 250 Volts   |
| 12 | Impedance voltage at rated current  | AS per IS   |
| 13 | <b>Method of system earthing</b>  |   |
|    | HV Winding  | Nil   |
|    | LV Winding  | Unearthed   |
| 14 | <b>Rated Insulation level</b>   |   |
|    | One minute power frequency withstand voltage  | 20 kV rms for 6.6 kV                                  |
|    | Switching impulse withstand test voltage with standard full wave for windings 1/50 microseconds | 40 kV peak for 6.6kV                                  |
|    | Lightning withstand test voltage with standard full wave for winding for 1.2/50 microseconds    | 40 kV peak for 6.6 kV                                 |
| 15 | Tap changer type  | Off circuit   |
| 16 | Tapping Percentage  | $\pm$ 2.5%, $\pm$ 5%, $\pm$ 7.5%, $\pm$ 10% (9 Steps) |
| 17 | <b>Terminal Arrangement</b>   |   |
|    | a) HV side  | Cable box to suit armoured cable/ Bushing             |
|    | b) LV side  | Cable box to suit armoured cable                      |
| 18 | a) Temperature rise (over Ambient) in Oil   | 45°C  |
|    | b) Temperature rise (over Ambient) in Winding   | 55°C  |
| 19 | Type of Winding   | Double wound copper                                   |
| 20 | Standard applicable for transformer   | IS : 2026 (Current)                                   |
| 21 | Standard applicable for oil used  | IS : 335 (Current)                                    |



TECHNICAL DATA SHEET

| SL. NO. | PARAMETERS OF TRANSFORMERS                        | DESCRIPTION |
|---------|---|-------------|
| 1       | Name of the Manufacturer                          |             |
| 2       | Service   |             |
| 3       | <b>Rating</b>                                     |             |
|         | (a) Rated KVA                                     |             |
|         | (b) Rated Voltage of HV                           |             |
|         | (c) Rated Voltage of LV                           |             |
|         | (d) Temperature rise in Oil                       |             |
|         | (e) Temperature rise by resistance of windings    |             |
| 4       | Number of phases                                  |             |
| 5       | <b>Connections</b>                                |             |
|         | (a) High Voltage                                  |             |
|         | (b) Low Voltage                                   |             |
|         | (c) Vector Group Reference                        |             |
| 6       | <b>Tappings</b>                                   |             |
|         | (a) High Voltage                                  |             |
| 7       | No-load loss at rated voltage & frequency         |             |
| 8       | Load loss at rated current & frequency at 75°C    |             |
| 9       | Impedance at rated current & frequency at 75°C    |             |
| 10      | Reactance at rated current & frequency            |             |
| 11      | <b>Efficiencies at 75°C at Unity Power Factor</b> |             |
|         | (a) At full load                                  |             |
|         | (b) At $\frac{3}{4}$ full load                    |             |
|         | (c) At $\frac{1}{2}$ full load                    |             |
| 12      | <b>Regulation at full load at 75°C At U P F</b>   |             |
|         | (a) At Unity Power Factor                         |             |
|         | (b) At 0.8 power factor lagging                   |             |
| 13      | No-load current at rated voltage & frequency      |             |
| 14      | <b>Approx. weights</b>                            |             |
|         | (a) Core & windings                               |             |
|         | (b) Tank & fittings                               |             |
|         | (c) Oil   |             |
|         | (d) Total weight                                  |             |
| 15      | Approximate capacity of oil                       |             |
| 16      | <b>Approx. overall dimension</b>                  |             |
|         | (a) Length  |             |
|         | (b) Breadth                                       |             |
|         | (c) Height  |             |
| 17      | <b>Terminal Arrangement</b>                       |             |
|         | (a) High Voltage                                  |             |
|         | (b) Low voltage                                   |             |



**HEAVY ENGINEERING CORPORATION LIMITED****PROJECT DIVISION**

| <b>SL. NO.</b> | <b>PARAMETERS OF TRANSFORMERS</b>                              | <b>DESCRIPTION</b> |
|----------------|--|--------------------|
| 18             | Reference standard   |                    |
| 19             | Remarks  |                    |
| <b>SL. NO.</b> | <b>ADDITIONAL TECHNICAL PARTICULARS</b>                        | <b>DESCRIPTION</b> |
| 1.             | <b>Efficiencies at 75°C at 0.8 Power Factor lagging</b>        |                    |
|                | (a) At full load   |                    |
|                | (b) At $\frac{3}{4}$ load                                      |                    |
|                | (c) At $\frac{1}{2}$ load                                      |                    |
| 2.             | Load at which maximum efficiency occurs                        |                    |
| 3.             | Maximum efficiency   |                    |
| 4.             | Impulse level with 1/50 micro second                           |                    |
| 5.             | <b>Type of windings</b>  |                    |
|                | (a) High Voltage   |                    |
|                | (b) Low Voltage  |                    |
| 6.             | <b>Insulation Material</b>                                     |                    |
|                | (a) Turn insulation high voltage                               |                    |
|                | (b) Turn insulation Low voltage                                |                    |
|                | (c) Insulation core to low voltage                             |                    |
|                | (d) Insulation high voltage to low voltage                     |                    |
| 7.             | <b>Clearances</b>  |                    |
|                | (a) In oil   |                    |
|                | (b) Out of oil   |                    |
|                | (c) Minimum clearance high voltage to tank in oil              |                    |
| 8.             | <b>Details of Tank</b>   |                    |
|                | (a) Approx. thickness of sides                                 |                    |
|                | (b) Approx. thickness of bottom                                |                    |
|                | (c) Approx. thickness of cover                                 |                    |
|                | (d) Approx. thickness of tube radiators                        |                    |
| 9.             | Minimum clearance height for lifting core & windings from tank |                    |
| 10.            | <b>Shipping Details</b>  |                    |
|                | (a) Parts detached for transport                               |                    |
|                | (b) Approx. dimensions of largest package                      |                    |
|                | (i) Length   |                    |
|                | (ii) Breadth   |                    |
|                | (iii) Height   |                    |

**HEAVY ENGINEERING CORPORATION LIMITED****PROJECT DIVISION**

| SL. NO.                            | ADDITIONAL TECHNICAL PARTICULARS                                       | DESCRIPTION |
|------------------------------------|--|-------------|
| 11.                                | <b>(c) Details of Bushing</b>  |             |
|                                    | (i) Type   |             |
|                                    | (ii) Momentary power frequency dry withstand voltage                   |             |
|                                    | (iii) Visible power frequency discharge voltage                        |             |
|                                    | (iv) One minute dry withstand power frequency voltage                  |             |
|                                    | (v) One minute withstand power frequency voltage                       |             |
|                                    | (vi) Under oil flashover or puncture withstand power frequency voltage |             |
|                                    | (vii) Full wave withstand impulse voltage                              |             |
|                                    | (viii) Under oil flashover or puncture withstand impulse voltage       |             |
|                                    | (ix) Creeping distance in air  |             |
|                                    | (x) Recommended gap setting  |             |
|                                    | (xi) Weight of assembled bushing                                       |             |
| 12.                                | <b>Details of off-load tap changing gear</b>                           |             |
|                                    | (i) Make   |             |
|                                    | (ii) Type  |             |
|                                    | (iii) Rating   |             |
|                                    | (a) Rated Voltage  |             |
|                                    | (b) Rated Current  |             |
|                                    | (c) Step Voltage   |             |
|                                    | (d) Number of steps  |             |
|                                    | (iv) Control   |             |
|                                    | (v) Auxiliary supply details   |             |
|                                    | (vi) Voltage control   |             |
|                                    | (vii) Line drop compensation   |             |
|                                    | (viii) Parallel operation  |             |
| (ix) Protective devices            |  |             |
| (x) Approx. over weight            |  |             |
| (xi) Approx. over dimensions       |  |             |
| (xii) Approx. over quantity of oil |  |             |
| 13.                                | Type & Grade of Insulating Oil   |             |
| 14.                                | Distance between wheels  |             |



**ANNEXURE-3**

**DEVIATION FROM DOCUMENTS**

Purchaser desires that the tenderer shall quote as per the conditions specified in the tender document. However, if the tenderer desires to deviate from tender document clauses, he should furnish the information in the format given below.

| Sl. No. | Page No. | Clause No. | Tenderer's Deviation | Reason for Deviation |
|---------|----------|------------|----------------------|----------------------|
|         |          |            |                      |                      |

The tenderer here by certifies that the above mentioned are the only deviations from the commercial term & conditions and technical specification of the tender document.

Date:

Signature: .....

Company seal:

Designation: .....

Company: .....



**QUESTIONNAIRE TO BE FILLED IN AND  
SUBMITTED WITH THE OFFER**

- i) Tenderer's Name and Address.
- ii) Quotation No. & Date.
- iii) Total Estimated Shipping Weight of Items offered by Tenderer (in T).
- iv) Weight of the Heaviest Single Item (in T)
- v) Weight and Dimensions of the Heaviest Single Package
- vi) Dimension and Weight of the Largest Single Package.
- vii) Special Transport Requirement.
- viii) Special Storage Requirement
- ix) Previous Experience, List of Similar Plant/Equipment supplied
- x) Available Plant Facility
- xi) Available Spare Capacity
- xii) Supplier's Representative in India.



**ANNEXURE-5**

***BILL OF QUANTITY  
OF  
100 KVA OIL IMMERSSED POWER TRANSFORMER***

| <b>Sl.no</b> | <b>DESCRIPTION</b>                                 | <b>QUANTITY<br/>(Nos.)</b> |
|--------------|--|----------------------------|
| 1            | 6.6KV/230V (L-L) 100KVA ONAN Lighting Transformer. | 2                          |

**Notes:**

- 1) The equipment supply shall be completed in all respect.
- 2) Any item not specifically mentioned in the above BOQ or elsewhere in this NIT but necessary for safe, reliable, efficient and trouble free operation of the equipment shall be deemed to be in the scope of the tenderer.
- 3) The quantities mentioned in the above BOQ are tentative and the same may increase or decrease at later stage.