

ANDHRA PRADESH POWER GENERATION CORPORATION LIMITED
VIDYUT SOUDHA, VIJAYAWADA-520004



Specification No. e-610002217/HPC&HP/GT/APGENCO/2026

(THIS IS A TWO PART BID)

“Design, Engineering, Manufacture, assembly, testing before supply, delivery at site & Erection, Testing and Commissioning / Design, Engineering, Manufacture, assembly, testing before supply, delivery at site, Supervision of Erection, Testing and Commissioning of 1 No. 8.35 MVA, 11/ 132/ $\sqrt{3}$ KV, 50Hz, Single Phase Generator Transformer along with all fittings, accessories for Machkund Hydro Electric (Jt.) Scheme”

Summary sheet, Instructions to bidders, General, Financial Terms and Conditions, Technical Specification and schedules

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**Sd/-
Superintending Engineer
Hydel-II/APGENCO
Vidyut Soudha, Vijayawada**

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ANDHRA PRADESH POWER GENERATION CORPORATION LIMITED
VIDYUT SOUDHA :: VIJAYAWADA-520004
NOTICE INVITING TENDER
NO. e-610002217/HPC&HP/GT/APGENCO/2026

1.	Department Name	Andhra Pradesh Power Generation Corporation Limited
2.	Circle/Division Name	Chief Engineer /HPC & Hydel Projects /APGENCO Vidyut Soudha, Vijayawada
3.	Tender Notice No.	e-610002217/HPC&HP/GT/APGENCO/2026
4.	Name of Work	Design, Engineering, Manufacture, assembly, testing before supply, delivery at site & Erection, Testing and Commissioning/ Design, Engineering, Manufacture, assembly, testing before supply, delivery at site, Supervision of Erection, Testing and Commissioning of 1 No. 8.35 MVA, 11/ 132/ $\sqrt{3}$ KV, 50Hz, Single Phase Generator Transformer along with all fittings, accessories for Machkund Hydro Electric (Jt.) Scheme
5.	Estimated Contract Value	Not applicable
6.	Delivery Period	a) <u>Material:</u> The materials shall be delivered within <u>Four Months</u> from the date of issue of LOI/Purchase order. However, the delivery period shall include delivery and acceptance of the material in good condition at site. b) <u>Erection, testing & commissioning / Supervision of Erection, Testing & Commissioning:</u> Erection, testing & commissioning /Supervision of Erection, Testing & Commissioning of transformer shall be done within <u>ONE Month</u> from the date of intimation of readiness of site.
7.	Tender Type	Open
8.	Tender Category	Common Products/Service
9.	Bid Security (EMD)	Rs.3,40,000/- (Rupees Three Lakhs and Forty Thousand Only) The EMD shall be paid in any of the following forms i) Non-PEMD Holders: Rs.1 Lakh in the form of NEFT/ RTGS/ DD and balance amount of Rs.2,40,000/- (Rupees Two Lakhs and Forty Thousand Only) in the form of NEFT/ RTGS/DD or Bank Guarantee from any Govt. Banks / Nationalized Banks / Public Sector Banks / Scheduled banks or in the form of Insurance surety Bond in the prescribed Proforma. ii) PEMD Holders: The Permanent EMD holders while uploading a copy of PEMD approval issued by the competent authority along with bid shall also furnish Rs.1 Lakh in the form of NEFT/RTGS/ DD iii) NSIC/SSI units, exemption letter from payment of EMD issued by APGENCO shall be furnished with PQB

		documents.Failure to do so they are liable to attract rejection of EMD exemption claim. For further details, refer SECTION-I, IMPORTANT INSTRUCTIONS TO BIDDERS.
10.	Bid Security (EMD) Payable to	<p>a) DD shall be drawn in favour of Pay Officer, APGENCO, Vidyut Soudha payable at Vijayawada</p> <p>b) The Bank Guarantee shall be obtained from any Govt. Banks/Nationalized Banks/ Public Sector Banks/ Scheduled banks in the prescribed format (refer to the Annexure-I). The B.G. shall have the validity for a period of 270 Days from the date of opening of pre-qualification with claim period of 6 months thereafter.</p> <p>c) Insurance surety Bond in the prescribed Proforma (refer to the Annexure-V) with validity for a period of 450 Days from the date of opening of pre-qualification thereafter.</p> <p>d) Direct Credit to APGENCO Account either through NEFT or RTGS.</p> <p>APGENCO Bank account details for NEFT/ RTGS Account No.52077965022, IFSC Code: SBIN0016576, MICR Code: 5200020441 Branch - Specialized MID Corporate Branch, Vijayawada.</p>
11.	Process Fee	Not Applicable
12.	Bid Start Date & Time	12.02.2026 @ 17:00 Hrs
13.	Pre Bid Meeting	Not applicable
14.	Bid Submission Closing Date & Time	16.03.2026 @ 17:00 Hrs
15.	Bid Submission	Online
16.	Bid Validity	180 days from the date of opening of the PQ/Tech Bid
17.	Pre Qualification/ Tech. Bid Opening Date	17.03.2026 @ 15:00 Hrs
18.	Price Bid Opening Date & Time (Tentative)	24.03.2026 @ 15:00 Hrs
19.	Eligibility Criteria	<p>a) The equipment to be supplied shall be of proven prudent design as per the IS/IEC or any equivalent standard.</p> <p>b) The bidder should have experience in design, engineering, manufacture, supply, erection, testing, and commissioning, or supervision of erection, testing, and commissioning, of the Generator transformers of 132 KV class or higher voltage rating with capacity not less than 8.35 MVA in the last five years.</p>

		<p>c) The bidder should have supplied the Generator transformers for at least two organizations (Private/ Govt./PSU) and the transformers shall be working satisfactorily without any major repairs/replacement for at least one year as on date of bid submission.</p> <p>d) The bidder should upload the copies of the performance certificates from the end users along with purchase orders for the works executed as a proof of experience without which their bid shall be treated as non-responsive.</p> <p>e) The bidder should have an annual turnover of 1.8 Crores for at least 2 financial years during the last '3' financial years. The bidder should enclose copies of the audited financial statements of the last '3' financial years viz., 2022-23, 2023-24 & 2024-25 along with CA certificate/IT returns so as to prove the financial capacity of the bidder to execute the order.</p>
20.	Officer Inviting Bids & Place of Opening of Bids	Superintending Engineer, Hydel-II, APGENCO, 4th Floor, Vidyut Soudha, Gunadala, Vijayawada-520004, AP.
21.	Contact Details	O/o. Superintending Engineer/ Hydel-II, APGENCO, 4th Floor, Vidyut Soudha, Gunadala, Vijayawada-520 004. Phone: 0866 – 2526802/320/318 Email: se-hpc2@apgenco.gov.in; hpc.eme4@apgenco.gov.in
22.	Procedure for bid submission	Through APGENCO e-procurement platform, i.e., www.apgenco.gov.in OR https://etender.apgenco.gov.in Help Desk Ph. No. 08662526979.
23.	Evaluation of Bids	Lowest bidder (L1) excluding the cost of recommended spares.

Note:

- (a) The SSI Units registered with Govt of AP or NSIC registered with the Dept of Industries/Govt. of India, are only eligible for exemption from payment of EMD. However, they should apply and get approved in advance by enclosing a valid SSI/NSIC certificate and obtain exemption from the Superintending Engineer/ Hydel-II/ APGENCO/Vidyut Soudha, well before submitting the Bid and upload the same in the technical bid.
- (b) Ensure that all the documents uploaded as per the ***CHECK LIST***.

Sd/-

**Superintending Engineer
Hydel-II**

CHECK LIST

I. The following documents pertaining to Pre-Qualification & Technical bid should be uploaded in “C-FOLDER ATTACHMENTS” only:

1. EMD: DD/BG/PEMD/Insurance surety Bonds/through NEFT or RTGS as per item.no.9& 10 of NIT.
2. Proof of Experience – Minimum Two **Performance certificates issued by the END USERs** along with Purchase order copies.
3. Proof of Financial capacity - Annual Turnover Certificates (with authentication of Chartered Accountant) along with Balance Sheets (Financial statements) for last three financial years.(shall be as per clause 19 of NIT)
4. Proof of Technical Capability–The Guarantee Technical particulars along with full Technical details and other relevant documents of the equipment previously supplied shall be furnished.
5. Registration Certificates: Copies of documents relating to the Registration of the firm, Registration as Electrical Licensed Contractor, Partnership deed, Articles of Association.
6. Guaranteed Technical Particulars: sheet (Schedule-09) along with full Technical details of the materials/ equipment to be supplied
7. Income Tax Registration: Copy of PAN.
8. GST Registration: Copy of GST registration.
9. Schedules: Filled in Schedules 1 to 9
10. Miscellaneous documents: Any other documents/issues related to PQ/Technical matters, like Type Test reports etc.,

II. Copies of the following Price Bid documents shall be uploaded in “ATTACHMENTS FOLDER” which will be visible after Price bid opening only:

- 1) Price Summary Proposal sheet duly indicating GST, Packing & Forwarding, freight, Transit Insurance charges as per **SCHEDULE – A and SCHEDULE – B**
- 2) Any other items/issues related to Price bid/ Price of items which could not be quoted in the Price Bid can also be uploaded.

NOTE: 1) **Uploading of Documents in the respective folder of APGENCO e-platform will only be considered. Any wrong attachments will lead to disqualify of the bid.**

2) **Hard copies shall be submitted by the successful bidder (L1) for verification, only if asked by the Competent Authority.**

SECTION-I
IMPORTANT INSTRUCTIONS TO BIDDERS

The instructions given below must be read very carefully, as failure in compliance with any of these may render the offer liable for rejection. If a bidder has any doubt about the meaning of any stipulation therein, General Purchase Conditions, specification of materials or any other enclosed document, the bidder should immediately obtain the clarification/ information in writing from the executive who has issued these documents.

1.1 Procedure for submission of bids in APGENCO e-procurement website:

1. The bidders need to register on the electronic procurement market place of APGENCO, i.e. www.apgenco.gov.in. On registration in the APGENCO e-procurement website market place the bidder will be provided with a user ID and password by the system using which the bidder can submit their bids on line. For any queries on registration and online bid submission, in APGENCO e-procurement Website, the bidders may contact HELP DESK of Service provider on <https://etender.apgenco.gov.in>
2. The guidelines for the bidders participating in APGENCO e-procurement tender are detailed in the website www.apgenco.gov.in.
3. The Bids/Schedules should be in the prescribed form that can be downloaded free of cost from the website <https://etender.apgenco.gov.in>.
4. The dates stipulated in the Bid notice are firm and under any circumstances they will not be relaxed unless officially extended.
5. Digital Certificate Authentication:
 - a. The bidder shall authenticate the bid with his Digital Certificate for submitting the bid electronically on APGENCO e-procurement website. Bids not authenticated by Digital Certificate of the bidder will not be accepted on the APGENCO e-procurement website.
 - b. For obtaining Digital Signature Certificate, all the bidders are requested go through Guidelines to bidders for participating in APGENCO e-procurements tenders which is available in the APGENCO e-procurement website.
6. The tenderer should read and understand clearly the general instructions and terms and conditions of the tender document before uploading of documents and submission of the tender. The Bidder is also requested to down load the training Kit, along with above tender document and use the same to acquaint with the procedure. Any offline submission of the bid will be rejected and action will be taken against the bidder according to the norms of APGENCO e-procurement website.
7. The bids shall be submitted online. All the documents to be submitted as soft copies shall be signed & stamped, scanned and uploaded in Zip format. Those documents which shall be submitted as hard copies shall be signed, stamped and sent to reach the tender inviting authority after written request from the tender inviting authority. **List of the documents** to be submitted in hard copies/soft copies is given in **Check List**.
8. Any downloading soft copy of the tender documents from the web site is at the sole risk and responsibility of the bidder. APGENCO will not be responsible for any delay/difficulty/ inaccessibility of the downloading facility for any reason whatsoever.
9. Amendments/Addendum, if any will also be posted on website for downloading. APGENCO will not hold any responsibility of amendments being or not being kept tracked from time to time by the bidders.

10. The dates stipulated in the Bid notice are firm and under any circumstances they will not be relaxed unless officially extended.
11. The Bid Opening Authority will not consider any documents uploaded after opening date and time.

1.2 EVALUATION OF BIDS:

- a) Bids will be processed in two stages (two part bid). In the first stage, the "Bid" under e-procurement package will be opened to assess whether the Bidder qualifies and whether his offer is technically acceptable and substantially responsive. The Purchaser will examine the Bids to determine whether they are complete, whether required sureties have been furnished, whether the documents have been properly signed, whether relevant hard copies have been furnished and whether the Bids are generally in order. The bids of only such Bidders whose bids are technically and commercially in accordance with the specification will be considered for second stage of Price Bid opening/evaluation. The on-line system will not open the price-bids of tenderers who are not qualified in Technical/PQ.
- b) A responsive Bid is the one which accepts and fulfils all the terms and conditions of this specifications and documents, supported by the necessary sureties, and are complete in respect of details as requested in the Bid document.
 - i) The responsive Bids received will be evaluated by the Purchaser to ascertain the lowest evaluated Bid for complete works covered under these specifications and documents.
 - ii) The purchaser is the final authority in deciding the above and his decision cannot be contended
- c) If the due date for opening of the tenders happens to be a Public holiday, the opening of the tenders will be done on the next working day at the same time and venue as specified originally for opening. APGENCO reserves the right to amend or modify the tender and its conditions.
- d) The Bids will be opened at the time and date specified in the tender notice by the Superintending Engineer or his authorized assistant in the presence of the bidders or their authorized representatives with valid authorization, who may desire to be present.
- e) The tenders which contain the full information and which comply with the requirements regarding technical and financial qualifications, experience and equipment will be considered.
- f) The APGENCO e-procurement website market place provides an online self-service registration facility to such of the Bidders who are already registered with the respective participating departments for supply of specified goods and services.
- g) Intending bidders can contact the O/o. the Superintending Engineer, Hydel-II, APGENCO, 4th Floor, Vidyut Soudha, Vijayawada - 520004 for any clarification /information on any working day during working hours. Phone: 0866 – 2526802/6318/6320.
- h) APGENCO reserves the right to respond to any e-mail received by it through their website. APGENCO does not warrant the privacy and/or security of e-mails during internet transmission.
- i) APGENCO reserves the right, without prejudice to other rights under terms and conditions of the NIT and tender documents or other remedies available to cancel tenders

without assigning any reasons and will not entertain any correspondence in the matter. APGENCO accepts no liability whatsoever and will not be liable for any loss or damage arising directly or indirectly (including special, incidental or consequential loss or damage) from use of APGENCO e-procurement website or from cancellation of tenders.

1.3 Earnest Money Deposit(EMD):

- Offers must accompany EMD as per summary sheet, **S.No. 9 & 10 of NIT.**
- The SSI Units registered with Govt of AP or NSIC registered with the Dept of Industries/Govt. of India, are only eligible for exemption from payment of EMD subject to the following conditions.
 - (a) The Bidder shall submit a copy of the valid certificate of Registration either with NSIC or Govt. of A.P indicating details such as Monetary limit, details of items covered in the registration, validity period of certificate.
 - (b) The Items offered must be in the list of Items, for which the Firm is registered.
 - (c) The quoted price shall be less than the monetary limit stipulated in the Registration Certificate.

The BIDDERS who fulfill the above conditions shall apply for EMD exemption, in advance by enclosing a valid SSI/ NSIC certificate and furnishing the details/ information and obtain exemption from the Superintending Engineer (Hydel-II), Vijayawada well in advance before submitting the tender. However, please note that exemption will be issued purely at APGENCO's discretion.

Note: All the bidders shall invariably upload the scanned copies of DD towards EMD/online receipt or PEMD approval letter/ EMD exemption letter (if applicable), along with the Bid, in e-procurement platform, failing which their offer shall be liable for rejection

1.4 The EMD shall be forfeited, if

- i) Bidder withdraws the bid before expiry of its validity.
- ii) Successful bidder does not accept the order/LOI or fails to enter in to a contract within validity period of offer.
- iii) Successful bidder fails to furnish Security Deposit within 30 days from the date of issue of P.O/ LOI.
- iv) The offer is disqualified for the reasons outlined in **clause 1.7.**

1.5 Permanent/ Standing EMD Holders:

The bidder may deposit with APGENCO, the permanent fixed deposit of **Rs.5,00,000/-** (Rupees Five Lakhs only) as EMD in the form of DD/Pay order/ Banker's cheque. In case of BG/Insurance surety Bond, it shall be valid for a period of three years constituting the said sum as security for the compliance with the obligation undertaken in the offer submitted by the bidder. No interest will be payable on such amount. Such bidder shall be entitled to have them considered without payment of EMD upto 5 Lakhs with each tender separately. They need to furnish **the Registration Certificate Number** and shall also furnish a copy of certificate along with the offer.

1.6 The fact of having enclosed the EMD, in requisite forms as indicated (1.3), or bidder holding permanent EMD (1.5), shall be clearly mentioned in their offer, failing which their offer will not be considered for evaluation whatsoever.

- 1.7 Post tender rebates or deviation in quoted prices and/or conditions or any other such offers which will give a benefit to the bidder will not only be rejected outright but also the **original offer will itself get disqualified** on this account, and bidders EMD shall be forfeited.
- 1.8 Bidders may note that due date and time of opening the bids shall be adhered to and accordingly, if they wish to witness the bid opening, they should bring necessary authorization letter from the organization.
- 1.9 Standard printed conditions of the bidder if uploaded with their offer will not be accepted.
- 1.10 **Validity of offers:** The offer shall be valid for period of **180 days** from the date of opening of PQ bids. The period of validity cannot be counted from any other date other than the date of opening the bids. During this period bidder shall not be permitted to withdraw or vary their offers, once made and if they do so, the EMD shall be forfeited.
- 1.11 **Income Tax Certificate:** The bidder shall submit along with their offers, the latest valid Income Tax returns for at least two years during the last three years.
- 1.12 **Past Experience:** The list of consumers, to whom the bidder had supplied, erected and commissioned identical materials in the past along with P.O details and performance report, if any, shall be furnished.
- 1.13 **Acceptance of APGENCO Payment Terms:** The bidders will be loaded in price evaluation @ 1.25% of landed cost per month for deviation in payment terms.
- 1.14 **Price Basis:** Kindly quote FIRM & F.O.R. destination prices. Otherwise, if the quoted rates are Ex-works, Loading @ 2% towards packing and forwarding and 3% towards freight charges will be done.
- 1.15 **Transit Insurance:** Bidder shall quote FOR Destination prices inclusive of transit insurance charge till such time material is unloaded at Project site including 30 days' storage period. All the damaged parts during transit or otherwise, if any, are to be made good or replaced with good ones by the bidder/ supplier irrespective of the settlement of claims with insurance company.
- 1.16 **Goods & Services Tax:** The offered prices shall be exclusive of GST. The rate applicable shall be shown separately. GST will be paid to the seller at the rate which it is liable to be assessed/actually assessed on the date of supply. In case the bidder stipulates GST extra as applicable at the time of dispatch and specifies the present rate of GST (in numeric percentage or NIL), the offer shall be evaluated considering rate of GST for the product as per rate of Govt. of India or as evident from bids received from other bidder. However, liability of APGENCO shall be restricted to actual GST paid at the time of dispatch subject to production of Tax Invoice.
- 1.17 **Cost Compensation for Deviation:** Deviations specifically declared by the bidders in respective deviation schedules of bid proposal sheets only will be taken into account for the purpose of evaluation. The bidders are required to declare the prices for the withdrawal of the deviations declared by them in the deviation schedules. Such prices declared by bidders for the withdrawal of the deviations in the deviation schedule shall be added to the bid prices to compensate for these deviations. In case prices for the withdrawal of deviations not furnished by the bidder, the APGENCO shall convert such deviations into Rupee value and add to the bid price to compensate for these. In determining the Rupee value of the deviations, the APGENCO will use parameters consistent with those specified in the specification and documents and / or other

information as necessary and available with APGENCO. In case the bidder refuses to withdraw the EMD of bidder shall be forfeited. Bidder may note that deviation variations and additional condition etc. found elsewhere in the bid other than those stated in the Deviation schedules, save those pertaining to any rebates, shall not be given effect to in evaluation and it will be assumed that the bidder complies with all the conditions of bidding documents. In case bidder refuses to withdraw, without any cost to APGENCO, those deviations, which the bidder did not state in the deviation schedules, the EMD of the bidder may be forfeited.

1.18 Offer should strictly be in conformity with technical specifications/ drawings/ samples as stipulated in this tender. In case no deviations are indicated, it shall be taken for granted that item(s) has/have been offered strictly as per the requirements.

1.19 Delivery Period:

a) **Material:** The materials shall be delivered within **Four Months** from the date of issue of LOI/Purchase order. However, the delivery period shall include delivery and acceptance of the material in good condition at site.

b) **Erection, Testing & Commissioning / Supervision of Erection, Testing & Commissioning:** Erection, testing & commissioning / Supervision of Erection, Testing & Commissioning of transformer shall be done within **ONE Month** from the date of intimation of readiness of site by the Superintending Engineer/O&M/Machkund HES.

Note: Dismantling of existing transformer and execution of required modifications for erection of new transformer is in the scope of bidder only.

1.19.1 Delivery Schedule

The material shall be offered for inspection atleast 10 days in advance to depute APGENCO representative and the material shall be delivered after issue of dispatch clearance. The offered delivery period shall be based on delivery schedule indicated in the tender. In case of any deviation, the bidder shall offer his best, realistic and firm delivery, which shall be specific and guaranteed. For delivery beyond contractual delivery period, provisions of 'General Purchase Conditions' shall apply.

1.20 It is not binding on APGENCO to accept the lowest or any bid. The corporation reserves the right to revise the quantities at the time of placing order. The quoted rates, terms and conditions shall apply. APGENCO further reserves the right to accept or reject any/all bids without assigning any reasons thereof.

1.21 Bidders are requested to fill in the enclosed proforma (**Schedule-6**) for Terms and conditions and submit the same along with their offer.

1.22 Make/Brand of items offered shall be specified. It shall be appreciated if one copy of detailed descriptive literature/pamphlets shall be enclosed along with the offer which may help technical evaluation.

1.23 Amendment of Bidding Documents:

a) At any time prior to the due date & time for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by amendment through e-platform.

b) In order to allow prospective Bidders reasonable time to make the amendment into account in preparing their bids, the Purchaser may, at his discretion, extend the due date & time for the submission of bids.

1.24 Language of Bids: The Bid prepared by the Bidder and all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in English language only.

1.25 Documents Comprising Online Bid:

List of all documents which shall be submitted as softcopies/ hardcopies are given in the **Check List**. The documents which shall be submitted as softcopies shall be signed, stamped and scanned and uploaded during bid submission. **The documents which shall be furnished as hardcopies shall be signed, stamped and sent only when requested by the tender inviting Authority by the successful bidder.**

1.26 Articles of Association:

- a) All Bids must be accompanied by duly authenticated copies of the documents defining the constitution of the company, power of attorney and other relevant documents, and any bid submitted by a partnership firm must be accompanied by duly authenticated extracts from the partnership deed or other documents, so as to show by which person and in what manner contracts may be entered into by or on behalf of the company, partnership for the due execution of such contracts and responsibilities.
- b) The said documents must be legalized by the local authorities at the place of issue. Such documents should indicate current address of the firm and full name and current address of all partners of the firm.
- c) Any Bid not containing these documents, or if such documents are incomplete, or do not confirm to the aforesaid forms, may at the discretion of the Purchaser be excluded from the judicature.

1.27 The Purchaser may, at his discretion, extend the due date & time for the submission of bids through online corrigendum. However, all rights and obligations of the Purchaser and Bidders previously subject to the due date & time will thereafter be subject to the due date & time as extended.

1.28 Date of Commencement of Contract:

The date of issue of LOI/PO is the date of commencement of contract. The contractor will have to complete all the formalities like submission of Security Deposit etc. within 30 days of issue of LOI/PO. Any delays in complying with the above formalities will be to the account of the contractor.

1.29 Authentication of Bidding:

- a) If the tender is made by an individual, it shall be signed by the individual above his full name and current address.
- b) If the tender is made by a proprietary firm it shall be signed by the proprietor above, his full name and the full name of his firm with its current address.
- c) If the tender is made by a firm in partnership, it shall be signed by all the partners of the firm above their full names and current address, or by a partner holding the power of attorney for signing the tender in which case a certified copy of the power of attorney shall accompany the tender. A certified copy of the partnership deed, current address of

- the firm and the full names and the current addresses of all the partners of the firm shall also accompany the tender.
- d) If the tender is made by limited company or a limited corporation, it shall be signed by a duly authorized person holding the power of attorney for signing the tender in which case a certified copy of the power of attorney shall accompany the tender. Such limited company or corporation may be required to furnish satisfactory evidence of its existence before Contract is awarded.
 - e) If the tender is made by group of firms, the sponsoring firm shall submit complete information pertaining to each firm in the group and state along with the bid as to which of the firms shall have the responsibility for tendering and for completion of the Contract document and furnish evidence admissible in law in respect of the authority assigned to such firm on behalf of the group of firms for tendering and for completion of the Contract document. The full information and satisfactory evidence pertaining to the participation of each member of the group of firms in the tender shall be furnished along with the tender.
 - f) The documents or information as required by paras “(a) to (e)” herein above must be uploaded by the tenderer.
 - g) All witnesses and sureties shall be persons of status and probity and their full names, occupations and addresses’ shall be stated below their signatures.
 - h) All signatures in the tender documents uploaded shall be dated.

Sd/-
Superintending Engineer
Hydel-II

SECTION-II
GENERAL PURCHASE CONDITIONS

- 2.1** The following terms and expressions herein used shall have the meaning as indicated therein:
- Supplier/ Vendors:** Shall mean the individual; firm or company whether incorporated or otherwise in whose name this purchase order is addressed and shall include its permitted assigns and successors.
- Purchaser/ corporation:** Shall mean Andhra Pradesh Power Generation Corporation Limited., (A Government of A.P. Undertaking), a company incorporated in India under Companies Act 1956, having its Registered Office at Vidyut Soudha, Vijayawada – 520004, Andhra Pradesh.
- 2.2 Reference:** This purchase order number must appear on all the correspondence, packing slips, invoices, drawings or any other document or paper connected with this purchase order.
- 2.3 Specifications and drawings:** Any information or details which are included in the specification but not indicated in the drawings and vice-versa shall have the same effect and meaning as if included for and shown both in the specifications and drawings. In case of any dispute between the specifications and drawings, the decision of the Corporation or its authorized representative shall be final and binding.
- 2.4 Additions/ Alteration/ Modifications:** The Corporation reserves the right to make additions/ alterations/ modifications to the quantity of items in the purchase order. The supplier shall supply such quantities also at the same rate as originally agreed to and incorporated in the purchase order. The variation shall, however, be limited to +/- 20% of the quantity ordered.
- 2.5 Waiver:** Any waiver by the authority or any breach of the conditions of the purchase order shall not constitute any right for subsequent waiver of any other terms and conditions.
- 2.6 Subletting and Assignment:** The supplier shall not, except with prior consent in writing of the Corporation, sublet, transfer or assign this 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 responsibilities under the contract.
- 2.7 Information Provided by the Corporation:** All drawings, Data and documentation that are given to the suppliers by the Corporation for the execution of the order are the property of the Corporation and shall be returned when demanded. Except for the purpose of executing the order of the Corporation, supplier shall ensure that the above documents are not used for any other purpose. The supplier shall further ensure that the information given by the Corporation is not disclosed to any person, firm, body, corporate and/or authority and every effort that the above information is kept confidential. All such information shall remain the absolute property of the Corporation.
- 2.8 Name Plate:** Equipment should be provided with name plate giving full details of manufacture, capacity and other details as specified in the relevant IS or other specification stipulated. The purchase order number, date and year of supply and the words “APGENCO” must be etched on the name plate.

- 2.9 Interchangeability:** All similar materials and removable parts of similar equipment shall be interchangeable with each other. A specific confirmation of this should be furnished along with the invoices for the supplies.
- 2.10 Materials & Workmanship:** Supplier shall fully warrant that the stores, equipment and component supplied against the purchase order shall be new and first quality, according to the specifications and shall be free from defects (even concealed faults, deficiency in design, materials and workmanship).
- 2.11 Spare Parts, Oil & Lubricants:** Whenever applicable, the supplier shall furnish to the Corporation, item-wise price list of spares required for five-year operation & Maintenance of the equipment. The supplier shall also furnish necessary instructions and drawings to identify the spare part numbers and their locations as well as on interchangeability chart. The supplier shall recommend the quality of oils & lubricants required to be used for un-interrupted operation (at least for one year) of the equipment supplied against this order.
- 2.12 Supplier's liability:** Supplier hereby accepts full responsibility and indemnifies the Corporation and shall hold the Corporation harmless from all acts of omission and commission on the part of the supplier, his agents, his subcontractors and employees in execution of the purchase order. The supplier also agrees to defend and hereby undertakes to indemnify the Corporation and also hold it harmless from any and all claims for injury to or death of any and all persons including but not limited to employees and for damage to the property arising out of or in connection with the performance of the work under the purchase order.
- 2.13 Access to supplier's Premises:** The Corporation and /or its authorized representative shall be provided access to suppliers and / or his sub-contractor's premises, at any time during the pendency of the purchase order, for expediting the supplies, inspection, checking etc.
- 2.14 Modifications:** This purchase order constitute an entire agreement between the parties hereto. Any modification to this order shall become binding only upon the same being confirmed in writing duly signed by both the parties.
- 2.15 Inspection/checking/testing:**
All materials/ equipment to be supplied against this purchase order shall be subject to inspection/checking/testing by the Site engineers/ authorized Quality control department representative/Engineer from Head Quarters at all stages and places, before, during and after the manufacture. All these tests including type tests (Not conducted earlier than 10 years and not valid up to the expiry of validity of offer) shall be carried out in presence of Site engineers/ authorized Quality control department representative/Engineer from Head Quarters of the Corporation. Supplier shall notify the corporation for the inspection of materials/ equipment when they are ready, giving at least 10 days notice. If upon receipt at our stores, the materials / equipment do not meet the specifications, they shall be rejected and returned to the supplier for repair/ modification etc., or for replacement. In such cases all expenses including to and fro freight, repacking charges, transit insurance etc., shall be to the account of supplier.

The equipment offered shall be type tested by the bidder as per the relevant Indian/International standards. The type tests must have been conducted on similar or higher capacity. The type test reports shall not be older than TEN years and shall be

valid up to the expiry of validity of offer. The bidder shall furnish type test reports along with bid.

Inspection by the authorized representative of the Corporation or failure of the Corporation to inspect the material/ equipment shall not relieve the supplier of any responsibility or liability under this purchase order in respect of such materials /equipment not be interpreted in any way to imply acceptance thereof by the Corporation. Whenever specifically asked for by the Corporation, the supplier shall arrange for inspection/ testing by institutional Agencies such as Lloyd's Register of Industrial services, Boiler Inspectorate, RITES etc. In such cases vendor shall adhere to the inspection / testing procedures laid down by such agencies. All expenses including inspection fees shall be to the suppliers account unless agreed to the contrary and specified in the purchase order.

Accommodation and local conveyance shall be provided by the suppliers for the APGENCO/Third party representatives during inspection.

2.16 Packing and Marking: All materials/equipment shall be securely packed to the requirement of transportation by Rail/Road/Sea transport. All exposed services/ connections/ protrusions shall be properly protected. All unexposed part shall be packed with due care and the packages should bear the words 'Handle with Care'. The packing requirements of Rail/ Road transport shall be complied with so as to obtain clear Railway/ Lorry Receipt i.e. without any qualifying remarks.

All packages and unpacked materials shall be marked with the name of the Consignor, Consignee, Purchase Order No., gross and net weight, sign of handling, if any, with indelible paint in English at least at two places. In case of bundles, metallic plates marked with the above details shall be tagged with such bundles.

2.17 Dispatch of materials: The equipment & material shall be dispatched only after issuance of MDCC from the corporate Quality Department. The supplier is responsible for the safe delivery of the goods in good condition at destination stores. The supplier should acquaint himself of the conditions obtaining for handling and transport of the goods to destination and shall include and provide for security and protective packing of the goods so as to avoid damage in transit. After packing the materials / equipment those shall be dispatched strictly as per the provision of purchase order. In case any changes in the mode of transportation and / or transporter has to be done, the same shall be done only after obtaining prior approval in writing. Normally the goods shall be dispatched through our approved transporter only. All formalities related to allotment of wagons, loading permission from railways shall be completed by the supplier. The supplier shall communicate immediately the dispatch details to the consignee as specified in the purchase order. The original despatch documents shall be forwarded immediately, failing which the supplier shall be responsible for any delay in payment and consequential payments of demurrages and wharfages to the transporter, if any.

2.18 Demurrage/wharfage:

- i. Dispatch of materials not through authorized transporter
- ii. Late receipt of invoice or due to violation of any other clause(s) of the purchase order will be to supplier's account. Supplier shall also be responsible for all such payments due to late receipt of RR/LR and other documents.

- 2.19 Acceptance of order:** The Purchase orders shall be sent to supplier in duplicate and he shall return one copy along with enclosures, duly signed and stamped, within 7 days in token of having received and accepted the order.
- 2.20 Jurisdiction:** All and any dispute or difference arising out of or touching this order shall be decided only by the courts or Tribunals situated in Vijayawada.
- For the purpose of any legal obstruction, the material, spares etc. should be deemed to pass into company's owner ship only at the destination stores where they are delivered and accepted.
- 2.21 Guarantee Period:** The equipment shall be guaranteed for satisfactory operation for a period of 36 months from the date of receipt at stores in good condition or 30 months from the date of commissioning whichever is earlier. If during the period of guarantee any of the material found defective and / or fail in test or operation, such materials shall be repaired or replaced by the supplier free of cost to APGENCO irrespective of their reimbursements from the insurance company within reasonable time which shall in no circumstances be more than 15 days or such other reasonable time as APGENCO may deem proper to afford, failing which the cost of the failed units will be deducted from subsequent bills/ Bank Guarantees/ISBs.
- 2.22 Drawings:** The detailed drawings and bill of materials of the Transformer shall be furnished within 15 days from the date of acceptance of PO and got approved by APGENCO before manufacturing.

Sd/-

**Superintending Engineer
(Hydel -II)/APGENCO**

SECTION-III FINANCIAL

- 3.1 Prices:** Price(s) mentioned in the purchase order shall be firm & F.O.R. destination prices and not subject to escalation on any account, till the order is executed in full and its subsequent amendments accepted by the supplier even though the completion/ execution of order may take longer time than delivery period incorporated and accepted in purchase order.

The rates quoted in e-procurement website will be inclusive of all charges (i.e., Packing & Forwarding, Freight and Transit Insurance etc.,), taxes & duties and inclusive of GST.

- 3.2 Taxes and Levies:** Taxes and other levies payable shall be shown separately in the invoice. These shall be to the account of Corporation, unless otherwise mentioned in the purchase order.
- 3.3 Variations in Statutory Levies:** Any variation, upward or down ward, in statutory levies or new levy is introduced after opening of the bids/ placement of order under this purchase order shall be to the account of the Corporation, unless otherwise mentioned in the P.O. provided that the delivery is completed within the contractual delivery schedule. In cases where delivery schedule is not adhered to by the supplier and there are upward variation/revision after the agreed delivery date, the bidder/supplier shall bear the impact of such increased levies and if there is downward variation/revision, the corporation shall be given advantage to that extent.

All royalties for patent or charges for the use or infringement thereof that may be involved in the construction or use of any equipment shall be included in the bid price. The bidder /supplier shall protect the Corporation against any and all claims arising on account of the use thereof the Corporation agreeing to furnish the supplier any appropriate information or assistance.

3.4 Security Deposit (SD)

- a) The successful bidder shall submit within one month from the date of issue of LOI/ PO, security deposit equal to 2.5% of the value of the purchase order for proper fulfillment of the terms and conditions of the contract and full execution of supplies and works thereof. The security deposit may be submitted by way of a demand draft in favour of “Pay Officer, APGENCO, Vidyut Soudha, Vijayawada”, payable at Vijayawada or through NEFT/RTGS. Alternatively, SD may be submitted by way of a Bank Guarantee (BG)/Insurance Surety bond. The BG/Insurance Surety bond shall be issued by as per the IRDAI guide lines/Govt. Banks/Nationalized Banks/Scheduled banks/ Public sector Banks / Insurance Company, on non-judicial stamp paper(s) of applicable value, in APGENCO’s prescribed proforma and as per stipulated guidelines. The Bank Guarantee shall remain valid for the stipulated Delivery Period with additional claim period of 6 months thereafter and the Insurance Surety Bond shall remain valid for the stipulated Delivery Period with additional claim period of 6 months thereafter for satisfactory completion of delivery of the material and execution of the contract.
- b) The amount of security deposit shall be forfeited to the extent of financial loss suffered by the Corporation, if the contractor fails to execute the order and fulfill its terms and conditions.

- c) The SD will be released, on application, after ensuring satisfactory execution of contract, and settlement of any/all pending claims.
- d) Alternatively in lieu of SDBG/Insurance Surety Bond, an equivalent amount will be deducted from the supplier's invoices towards Security Deposit which will be released immediately after submission & acceptance of Bank guarantee/Insurance Surety bond or after completion of supplies and acceptance, as the case may be.

3.5 PERFORMANCE BANK GUARANTEE (PBG)

- a) The Successful Bidder, shall furnish Performance Bank Guarantee / Insurance Surety Bond to the extent of 10% of the contract price against any manufacturing defects/ poor workmanship/ poor performance. The Bank Guarantee shall remain valid for the stipulated Guarantee Period with additional claim period of 6 months thereafter and the Insurance Surety Bond shall remain valid for the stipulated Guarantee Period with additional claim period of 6 months thereafter. Its validity shall be extended as and when required for compliance with contractual requirements. If the supplier fails to furnish the Performance bank guarantee/Insurance Surety Bond, 10% of order value will be deducted from the bills. The deducted 10% performance guarantee amount will be released after expiry of guarantee period or furnishing of 10% PBG/Insurance Surety Bond.
- b) PBG/Insurance Surety Bond will be released on firm's request, after satisfactory completion of the Guarantee Period, after ensuring that there are no pending claims.

3.6 BANK GUARANTEE / INSURANCE SURETY BOND GUIDELINES:

- a) All applicable Bank Guarantees, viz., EMD/PEMD BG, Security Deposit BG, PBG etc, can be executed by any Government Banks/Nationalized Banks/ Public Sector Bank/ Scheduled Banks. They shall be as per the format(s) and guidelines prescribed by APGENCO, which are enclosed as part of this Tender Document.
- b) All applicable Insurance Surety Bonds shall be executed by any Insurance Company as per the IRDAI guide lines issued. They shall be as per the format(s) and guidelines prescribed by APGENCO, which are enclosed as part of this Tender Document.

3.7 Terms of payment:

The standard payment terms shall be:

A) MATERIAL PORTION:

- i) **Within the Contractual delivery period:** 80% of the all inclusive price of the materials will be paid within 30 days on presentation of the contractor's commercial invoice and other relevant documents on receipt and acceptance of the material in good condition at site against furnishing of Performance Bank Guarantee/Insurance Surety Bond for 10% value of the contract covering the guarantee period and the Balance 20% payment shall be paid after successful completion of erection, testing and commissioning of the entire equipment.
- ii) **Beyond the contractual delivery period:** 75% of the all inclusive price of the materials will be paid within 30 days on presentation of the contractor's commercial invoice and other relevant documents on receipt and acceptance of the material in good condition at site against furnishing of Performance Bank Guarantee/Insurance Surety Bond for 10% value of the contract covering the Guarantee period and Balance 25%

payment shall be paid after successful completion of erection, testing and commissioning of entire equipment thereafter subject to effective performance of the contract and settlement of liquidated damages etc.

B) ERECTION, TESTING & COMMISSIONING / SUPERVISION OF ERECTION, TESTING & COMMISSIONING:

i) **Within the Contractual delivery period:** 100% payment of the all inclusive price of Erection, testing & commissioning / supervision of erection, testing & commissioning charges of equipment shall be paid within 30 days after successful completion of erection, testing and commissioning of the equipment in full shape on presentation of the contractor's commercial invoice.

ii) **Beyond the contractual delivery period:** 100% payment of the all inclusive price of Erection, testing & commissioning / supervision of erection, testing & commissioning charges of equipment shall be paid within 30 days after successful completion of erection, testing and commissioning of the equipment in full shape on presentation of the contractor's commercial invoice subject to settlement of liquidated damages etc.

Note:

- No interest charges will be paid in case the payment is delayed for any reason.
- Payments shall be made through SBI e-payment system.
- APGENCO has implemented SBI e-payment system for arranging payments towards Supply of Material and Services.
- **Consent Form:** Successful Bidder is requested to furnish the **Consent form (Annexure- VII)** for arranging e-payments against subject Purchase Order duly signed by Authorized Signatory.

A cancelled cheque shall also invariably be enclosed along with consent letter for checking the details furnished.

Further, the following is informed:

Any request for change of Bank Account will not be entertained during the currency of the Contract.

Any request for issue of Cheque or other mode of payment will not be entertained during the currency of the Contract after implementation of automated System.

- If the supplier has received any over payments by mistake or if any amounts are due to the Corporation due to any other reasons, when it is not possible to recover such amount under the contract resulting out of this order, the Corporation reserves the right to collect the same from any other amounts and/or Bank Guarantee given by the supplier due to or with the Corporation.
- When the supplier does not at any time fulfill his obligations in replacing/rectifying etc. of the damages/defective materials in part or whole, promptly to the satisfaction of the corporation's officers, the corporation reserves the right not to accept the bills against subsequent dispatches made by the supplier and under these circumstance only the supplier will be responsible for any demurrage, wharfage or damages occurring to the consignments so dispatched.

3.8 Liquidated damages/ failure and termination:

3.8.1 In the event of any delay in the supplies of ordered materials/execution of work delay beyond the stipulated date of delivery/ delivery schedule, the Corporation reserves the right to recover from the supplier a sum equivalent to 0.5% of the value of delayed

materials/work for each week of delay and part thereof subject to a maximum of 5% of the total value of the order.

- 3.8.2 Alternatively, the Corporation may resort to purchase the materials/equipment from elsewhere at the risk and cost of the supplier and recover all such extra cost incurred by the Corporation in procuring the materials by above procedure.
- 3.8.3 Alternatively, the Corporation may cancel the purchase Order completely or partly without prejudice to its right under the alternatives mentioned above.
- 3.8.4 In case of resource to alternative 3.8.2 and 3.8.3 above, the Corporation shall have the right to repurchase the materials which is readily available in the market to meet the urgency of requirements caused by supplier's failure to comply with the scheduled delivery period irrespective of the fact whether the materials /equipment are similar not.

3.9 Insurance: Supplier shall arrange suitable transit insurance cover at their risk and cost.

3.10 Removal of Rejected Goods and Replacement:

- a) If upon delivery, the material/ equipment is found not in conformity with the specifications stipulated in the purchase order, whether inspected and approved earlier or otherwise, those shall be unacceptable to the Corporation or its authorized representative. A notification to this effect shall be issued to the supplier, normally within 30 days from the date of receipt of materials at our stores.
- b) Supplier shall arrange suitable replacement supplies and remove the rejected goods within 30 days from the date of notification failing which, the goods shall be dispatched to vendor by road transport on 'freight to pay basis' at suppliers risk and cost.
- c) External damages or shortages that are prima-facie the results of rough handling in transit or due to defective packing shall be intimated within a fortnight of the receipt of the materials, spares etc.. In case of internal defects, damage or shortages or any internal parts, which cannot ordinarily be detected on a superficial visual examination, though due to bad handling in transit or defective packing should be intimated within 3 months from the date of receipt of these articles. In either case the damaged or defective materials should be replaced by the supplier free of cost to the company.
- d) If no steps are taken within 15 days of receipt of intimation of defects or such other reasonable time as corporation may deem proper to afford, the company may without prejudice to its other rights and remedies arrange for repairs/ rectification of the defective materials or replace the same and recover the expenditure incurred from the deposits such as EMD, SD and performance guarantees or other monies available with the company or by resorting to legal action.
- e) However, if any advance payment had been made by the Corporation for the goods so rejected on technical ground, rejected materials shall be returned to the supplier after receipt of suitable replacement supplies. If the supplier does not settle the rejection within a period of 60days from the date of notification from stores, rejected goods shall be sent back to supplier at his risk and cost.

3.11 Force Majeure:

- 3.11.1 The supplier shall not be liable for any delay or failing to supply the materials /equipment for reasons of Force Majeure such as Acts of God, Acts of War, Act of Public Enemy, Natural calamities, Fires, Floods, Frost, Strikes, Lockouts etc. Only those causes which have duration of more than 7 days shall be considered for force majeure.

3.11.2 The vendors shall within 10 days from the beginning of such delay notify to the Corporation in writing the cause of delay. The corporation shall verify the facts and grant such extension of time as facts justify.

3.11.3 No price variation shall be allowed during the period of force majeure and Liquidated damages would not be levied for this period.

3.11.4 At the option of the Corporation, the order may be cancelled. Such cancellation, would be without any liability whatsoever on the part of the Corporation. In event of such cancellation, supplier shall refund any amount advanced or paid to him by the Corporation and release the facilities, if any provided by the Corporation.

3.12 Cancellation of Order: The Corporation reserves the right to cancel the order in part or in full by giving two weeks' notice there by if

- The supplier fails to comply with any of the terms of the order.
- The supplier becomes bankrupt or goes into liquidation.
- The supplier makes general assignment for the benefit of the creditors and
- Any Receiver is appointed for the property owned by the supplier.

All the remaining terms and conditions are applicable as per the purchase manual of APGENCO (Available in APGENCO web site).

Sd/-

**SUPERINTENDING ENGINEER
(HYDEL -II)/APGENCO**

SECTION-IV
TECHNICAL SPECIFICATION
8.35 MVA, 11/ 132/√3 KV, 1 PHASE POWER TRANSFORMER

4.0 SCOPE:

This specification covers of Design, Engineering, Manufacture, assembly, testing before supply, delivery at site & Erection, Testing and Commissioning / Design, Engineering, Manufacture, assembly, testing before supply, delivery at site & Supervision of Erection, Testing and Commissioning of 1 No. 8.35 MVA, 11/ 132/√3 KV, 50Hz, Single Phase Generator Transformer along with all fittings, accessories for Machkund Hydro Electric (Jt.) Scheme which are required for efficient and trouble-free operation as specified hereunder.

Note: Dismantling of existing transformer and execution of required modifications for erection of new transformer is in the scope of bidder only.

It is not the intention of the specification to specify completely herein all the details of the design and construction of equipment. However, the equipment shall conform in all respects to high standards of engineering, design and workmanship and shall be capable of performing in continuous commercial operation. The owner will interpret the meanings of drawings and specification and shall have the power to reject any work or material, which, in his judgment is not in accordance therewith. The offered equipment shall be complete with all components necessary for their effective and trouble free operation. Such, components shall be deemed to be within the scope of bidder's supply irrespective of whether those are specifically brought out in this specification and / or the commercial order or not.

4.1 STANDARDS:

The transformer and associated accessories shall conform to the latest issues/amendments of standards as given below, except to the extent explicitly modified in the specifications.

Indian No.	Title	International and Standard Internationally Recognized Standard
IS-2026	Power Transformers	IEC-76
IS-3639	Fittings and Accessories for power transformers	
IS-335	Insulating oils for Transformers and switch gear	IEC-296, BS-148
IS-2099	Bushings for alternating Voltage above 1000 V	IEC-137, BS-223
IS-2705	Current Transformers	IEC-185
IS-375	Marking & arrangements for switch gear, bus bars, Main connections and auxiliary wiring	
IS-3737	Gas operated relays	
IS-1886	Code of practice for installation and maintenance of transformers	
IS-2147	Degrees of protection Provided by enclosures for low voltage switch gear and control	
IS-5	Colours for ready mix paints	

IS-2026: Part-7	Guide for loading of oil immersed transformers
IS-3347	Dimensions for porcelain transformers bushings.
IS-2629	Recommended practice for Hot- dip galvanizing for Iron and steel.
IS-2633	Method of testing if coating of Zinc coated items.
IS-1271	Classification of insulating material for electrical machinery and apparatus in relation to their thermal stability in service.

CBIP Publication no 295 - Manual on transformers

<u>Reference Abbreviation</u>	<u>Name and Address</u>
IEC	International Electro Technical Commission, Bureau Central de la Commission, Electro Technique International, 1, Rue de Vereimbe Geneva, Switzerland.
IS	Indian Standard, Bureau of Indian Standards, Manak Bhavan, 9, Bahadur Shah Zafar Marg, New Delhi - 110 002. INDIA.
BS	British Standards, British Standards Institution, 101, Pentonville Road, N - 19 - ND - UK.
NEMA	National Electric Manufacture Associate, 115, East 44 th Street New York, NY 10017, USA.

Equipment conforming to other internationally accepted standards, which ensure equal or higher quality than the standards mentioned above, would also be acceptable. In case the bidders who wish to offer material conforming to the other standards, salient points of difference between the standards adopted and the specific standards shall be clearly brought out in relevant schedule, four copies of such standards with authentic English translations shall be furnished along with the offer. In case of conflict the order of precedence shall be (i) IS, (ii) IEC, (iii) Other standards. In case of any difference between provisions of these standards and provisions of this specification, the provisions contained in this specification shall prevail.

The electrical installation shall meet requirements of Indian Electricity Rules, 1956 and IS-1886, "Code of practice for installation & maintenance of Transformers" as amended till date.

4.2 SERVICE CONDITIONS:
4.2.1 SITE CONDITIONS:

a. Climate: December to January is the coldest period and there after temperature rises rapidly at first and steadily later till May which is the hottest month. The day temperature increases a little in September and October after which both day and night temperatures begin to drop.

b. Ambient Temperature

Design ambient temp.
for electrical equip. : 50 Deg.C.

4.2.2 SEISMIC FORCES:

The equipment shall be designed to withstand seismic forces corresponding to a seismic coefficient 0.2g in the horizontal direction and 2/3rd of the above value in the vertical direction. Details of the calculations made for the design of the various equipment taking in to account the above seismic forces shall be furnished to the purchaser.

4.3 Auxiliary Power Supply:

Auxiliary electrical equipment shall be suitable for operation on the following supply system.

- | | | |
|----|--------------------------------------|--|
| a. | Power Devices
(like drive motors) | 415 V, 3 phase 4 wire 50Hz.
neutral grounded AC supply. |
| b. | DC Alarm, control
devices | 220 V DC, ungrounded 2 wire and protective |
| c. | Lighting | 240 V, single phase 50 Hz. AC supply |

Each of the foregoing supplies shall be made available by the Purchaser at the terminal point for transformer for operation of accessories and auxiliary equipment. Bidder's scope include supply of interconnecting cables, terminal boxes etc., The above supply voltage may vary as indicated below and all devices shall be suitable for continuous operation over the entire range of voltages.

- i) AC supply : Voltage + 10% / -15%; Frequency +/- 5%
- ii) DC supply : -15% to +10%.

4.4 PRINCIPAL PARAMETERS: The transformer shall conform to the following specific parameters:

S.No		Particulars	Units	8.35 MVA, 11/ 132/√3 KV, 50Hz, Single Phase Generator Transformer
1.	a	Service		Generator Transformer, Suitable for Outdoor
	b	Type of mounting		On wheels: mounted on rails
2.		Rating		
	a)	Rated Continuous Capacity	KVA	8350
	b)	Type of Cooling		O.F.Water cooled or any upgraded.
	c)	Rated Voltage of HV	KV	132/√3
	d)	Rated Voltage of LV	KV	11
	e)	Temp.rise of oil over ambient air temp. of 50 ⁰ c	° C	50
	f)	Temp.rise of Wdgs over ambient air temp. of 50 ⁰ c	° C	55

	g)	Suitable for system Frequency	Hz	50 +/-5%
3.		No.of Phases		1
4.		Connections		
	a)	High Voltage		Star / HV neutral is separately earthed to the earth mat
	b)	Low Voltage		Delta
	c)	Vector group Reference		YNd1
	d)	Winding material		Electrolytic copper
5.		System earthing		Solidly grounded neutral system on 132 KV side
6.		Rated voltage, Ur		
		H.V. winding	KV	132/ $\sqrt{3}$
		L.V. winding	KV	11
		No of Off load taps		5
		No load HV voltages at different taps	V	83617, 80878, 78589, 76300, 74011
		Current HV side	A	100.2, 103.2, 106.1, 109.3, 112.8
		LV side current	A	760 A
7.		Over Voltage operating		125% for 1 minute 140% for 5 seconds
8.		Minimum Air core reactance of HV windings	%	20
9.		Minimum Knee Point Voltage	%	110 % rated volage
10.		Max. flux density in any part of core and yoke at rated MVA, frequency and normal voltage	Tesla	1.6
11.		Insulation levels for windings: end of HV		HV LV Neutral
		a)1.2/50 microsecondwave shape impulsewithstand	kVp	650 95 170
		b) Power frequency voltage withstand	kV rms	275 38 70
		c) Maximum continuous operating system voltage	kV rms.	145 17.5
12.		Type of Winding Insulation a) HV/LV winding		Segregated
13.		System short circuit level and duration for which the transformer shall be capable to withstand thermal and dynamic stresses	kA rms/sec	For 132kV System 40kA for 3 sec.
14.		Noise level at rated voltage and frequency (Maximum)		75 dB

15.		Impedance at rated Current & C/S at 75°C (sub. to IS-2026 tolerance)	%	8.1		
16.	i.	Efficiency based on the guaranteed loss figures at 75°C at UPF	%	UPF		
	a)	At full load		99.26		
	b)	At ¾ full load		99.37		
	c)	At ½ full load		99.44		
	d)	At ¼ full load		99.35		
		Efficiency at 0.8 P.F lagging				
	a)	At full load		99.07		
	b)	At ¾ full load		99.21		
	c)	At ½ full load		99.30		
	d)	At ¼ full load		99.19		
	ii.	Load at which the max. efficiency occurs	%	44.72		
	iii.	Max. efficiency	%	99.44		
17.		Regulation at full load at 75°C	%			
	a)	At U.P.F		0.868		
	b)	At 0.8 P.F lagging		4.819		
18.		No load Current at rated Voltage& C/S (Approx.)	%	1.5		
19.		Terminal arrangement				
	a)	High Voltage		Copper pipe		
	b)	Low Voltage		Copper pipe		
20.		Minimum clearances in air	mm	Phase to Phase Phase to ground		
		HV		1430 1067		
		LV		330 310		
		Bushings		HV	LV	Neutral (HV/LV)
		i) Voltage Rating	kV rms.	145	17.5	36
		ii) Current Rating	Amps.	As per requirement		
		iii) Insulation level				
		a) Lighting impulse Withstand (kVp)		650	95	170
		b) One minute power Frequency withstand voltage (kV rms.)		275	38	70
		c) Creepage distance (mm)		3625	437.5	900
21.		H.V. Line Bushing CT				

		CT ratio		No. of CT cores & Accuracy
		150/1A		2 & PS
22.		H.V. Neutral CT		
		CT ratio		No. of CT cores & Accuracy
		150/1A		2 & PS
23.		Reference standard		I.S 2026 (LATEST)

4.5 GENERAL TECHNICAL REQUIREMENTS

4.5.1 Duty Requirements

4.5.2. The Power transformer shall be capable for Bi-directional flow of rated power.

4.5.3. The transformer and all its accessories like CTs etc., shall be designed to withstand without injury, the thermal and mechanical effects of any external short circuit to earth and of short circuits at the terminals of any winding of values specified above for a period of 1 sec.

4.5.4. The transformer shall be capable of being loaded in accordance with IS:2026: Part-7 upto loads of 150%. There shall be no limitation imposed by bushings, tap changer etc.

4.5.5. The transformer shall be capable of being operated without danger on any tapping at the rated kVA with voltage variation of plus or minus 10% corresponding to the voltage of that tapping with normal temperature rise. The design adopted to achieve this shall be indicated in detail in the tender.

4.5.6. Radio interference:

i) The transformers shall be designed with particular attention to suppression of maximum harmonic voltage. Especially the third and fifth so as to eliminate wave form distortion and minimize interference with communication circuits.

ii) The noise level, when energized at normal voltage and frequency running shall not exceed, when measured under standard conditions, the values specified in NEMA, TR-I

4.5.7. Transformer shall be capable of operating under the natural cooled condition upto the specified load. Transformers shall be fitted with adequate radiators capable of dissipating 100per cent of the loss at continuous maximum rating without the calculated winding hot spot temperature exceeding 105 deg.C at continuous maximum rating.

4.5.8. Transformer shall be capable of withstanding thermal and mechanical stress caused by symmetrical or asymmetrical faults on any winding.

4.5.9. Transformer shall accept, without injurious heating, combined voltage and frequency fluctuation, which produces the following over fluxing conditions:

i) 125% for 1 minute 140% for 5 seconds

ii) Bidder shall also indicate 150% and 170% over voltage withstand time.

- iii) Over fluxing withstand characteristics upto 140% shall be submitted along with the bid.

4.6 TRANSFORMER LOSSES

The no load loss in kilowatts at rated voltage and rated frequency, load losses and total loss in kilowatts at rated output, rated voltage and rated frequency shall be guaranteed.

Further the Auxiliary losses of the transformer shall not be greater than 10KW failing which the penalty is applicable as mentioned in relevant clause.

4.6.1. Liquidated Damages for Shortfall In Losses

Penalty will be levied for every KW of deviation from total losses for quoted efficiency at Unity power factor and at 80% load from the guaranteed value of losses quoted, at the rate of Rs. 3,20,000 (Three lakh twenty thousand) per KW. Similarly, for the Auxiliary loss beyond 10kw also, the penalty is applicable as mentioned above.

The liquidated damages shall be separately evaluated from:

- i) The excess of the test values of the no load loss and auxiliary loss in kW over the corresponding guaranteed values.
- ii) Excess of the difference between the test values of the total loss and no load loss plus auxiliary loss in kW over the differences of the corresponding guaranteed values.

No tolerance shall be permitted over the test values of the losses. For fraction of a kW, the liquidated damages shall be applied pro-rata. If the test values of the losses are less than the guaranteed values, no bonus will be given.

4.7 Clearances:

Minimum clearances, transformer bay width and the height shall be designed on par with the existing transformers.

The above aspects may be noted while designing the transformer size.

4.8 Construction Details:

The features and construction details of power transformer shall be in accordance with the requirements stated hereunder:

4.8.1. Tank and Tank Accessories

4.8.1.1 Tank

- a) Tank shall be of welded construction and fabricated from tested quality low carbon steel of adequate thickness.
- b) All seams and those joints not required to be opened at site shall be factory welded and wherever possible they shall be double welded.

After completion of tank construction and before painting, dye penetration test shall be carried out on welded parts of jacking bosses, lifting lugs and all load bearing members.

- c) Tank stiffeners shall be provided for general rigidity and these shall be designed to prevent retention of water.
- d) The tanks shall be designed to withstand:
 - i) Mechanical shocks during transportation
 - ii) Vacuum filling of oil at 10 torr.
 - iii) Continuous internal pressure of 35 kN/m² over normal hydrostatic pressure of oil.
 - iv) Short circuit forces.

- e) Wherever possible the transformer tank and its accessories shall be designed without pockets wherein gas may collect. Where pockets cannot be avoided, pipes shall be provided to vent the gas into the main expansion pipes.
- f) Adequate space shall be provided at the bottom of the tank for collection of sediments.
- g) The shields shall be such that no magnetic fields shall exist outside the tank. They shall be of magnetically permeable material. If required impermeable shields shall be provided at the coil ends. Tank shield shall not resonate when excited at the natural frequency of the equipment. Bidder shall confirm use of tank shields in the schedule of additional information.
- h) Suitable guides shall be provided in the tank for positioning the core and coil assembly. Each tank shall be provided with
 - i) Lifting lugs suitable for lifting the equipment complete with oil.
 - ii) A minimum of four jacking pads in accessible position at 500 mm height to enable the transformer complete with oil, to be raised or lowered using hydraulic or screw jacks.
 - iii) Suitable haulage holes shall be provided.

4.8.1.2 Tank Cover:

- i. The tank cover shall be sloped to prevent retention of rain water and shall not distort when lifted.
- ii. At least two adequately sized inspection openings, one at each end of the tank shall be provided for easy access to bushings and earth connections. The inspection covers shall not weigh more than 25 Kg
- iii. The tank covers shall be fitted with pockets at the position of maximum oil. The inspection covers shall be provided with two handles. Thermo well pockets for inserting the bulbs of oil & winding temperature indicators and RTDs. It shall be possible to remove these bulbs without lowering the oil in the tank.
- iv. Bushings, turrets, covers of inspection openings, thermometer, pockets etc., shall be designed to prevent ingress of water into or leakages of oil from the tank.
- v. All bolted connections shall be fitted with weather proof, hot oil resistant gasket in between, for complete oil tightness. If gasket is compressible, metallic stops shall be provided to prevent over-compression.

4.8.2. Axles and Wheels:

- i. The transformers are to be provided with flanged bi-directional wheels and axles. These shall be so designed as not to deflect excessively to interfere with the movement of the transformer. Wheels shall be provided with suitable bearings which shall be rust and corrosion resistant. Fittings for lubrication shall also be provided.
- ii. Suitable locking arrangement along with foundation bolts shall be provided for the wheels to prevent accidental movement of transformer.
- iii. The wheels are required to swivel and they shall be arranged so that they can be turned through an angle of 90 deg. when the tank is jacked up to clear of rails. Means shall be provided for locking the swivel movements in positions parallel to and at right angles to the longitudinal axis of the tank.
- iv. The rail track gauge shall be 5'-6" (1676 mm) along longer axis as well as along shorter axis. There shall be one pair of rails in either axis, with the above gauge.
- v. To facilitate uniform distribution of transformer weight two nos. props each on front & rear side along longer axis to be provided, if necessary.

- vi. The base of each tank shall be so designed that it shall be possible to move the complete unit by skidding in any direction without injury when using plates or rails.

4.8.3 **Anti Earthquake Clamping Device:**

To prevent transformer movement during earthquake, clamping device shall be provided for fixing transformer to the foundation. The Bidder shall supply necessary bolts for embedding in the concrete foundation. The arrangements shall be such that the transformer can be fixed to or unfastened from these bolts as desired. The fixing of the transformers to the foundations shall be designed to withstand seismic events to the extent that a static co-efficient of 0.2g. applied in the direction of least resistance to that loading will not cause the transformer or clamping devices as well as bolts to be over stressed.

The details of the device used and its adequacy shall be brought out in the additional information schedule.

4.8.4 **Conservator Tank**

- i. The conservator tank shall have adequate capacity between highest and lowest visible levels to meet the requirement of expansion of the total cold oil volume in the transformer and cooling from minimum ambient temperature to 90 deg.C and vice versa.
- ii. The conservator tank shall be bolted into position so that it can be removed for cleaning purposes.
- iii. The conservator shall be fitted with magnetic oil level gauge with low level electrically insulated alarm contact.
- iv. Conservator shall be provided in such a position as not to obstruct the electrical connections to the transformer.

4.8.5 **Pressure Relief Device**

Adequate No. of pressure relief devices shall be provided at suitable locations which shall be of sufficient size for rapid release of any pressure that may be generated in the tank and which may result in damage to the equipment. The device shall operate at a static pressure of less than the hydraulic test pressure of transformer tank. It shall be mounted direct on the tank. One set of electrically insulated contacts shall be provided for alarm/tripping along with the recommendations. Oil gushed out from the transformer shall be directed and shall be able to be collected in the tank provided for this purpose (collecting tank is in customer scope).

4.8.6. **Buchholz Relay**

A double float type Buchholz relay shall be provided. All the gases evolved in the transformer shall collect in this relay. The relay shall be provided with a test cock suitable for a flexible pipe connection for checking its operation and taking gas sample. A copper or stainless steel tube, shall be connected from the gas collector to a valve located about 1200 mm above ground level to facilitate sampling, with the transformer in service. The device shall be provided with two electrically independent ungrounded contacts, one for alarm on gas accumulation and the other for tripping on sudden rise of pressure.

4.8.7. **Temperature Indicator**

a) **Oil Temperature Indicator (OTI)**

- i. Transformers shall be provided with a 150 mm dial type thermometer for top oil temperature indication. The thermometer shall have adjustable, electrically independent ungrounded alarm and trip contacts, maximum reading pointer and resetting device mounted in the local cabinet. A temperature sensing element suitably located in a pocket on top oil shall be furnished. This shall be connected to the OTI by means of capillary tubing. Accuracy class of OTI shall be plus or minus 1.0% or better. The OTI shall provide 4-20mA analog signal to the Remote Oil Temperature Indicator of customer.

- ii. OTI Temperature RTD's (PT 100) type shall be provided to extend the same to Customer Panels.

b) **Winding Temperature Indicator (WTI)**

A device for measuring the hot spot temperature of each of the windings shall be provided (HV, LV,).

It shall comprise of the following:

- I. Temperature sensing element.
- II. Image coil.
- III. Auxiliary CTs, if required to match the image coil, shall be furnished and mounted in the cooler control cabinet.
- IV. 150 mm dial local indicating instrument with maximum reading pointer mounted in local cabinet and with four adjustable electrically independent ungrounded contacts (besides that required for control of cooling equipment), one for high winding temperature alarm and one for trip. The WTI shall provide 4-20mA analog signal to the Remote Winding Temperature Indicator of customer.
- V. Winding Temperature RTD's (PT 100) type shall be provided to extend the same to Customer Panels.
- VI. Accuracy class of WTI shall be plus or minus 1.0% or better.
- VII. All cables required for connection between the transformer equipment to the Transformer Marshaling box /control cabinet of suitable type (Armored) shall be in Bidder's scope of work.

4.8.8 Earthing Terminals:

Two (2) earthing pads (each complete with two (2) Nos. tapped holes, M 10 bolts, plain and spring washers) suitable for connection to 50 x 8 galvanised steel flat shall be provided each at position close to the two (2) diagonally bottom corners of tank. Earthing strip upto the ground level shall be provided by the Bidder.

4.8.9 Core:

Bidder shall offer the Core for inspection and approval by the Purchaser during the manufacturing stage. Bidder's call notice for the purpose should be accompanied with the following documents as applicable as a proof towards use of prime core material.

- a) Invoice of the supplier.
- b) Mills test certificate.
- c) Packing list.
- d) Bill of loading
- e) Bill of entry certificate to customs.

Core material shall be directly procured either from the manufacturer or through their accredited marketing organization of repute and not through any agent.

- i. The core shall be constructed from high grade non-aging cold rolled super grain oriented silicon steel laminations, of H1-B grade steel or superior grades.
- ii. The design of the magnetic circuit shall be such as to avoid static discharges, development of short circuit paths within itself or to the earthed clamping structure and production of flux component at right angles to the plane of laminations which may cause local heating.
- iii. The insulation of core to bolts and core to clamps plates shall be able to withstand a voltage of 2 kV RMS for one minute.
- iv. Core and winding shall be capable of withstanding the shock during transport, installation, service and adequate provision shall be made to prevent movement of core and winding relative to tank during these conditions.
- v. All steel sections used for supporting the core shall be thoroughly sand blasted after cutting, drilling and welding.

- vi. Each core lamination shall be insulated with a material that will not deteriorate due to pressure and hot oil.
- vii. The supporting frame work of core shall be so designed as to avoid presence of pockets which would prevent complete emptying of the tank through drain valve or cause trapping of air during oil filling.
- viii. The maximum flux density in any part of the core and yoke at rated MVA voltage and frequency at any tap shall not exceed 1.6 tesla. A margin of 10 to 12.5% for over fluxing may be provided for the worst combination of voltage and frequency within the ranges specified. The bidder shall provide saturation curve of the core material proposed to be use and calculations.

4.8.10. Windings:

- i. The Bidder shall ensure that windings of 145KV class transformer are made in dust proof, conditioned atmosphere. The Bidder shall furnish the facilities available at this work along with the Bid.
- ii. The conductors shall be of electrolytic grade copper.
- iii. The insulation of transformer windings and connections shall be free from insulating compounds which are liable to soften, ooze out, shrink or collapse or be catalytic and chemically active in transformer oil during service.
- iv. Coil assembly and insulating spacers shall be so arranged as to ensure free circulation of oil and to reduce the hot spot of the winding.
- v. Better insulating material shall be used and compression of the windings after drying out shall be carried out at a pressure exceeding one and a half to twice the force which can occur in the transformer; to impart greater mechanical strength to the windings against heavy short circuit stresses.

4.9 Insulating Oil:

- a) The quality of the oil supplied with transformer shall conform to the oil parameters specified below. No inhibitors shall be used in the oil. The oil used shall be non - PCB (Poly Chlorinated Biphenyl) type. The oil samples will be drawn as follows:
 - i) Prior to filling
 - ii) Before and after heat run test
 - iii) Before energizing

All tests as per IS:335 shall be conducted on all samples.

- b) Sufficient quantity of oil necessary for first filling of all tanks, and radiator at the proper level along with 10% extra oil for topping up shall be supplied in non-returnable containers suitable for outdoor storage.

- c) The Bidder may dispatch the 4 MVA Transformer filled with oil. If not dispatched with oil necessary precautions such as filling of the tank with Dry air or Nitrogen filling shall be made.
- d) The Bidder shall warrant that oil furnished is in accordance with the following specifications:

4.9.1. GUARANTEE TECHNICAL PARTICULARS: EHV Grade Transformer oil (Ty-II) shall comply with IS 335:2018 (or) IEC 60296:2020, IEC 61125:2018 and ASTM D3487:2016 standards.

S.No.	Characteristics	Requirement	Method of test/Std.
1	Kinematic viscosity in CST(sqmm/sec) @ 40 °C (max) @ 0°C (max)	15 mm ² /s, 1800 mm ² /s,	IS: 1448(part 25)
2	Pour point (max)	- 10°C , Max, mg/kg	IS : 1448 (part 10/Sec)
3	Water content (max)	40 mg/ kg for delivery in drums	IEC 60814
4	Electric strength (breakdown voltage) (min) new unfiltered oil after filtration	30 KV (rms), Min 70KV (rms), Min	IS 6792
5	Density at 20° C	0.895 g/ml,Max	IS 1448(Part 16)
6	DDF at 90° c	0.005,Max	IS 16086
Refining/Stability			
7	Appearance	Clear, free from sediment and suspended matter	-----
8	Acidity	0.01 mg KOH/g,Max	IEC 62021-1
9	Interfacial tension (min)	No General requirement	ASTMD971
10	Corrosive sulphur	Not corrosive	DIN 51353
11	Potentially corrosive sulphur	Not corrosive	IS 16310
12	DBDS	Not detectable(< 5 mg/kg)	IS 16497(Part 1)
13	Inhibitors according to IS 13631/IEC 60666	(U) Uninhibited oil: not detectable(<0.01%)	IS 13631
14	Metal passivator additives according to IS 13631/IEC 60666	Not detectable(<5 mg/kg)	IS 13631
15.	Other additives	Additives shall not be present	
16	2-Furfural and related compounds content	Not detectable(<0.05 mg/kg) for each individual compound	IS 15668
Performance			
17	Oxidation stability	For oils with other antioxidant additives and metal passivator additives.	IS 12422(Method C) Test duration (U) Uninhibited oil: 164 h
18	Total acidity	1.2 mg KOH/g,Max	1.9.4 of IS 12422
19	Sludge	0.8%,Max	1.9.1 of IS 12422
20	DDF at 90° c	0.500,Max	1.9.6 of IS 12422

Health, Safety and Environment(HSE)			
21	Flash point	135°C,Min	IS 1448(Part 21)
22	PCA content	3%,Max	IP 346
23	PCB content	Not detectable(<2 mg/kg)	IS 16082

- e) Oil samples taken from the transformer after the completion of site processing and tested in the approved manner shall be shown to have the above values before commissioning of the transformer.

4.10 Radiators for cooling

Radiators shall be so designed as to avoid pockets in which moisture may collect and shall withstand the pressure tests. Radiators shall be detachable type mounted to the tank or as a bank with necessary valves and drain plugs. Adequate support and stiffeners required for mounting of radiators and to avoid cantilever loading shall also be considered and supplied. Blanking plates with gaskets shall be supplied in case of removal of any radiator and blocking the same. Air release plugs shall be provided for each radiator element. All valves shall be of stainless steel or suitable gun metal valves as per approval. In case of a separate banks are provided necessary piping with expansion bellows and valves shall be considered. All piping shall be with flanged gasket joints. Cast iron shall not be used.

4.11 Terminal Arrangements

4.11.1 Bushings

- a) The electrical and mechanical characteristics of bushings shall be in accordance with IS:2099 and IS:3347(Part III/Section I).
- b) 145 kV bushings shall be oil impregnated paper condenser type.
LV bushings shall be 17.5 KV shall be of porcelain.
36kv HV Neutral bushings shall be oil impregnated paper condenser type.
Bushing shall be as per technical particulars furnished.
- c) Condenser type bushings shall be provided with
 - i) Oil level gauge
 - ii) Oil filling plug and drain valve if not hermetically sealed
 - iii) Tap for capacitance/tan delta test
- d) When bushings have an under-oil end of reentrant form, the pull through lead shall be fitted with a gas bubble deflector.
- e) Where current transformers are specified, the bushings shall be removable without disturbing the current transformers.
- f) Bushings of identical rating shall be interchangeable.
- g) Porcelain used in bushing manufacture shall be homogenous, free from laminations, cavities and other flaws or imperfections that might affect the mechanical or dielectric quality and shall be thoroughly vitrified tough and impervious to moisture.
- h) Glazing of porcelain and bushing shall be of uniform brown colour free from blisters and burrs.
- i) Special precaution shall be taken to exclude moisture from paper insulation during manufacture, assembly, transport and erection.
The surface of all paper insulation shall be finished with non-hygroscopic varnish which cannot be damaged easily.
- j) Clamps and fittings shall be of hot dip galvanised steel.
- k) Bushing turrets shall be provided with vent pipes which shall be connected to route any gas collection through the Buchholz relay.

4.11.2 Terminal Connectors

- a) Terminal connectors for HV side shall be suitable for single Zebra ACSR (28.62mm) and suitable for horizontal or vertical takeoff. LV side shall be suitable for XLPE cable termination. Confirmation shall be obtained regarding type of terminal connectors.
- b) Bushing terminals shall be provided with terminal connectors of approved type and size for connection to external parts. Terminal connectors offered must have been successfully type tested as per IS 5561.
- c)
 - i) All castings shall be free from blow holes, surface blisters, cracks and cavities. All sharp edges and corners shall be blurred and rounded off. The aluminum alloy castings, if used, shall conform to designation A6 of IS 617.
 - ii) No part of a clamp shall be less than 10 mm thick.
 - iii) All steel bolts & nuts shall be hot dip galvanized conforming to IS : 1867 part xiii and spring washers shall be Electro galvanized to IS : 1573.
 - iv) For bimetallic clamp, copper alloy liner of minimum thickness of 2 mm shall be supplied which shall fix tightly.
 - v) Flexible connectors shall be made from tinned copper sheets.
 - vi) Size of terminal/conductor for which the clamp is suitable and rated current under site conditions shall be embossed/punched on each component of the clamp, except hardware.
 - vii) All current carrying parts shall be designed and manufactured to have minimum contact resistance.
 - viii) Clamps shall be designed corona controlled.
 - ix) The short time rating of terminal connector shall correspond to the short time rating of respective bushing.

4.11.3 Bushing current transformers

- a. Current transformers shall comply with IS: 2705. Current transformers of ratio 25/1 Amp with 3 cores class PS, Class PS, Class 5P10-15 VA class type and burden on HV side shall be provided. On HV neutral, 2 cores of PS class similar to that of HV side shall be provided. Current transformers of ratio 300/1 Amp with 3 cores class PS, Class 0.2S-15 VA, Class 5P10-15 VA class type and burden on LV side shall be provided.
- b. It shall be possible to remove turret mounted CTs from the transformer tank without removing the tank cover. Necessary precaution shall be taken to minimize the eddy currents and local heat generated in the turret.
- c. All secondary leads shall be brought to a terminal box near each bushing. These terminals shall be wired out to Marshaling box / Control Cabinet using separate cables for each core.
- d. The CT meant for supplying thermal image coil of winding temperature indicator shall be provided with Suitable ratio and class CT preferably for the LV winding of the Transformer.

4.11.4 Terminal Marking

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

4.12 Neutral Earthing Arrangement

- a) The neutral terminals of the star connected windings shall be brought to the ground level by a suitable copper/Galvanised Iron flat-grounding bar which shall be supported from the tank by porcelain insulators.
- b) The end of the grounding bar shall be brought to the ground level, at a convenient point, for connection to Purchaser's ground network through two (2) 50x8 mm galvanised steel flats. The connection shall be made by using two(s) bolted neutral grounding terminals with necessary accessories.

4.13 Off Circuit Tap Changer (OCTC):

- i) The Off Circuit tap changer mechanism shall be provided in the neutral end of HV winding and shall permit variation of HV voltage over a range of 5 taps specified at clause No.4.4: Principal parameters for constant voltage on LV side.
- ii) **Transformer Marshaling Box**- The terminal blocks shall be of Type CATDM4 of Elemex make for C.Ts and CATM4 for other circuits. The cabinet shall have all necessary devices meant for local temp. indicators. All the contacts of various protective devices mounted on the transformer shall also be wired up to the terminal board in the cabinet. All the secondary terminals of the bushing CT's shall also be wired upto the terminal board at the cabinet.
- iii) The control cabinet shall house the temperature indicators, aux.CT's and the terminal boards meant for termination of various alarm and trip contacts.
- iv) Each of the terminal blocks in the above panels should have 20% spare terminals exclusively for owner's use. All the necessary terminals for remote connection to owner's panel shall be wired upto the control cabinet.

Necessary shorting of terminals shall be done at the control cabinet, All the CT secondary terminals in the Cabinet shall have provision for short circuiting to avoid CT open circuit while it is not in use.

One potential free initiating contact for all the required indications shall be wired independently to the terminal blocks of Marshaling box exclusively for owner's use.

- v) The sheet steel used shall be at least 2.0 mm thick. The degree of protection shall be IP 55 in accordance with IS 2147.
- vi) The temperature indicators shall be so mounted that the dials are not above 1600 mm from ground level. Glazed door of suitable size shall be provided for convenience of reading.
- vii) A space heater, and cubicle lighting with ON-OFF switch shall be provided.

4.14 Terminal Blocks

- i) The terminal blocks to be provided shall be fully enclosed with removable covers and made of molded, non-inflammable plastic material with block and barriers molded integrally. Such block shall have washer and binding screws for external circuit wire connections, a white marking strip for circuit identification and molded plastic cover. All terminals shall be clearly marked with identification numbers or letters to facilitate connection to external wiring.

- ii) All internal wiring to be connected to the external equipment shall terminate on terminal blocks, preferably vertically mounted on the side of each panel. The terminal blocks shall be 1100 V grade and have 10 amps continuous rating, molded piece, complete with insulated barriers, non-disconnecting stud type terminals, washers, nuts and lock nuts. Screw less, spring pressed cage clamp type terminal blocks also are acceptable. Terminal block design shall include a white fiber marking strip with clear plastic, slip-on/ clip-on terminal cover. Markings on the terminal strips shall correspond to wire number and terminal numbers on the wiring diagrams.
- iii) Terminal blocks for current transformer secondary leads shall be provided with test links and isolating facilities. Also current transformer secondary leads shall be provided with short circuiting and earthing facilities.
- iv) Unless otherwise specified, terminal blocks shall be suitable for connecting the following conductors on each side.
 - a) For all circuits except current transformer circuits minimum of one no. 2.5 mm² copper.
 - b) For all CT circuits minimum of four nos. 2.5 mm² copper.
- v) There shall be a minimum edge to edge clearance of 250 mm between the first row of terminal blocks and the associated cable gland plate. Also the clearance between two rows of terminal blocks shall be a minimum of 150 mm.
- vi) Arrangement of the terminal block assemblies and the wiring channel within the enclosure shall be such that a row of terminal blocks is run parallel and in close proximity along each side of the wiring duct to provide for convenient attachment of internal panel wiring. The side of the terminal block opposite the wiring duct shall be reserved for the owner's external cable connection. All adjacent terminal blocks shall also share this field wiring corridor. A steel strip shall be connected between adjacent terminal block rows at 450 mm intervals for support of incoming cables.
- vii) The number and sizes of the owner's multi core incoming cable will be furnished to the Bidder after placement of the order.
- viii) The gaskets shall be of neoprene rubber.

4.15 Painting

The internal and external surfaces including oil filled chambers and structural steel work to be painted shall be shot or sand blasted to remove all rust and scale of foreign adhering matter or grease. All steel surfaces in contact with insulating oil shall be painted with two coats of heat resistant, oil insoluble, insulating varnish.

All steel surfaces exposed to weather shall be given a primary coat of zinc chromate, second coat of oil and weather resistant varnish of a colour distinct from primary and final two coats of glossy oil and Epoxy light gray paint in accordance with shade no.631 of IS-5.

All paints shall be carefully selected to withstand extremes of weather. The paint shall not scale off or crinkle or be removed by abrasion due to normal handling.

The minimum thickness of each coat of outside painting of tank shall be 20 microns and the total thickness shall be minimum 80 microns.

4.16 Bolts and nuts

All bolts and nuts exposed to weather shall be hot dip galvanised/cadmium plated.

4.17 Wiring and Cabling

- a) All external cabling will be carried out by owner based on wiring diagram & interconnection schedule to be supplied by the Bidder.

Cable box/sealing end shall be suitable for following types of cables:-

- i) 415 Volt power : 1100 Volt grade PVC insulated stranded copper conductor cable with armour.
- ii) Control : 1100 Volt grade PVC insulated stranded copper conductor cable with armour.
- b) Compression type cable connector shall be provided for termination of power and control cables.
- c) All controls, alarms, indicating and relaying devices provided with the transformer shall be wired upto the terminal blocks inside the Control Cabinet.
- d) All devices and terminal blocks with the Control Cabinet shall be clearly identified by symbols corresponding to those used on applicable schematic or wiring diagrams.
- e) not more than 2 wires shall be connected to one terminal. Each terminal shall be suitable for connecting two 7/0.737 mm stranded copper conductors from each side.
- f) All internal wiring shall be securely supported, neatly arranged, readily accessible and connected to equipment terminals and terminal blocks.
- g) Engraved code identification plastic ferrules marked to correspond with schematic diagrams shall be fitted at both ends of wires. Ferrules shall fit tightly on wires and shall not fall off when the wire is disconnected from terminal block.

4.18 Fittings & Accessories:-

The following fittings & Accessories shall be provided with each transformer covered in this specification.

- a) Conservator for main tank, with oil filling hole and cap, isolating valves, drain valve, magnetic oil level gauge with low level alarm contacts, minimum, maximum, normal oil level indicator and dehydrating breather with oil seal.
- b) **prismatic oil level gauge and silicagel breather. Containers for silica gel breathers shall be of metal.**
- c) Pressure relief device with alarm contact
- d) Buchholz relay double float type with one shut off valve 80 mm size on conservator side bleeding pipe with pet cock at the end to collect gases and alarm and trip contacts.
- e) Air release plug
- f) Inspection openings and covers
- g) Bushing with metal parts and gaskets to suit the termination arrangement.
- h) Winding temperature indicators for local and remote mounting.
- i) Oil temperature indicators for local and remote mounting.
- j) Cover lifting eyes, transformer lifting lugs, jacking pads, towing holes and core and winding lifting lugs.
- k) Protected type mercury or alcohol in glass thermometer.
- l) Bottom and top filter valves with threaded adopters on diagonally opposite corners of size 50 mm, 2 Nos. sampling valves at top and bottom of main tank and drain valve with blanking flange size 80/100 mm.
- m) Rating and diagram plates on transformers and auxiliary apparatus.
- n) Earthing terminals.
- o) Flanged bi-directional wheels.
- p) Marshalling Box / Control Cabinet.
- q) Off Load tap changing equipment
- r) Drain valves/plugs shall be provided in order that each section of pipe work can be drained independently.
- s) Bushing CTs for protection and winding temperature indicator

- t) Insulating oil
- u) Terminal marking plate
- v) Jacking pads.
- w) Lifting bollords
- x) Haulage lugs
- y) Cover Lifting lugs
- z) Valve schedule plate

Note : The fittings listed above are only indicative and any other fittings which generally are required for satisfactory operation of the transformer are deemed to be included.

4.19 Mandatory Spares:

The scope of supply shall include the required mandatory spares for 8.35 MVA, 132/sqrt(3)/11 KV Power Transformer as indicated below.

- 1) HV Bushing with metal parts – 1 No.
- 2) LV Bushing with copper stud and metal parts – 1 No.
- 3) HV Neutral Bushing with metal parts - 1No.
- 4) OTI with 2micro switches - 1 set.
- 5) Winding temperature indicator
with 2micro switches – 1 No. each.
- 6) MOG with complete contacts – 1 set.
- 7) Buchholz relay - 1 No.
- 8) PRV - 1 No.
- 9) Silica gel breather(5 KG Capacity) – 1 No.

4.20 Special Tools and Tackles

The Bidder shall include in his proposal any special erection and maintenance tools required including hydraulic jacks and their capacities according to the specialties of the equipment. The list of such special tools shall be given in the bid and price of these shall be indicated separately.

4.21 Spare parts and maintenance equipment

Supplier shall indicate in its proposals optional spares required for the trouble free operation of the equipment for five years. The prices of spares and gaskets shall be quoted separately.

- a. Engineering documents required by this specification.
- b. The Inspection of the materials and components on request.
- c. Reference to contractor's work procedures appropriate to each activity.
- d. Inspection during fabrication/construction.
- e. Final inspection and test.

4.22 TESTS

Manufacturer shall submit certificate of conformance certifying that the material conforms to the standards including but not limited to **relevant parts of IS 2026: Power Transformers** and the standard **IS 335 for New Insulating Oils**.

1. General Requirements for Routine, Type and Special Tests:

Transformers shall be subjected to tests as Specified below:

Tests shall be made at the manufacturer's works, unless otherwise agreed as per the manufacturing quality plan (MQP) to be submitted by the manufacturer.

All external components and fittings that are likely to affect the performance of the transformer during the test shall be in place.

The test basis for all characteristics other than insulation is the rated condition, unless the test clause states otherwise.

All measuring systems used for the tests shall have certified, traceable accuracy and be subjected to periodic calibration, according to IS/ISO 9001.

Where, it is required that test results are to be corrected to a reference temperature, this shall be for Oil immersed transformers: 75°C.

2: Type tests:

The equipment offered shall be type tested by the bidder as per the relevant Indian/International standards. The type tests must have been conducted on 132 KV or higher voltage rating Power / Generator Transformers of similar or higher capacity (MVA). Also, the Dynamic Short Circuit withstand test as per IS2026 Part-5 must have been conducted on 132KV or higher voltage rating Power/Generator Transformers of similar or higher capacity (MVA) at CPRI. The type test reports and Dynamic Short Circuit withstand test reports shall not be older than **Ten years** as on date of bid opening.

Following Type Tests conducted on 132 KV or higher voltage rating Power/Generator Transformers of similar or higher capacity (MVA) as per the relevant Indian/International standards including but not limited to, shall be produced for **Approval of QC** before inspection call.

a) Temperature-rise test

b) Dielectric type tests

And Short Circuit withstand test

3: All routine tests and special tests including but not limited to, shall be conducted at the time of inspection.

Routine Tests:

a) Measurement of winding resistance

b) Measurement of voltage ratio and check of phase displacement

c) Measurement of short-circuit impedance and load loss

d) Measurement of no load loss and current.

e) Dielectric routine tests and

f) Tests on tap changers, where appropriate.

g) Oil leakage test, pressure test and vacuum tests for transformer oil tank as per CBIP manual publication no.317:2013

Special Tests:

a) Dielectric special tests

b) Determination of capacitances windings to earth, and between windings.

- c) Determination of transient voltage transfer characteristics
- d) Measurement of zero-sequence impedance(s) on transformers
- e) Determination of sound levels
- f) Measurement of the harmonics of the no load current
- g) Measurement of insulation resistance to earth of the windings, and/or measurement of dissipation factor ($\tan \delta$) of the insulation system capacitances.
- h) In the final inspection, after completion of all tests, SFRA test shall be conducted and oscillograms shall be submitted for reference.

4. As per IS 2026: Part 3 : 2018 clause 7.2 table -1 Routine dielectric tests and special dielectric tests shall be conducted on the transformer.

5. Bidders shall submit tentative Manufacturing Quality Plan (MQP) along with bids for QC Review. Final successful bidder shall submit Final QAP for QC Approval before starting the manufacture of transformer.

6. Supplier shall submit that FQP (Field Quality Plan) of Supervision of Erection, testing and commissioning of Transformer, for **QC review** before commissioning at the site as per IS: 10028.

7. The Materials shall be dispatched only after satisfactory Pre-dispatch Inspection or waiver thereof, and on receipt of MDCC (Material Dispatch Clearance Certificate) from the SE/QC/APGENCO/Vidyut Soudha/Vijayawada.

Note: 1. Transformer Oil shall comply with IEC 60296:2012, IEC 61125:2018 and ASTM D3487 or IS 335:2018 standards.

2. The tests on transformer oil shall be conducted in accordance with the relevant methods detailed in IS 335/2018 as amended up to date and as per our specification.

4.22.2 Test reports

- a) Four (4) sets of certified test reports and Oscillograms shall be submitted for approval prior to despatch of the equipment. The equipment shall be dispatched only when all the required type and routine tests have been carried out and test reports have been approved by the Purchaser.
- b) Four (4) copies of the test reports for the tests carried out on the ancillary apparatus shall be furnished to the Purchaser for approval prior to despatch.
- c) All auxiliary equipment shall be tested as per the relevant standard. Test certificate shall be submitted for bought out items.

4.23 INSPECTION

4.23.1 General

- i) The owner shall have access at all times to the works and all other places of manufacture where the transformers are being manufactured and the Bidder shall provide all facilities for unrestricted inspection of the Bidder's works, raw materials, manufacture of all the accessories and for conducting necessary tests as detailed above.

- ii) The successful Bidder shall keep the Purchaser informed in advance of the time of starting and of the progress of manufacture of equipment in its various stages so that arrangements could be made for inspection.
- iii) No material shall be dispatched from its point of manufacture unless the material has been satisfactorily inspected and tested.
- iv) The acceptance of any quantity of equipment shall in no way relieve the successful Bidder of his responsibility for meeting all the requirements of this specification and shall not prevent subsequent rejection if such equipment are later found to be defective.

4.23.2 Inspection programme

- a) The Bidder shall chalk out a detailed inspection and testing programme for manufacturing activities for the various components. An indicative programme of inspection as envisaged by the Purchaser is given in Annexure-III. This is not however intended to form a comprehensive programme as it is Bidder's responsibility to draw up and carry out such a programme duly approved by the Purchaser. The owner reserves the right to carry out any tests by a third party.
- b) Cost of inspection/tests and third party inspection if any shall be borne by the Bidder.
- c) **Additional tests, if required, are deemed to be included in the scope of work.**
- d) Stages of inspection and Purchaser's participation would be defined and tied up at the time of award of contract.

4.24 DOCUMENTATION:

- i) The Bidder shall furnish the dimensional drawings of transformer, GA and all other accessories.
- ii) These drawings shall include the following information.
 - a) Detailed internal drawings of transformer clearly indicating insulation, core assembly and windings duly incorporating all important dimensions.
 - b) Tolerances on dimensions.
 - c) Material designation used for different components with reference to standards.
 - d) Fabrication details such as welds, finishes and coatings.
 - e) Catalogue or part numbers for each component and the total assembly with bill of materials.
 - f) Identification marking.
 - g) Weight of individual components and total assembled weight.
- iii) The assembly drawings shall include the following:
 - a) Brief installation instructions.
 - b) Design installation torque for the bolt or cap screw.

- c) Withstand torque that can be applied to the bolt or cap screw without failure of components or parts thereof.
- d) Compression die number with recommended compression pressure.
- e) Relevant technical details of significance.

4.25 Test Reports

- i) Four copies of acceptance test reports shall be furnished to the Purchaser. One copy will be returned duly certified by the Purchaser and only thereafter shall the materials be dispatched.
- ii) All records of routine test reports shall be maintained by the Bidder at his works for periodic inspection by the Purchaser.
- iii) All test reports for tests conducted during manufacture shall be maintained by the Bidder. These shall be produced for verification as and when requested for by the Purchaser.

4.26 All drawings shall conform to International Standards Organization (ISO) 'A' series of drawing sheet/Indian Standards Specification. All drawings shall be in ink and suitable for micro filming. All dimensions and data shall be in S.I. Units only.

4.27 The Bidder shall within 3 weeks of placement of order, submit four sets of final versions of all the above drawings for Purchaser's approval. The Purchaser shall communicate his comments/approval on the drawings to the Bidder within reasonable time. The Bidder shall, if necessary, modify the drawings and resubmit four copies of the modified drawings for Purchaser's approval within two weeks from the date of Purchaser's comments.

After receipt of Purchaser's approval, the Bidder shall within three weeks, submit 6 prints and two good quality reproducible of the approved drawings for Purchaser's use. The Bidder shall also submit the drawing in a Compact Disc for purchasers use.

4.28 Adequate copies of contract drawings, acceptance and routine test certificates, duly approved by the Purchaser shall accompany the dispatched consignment. A history card of the transformer giving the details indicated in the rating diagram shall also accompany the transformer.

4.29 The manufacturing of the equipment shall be strictly in accordance with the approved drawings and no deviation shall be permitted without the written approval of the Purchaser. All manufacturing and fabrication work in connection with the equipment prior to the approval of the drawing shall be at the Bidder's risk only.

4.30 Six copies of nicely printed and bound volumes of operation, maintenance and erection manuals in English language shall be supplied by the Bidder along with Transformer to destination. The manual shall contain all the drawings and information required for erection, operation and maintenance of the transformers. The manual shall also contain a set of all the approved drawings, type, routine & acceptance Test reports etc.

4.31 Approval of drawings by the Purchaser shall not relieve the Bidder of his responsibility and liability for ensuring correctness and correct interpretation of the latest revision of

applicable standards, rules and codes of practices. The equipment shall conform in all respects to high standards of engineering, design, workmanship and latest revisions of relevant standards at the time of ordering and the Purchaser shall have the power to reject any material which in his judgment is not in full accordance therewith.

4.32 PACKING AND FORWARDING:

4.32.1 The equipment shall be packed in crates suitable for vertical/horizontal transport as the case may be and suitable to withstand handling during transport and outdoor storage during transit. The Bidder shall be responsible for any damage to the equipment during transit, due to improper and inadequate packing. The easily damageable material shall be carefully packed and marked with the appropriate caution symbol. Wherever necessary, proper arrangement for lifting, such as lifting hooks etc. shall be provided. Any material found short inside the packing cases shall be supplied by Bidder without any extra cost.

4.32.2 Each consignment shall be accompanied by a detailed packing list containing the following information:

- a) Name of the consignee
- b) Details of consignment
- c) Destination
- d) Total weight of consignment
- e) Handling and unpacking instructions.
- f) Bill of material indicating contents of each package.

The Bidder shall ensure that the packing and bill of material are approved by the Purchaser before despatch.

4.32.3 Transformer shall be designed, so that the transformer, can be transported by road.

4.33 QUANTITY AND DELIVERY REQUIREMENTS:

- i) This is set out in Schedule of Requirements.
- ii) The scope of supply shall include a supply of 2.5% extra quantity of bolts, nuts, washers, split pins, cotter pins and such other small loose items free of cost.

4.34 ERECTION, TESTING & COMMISSIONING:

The Bidder/Supplier has to arrange for unloading and transportation of transformer to site stores / location as instructed by the Engineer-in-charge and erection, testing and commissioning of the equipment. The bidder has to provide services of qualified experienced technical personnel for supervision of erection, testing and commissioning of the transformer.

4.35 TOOLS TO BE SUPPLIED: The tenderer shall supply the following tools at free of cost

One SET of full outfit of tools (two nos. for each type), spanners (2 nos. for each size), jacks (4 Nos), special tools (two nos. for each type) for assembling and dismantling the transformer, with a rack for handling them. All spanners shall be suitably ended and case hardened.

4.36 Quality Assurance Plan:

The successful bidder shall within 30 days of placement of order, submit the following information to the Superintending Engineer/Quality Control/APGENCO, Vidyut Soudha, Vijayawada.

- a) Manufacturing quality plan (MQP). As per Annexure-VIII
- b) Field quality plan (FQP). As per Annexure-IX
- c) The names of sub-suppliers selected (sub supplier /sub contractor assessment & approval by quality department).
- d) Inspection and testing schedules.
- e) Quality Assurance Plan (QAP) with customer hold points (CHP) for Quality department inspection. QAP's and QA&I/purchaser customer hold points shall be discussed between the QA&I/purchaser and contractor and issuance /Clearance of CHP by quality department before the QAP's is finalized. The Tenderer shall submit the routine test certificates / compliance certificates of bought out accessories for raw material at the time of routine testing if required by the quality department and ensure that the quality assurance requirements of specification are followed by the contractor/sub-contractor.

*The Equipments & Materials shall be dispatched only after issuance of MDCC from the corporate Quality Department of APGENCO.

4.37 Recommended Spares: Bidders shall furnish the detailed list of recommended spares for five years along with prices for the same along with Price bid. The validity of the prices for these spares shall be upto the completion period of contract. The bidder shall note that the cost of recommended spares will not be considered for evaluation of determining the L1 bidder and also note that it is the discretion of APGENCO whether the items are purchased or not.

4.38 The guaranteed Technical particulars as given in the specification shall invariably be mentioned in the bids furnished. Those bids not containing the guaranteed Technical particulars will be treated as **NON-RESPONSIVE**.

SCHEDULE – 1
CONTRACTOR’S EXPERIENCE

Sl.No	Particulars	Description
1.	Name of the Project	
2.	Name, designation and full Postal address of order placing Authority	
3.	Date of award of the contract and Detailed order No. of the project authority	
	1. Contractual Date of completion	
	2. Actual date of completion of work	
4.	(a) Reasons for delay in supply of material, if any (b) Whether the equipment is in trouble free operation for duration of at-least 30months after commissioning.	
5.	Nature of arbitration with the project authority, if any	
6.	Approximate value of the contract	

Seal of the Tenderer

**Signature, Designation
And address of the Tenderer.**

Note:

1. The above information should be furnished contract wise
2. Necessary performance certificate from the executing agency shall be furnished by the contractor.

SCHEDULE-2
Letter of Transmittal
(to be enclosed in the Part-I Pre-qualification bid)

From:

To:

The Superintending Engineer,
(Hydel-II), HPC & Hydel Projects wing,
APGENCO, Vidyut Soudha, Vijayawada.

Dear Sir,

- i) Tender no.
- ii) Specification no.
- iii) Item of work.

1. Having examined the above specification, together with the accompanying general conditions therein referred to, we hereby offer to provide and carryout the work described in the said specification according to the said specification and general conditions at the rates entered in the contract schedule of prices attached to the price bid.
2. We hereby undertake to have the materials delivered within the time specified in the schedule.
3. We hereby guarantee the particulars entered in the schedules attached to the bid.
4. In accordance with clause 3.4 & 3.5 of section-III of this specification we propose to furnish securities to the extent of 2½ % & 10% of the value of the contract.
5. We hereby confirm that before submitting this tender, we have visited the Project site and fully acquainted ourselves with the system requirement, site conditions and local situation regarding material, labour and all other factors pertaining to the work under this tender.
6. We hereby agree to make the supplies as per the terms and conditions

Yours faithfully,

Signature:

Date:

**SCHEDULE - 3
DECLARATION**

(to be enclosed in the Part-I Pre-qualification bid)

I _____ certify that all the data and information to the subject tender specification are correct and are true representation of the equipment covered by our formal Bid No. _____, Dt. _____.

I hereby, certify that I am the duly authorized representative of the Bidder whose name appears above my signature.

Bidder's Name: _____

Authorized
Representative's
Signature: _____

Authorized
Representative's
Name (Typed): _____

Authorized
Representative's
Designation: _____

Bidder's Seal

Bidder's Intent: The Bidder hereby agree to fully comply with the requirements and intents of the subject tender specification for the price(s) indicated in the price bid.

Authorised
Representative's
Signature : _____

Bidder's Seal.

SCHEDULE – 4
SCHEDULE OF WEIGHTS
(to be enclosed in the Part-I Pre-qualification bid)

Item No.	Item or Equipment	Qty	Weight
1.	2.	3.	4.

Signature of Tenderer

SCHEDULE –5
PROFORMA OF GUARANTEE FOR EQUIPMENT PERFORMANCE
(to be enclosed in the Part-I Pre-qualification bid)

The tenderer hereby guarantees the requirements of this specification.

If any of the requirements of the guarantees given are not fulfilled, the purchaser has the right to reject the equipment, and if capacity, performance and efficiency obtained during acceptance tests falls short of that guaranteed by the tenderer, the tenderer hereby affirms that such deficiency will be made good by rectifying/replacing the defective parts. All the replaced parts shall be removed from the site. While the facility for making good the deficiency will be normally given once, the purchaser is entitled to reject the equipment in case of repeated failure to meet the guarantee as per the specification.

Name of the firm :

Signature of the bidder :

Designation :

Date :

Seal of the company

SCHEDULE – 6
SCHEDULE OF GENERAL TERMS AND CONDITIONS
(to be enclosed in the Part-I Pre-qualification bid)

Bidders are requested to fill in the blank space and upload the same along with offer otherwise their offer will be either treated as non-responsive or suitable cost compensated for deficiencies as deemed fit by the Corporation.

1	Tender Specification No., date and due date	:	
2	Offer/quotation No. & Date	:	
3	Name of the bidder	:	
4	GST Registration No	:	
5	DGS&D's Registration No., if any (Please enclose copy of rate contract, if any)	:	
6	NSIC/SSI/MSME Registration No., if any (Copies of certificates to be enclosed)	:	
7	Price Basis (F.O.R.)	:	
8	Discount, if any	:	
9	Packing and forwarding charges (If price basis ex-works)	:	
10	GST for material	:	Included/Excluded (Indicate %)
11	GST for Erection, Testing & Commissioning / Supervision of Erection, Testing and Commissioning	:	Included/Excluded (Indicate %)
12	Freight charges inclusive of GST	:	Included/Excluded
13	Transit Insurance inclusive of GST	:	Included/Excluded
14	Bank charges	:	To be borne by seller.
15	Delivery Period	:	Supply: Within ____ Months for Supplies from the date of issue of LOI/PO. Erection, Testing & Commissioning / Supervision of ETC: Within ____ Months from the date of intimation.
16	Whether phased delivery acceptable	:	
17	Mode of dispatch	:	
18	Confirmation of submission of Performance Bank Guarantee for 10% of order value for performance of Equipment.	:	
19	Earnest Money Deposit Details (APGENCO reserves the right to reject/consider offers without EMD)	:	

We Confirm acceptance towards the following:

20	Payment Terms	:	APGENCO payment terms as per tender specification
21	Security Deposit	:	Will be submitted for 2.5% of the Total Order value, as stipulated in the Tender Specification.

22	Validity of offer	:	180 days from the date of opening of pre-qualification & Technical bids
23	Recovery of Liquidated Damages.	:	In case of delay in Execution of order beyond stipulated delivery period, APGENCO reserves the right to recover from the vendor Liquidated Damages equivalent to 0.5% of the delayed materials/ work for each week of delay and part thereof subject to a maximum of 5% of the contract value of respective station.
24	Part order	:	Acceptable
25	Price Variation	:	The prices quoted shall remain firm till execution of full order (in case of any specific price variation formula, the same shall be mentioned with ceiling limits. If the bidder quotes for variable prices, Non furnishing of Ceiling limit and the applicable formula may lead to disqualification of the tender.)
26	Rate Certificate	:	It is certified that prices quoted herein are the same as applicable to other Government Departments/ Public Sector Undertakings.
27	Guarantee Certificate	:	Materials quoted shall be guaranteed for a period of 36 months from the date of receipt at stores in good condition or 30 months from the date of commissioning which is earlier against any manufacturing defects or poor workmanship.
28	Interchangeability	:	It is certified that the quoted items are interchangeable with the items existing in APGENCO and if fails to interchange, the same shall be replaced free of cost.

(Signature of Bidder with Name, Designation and Office Seal)

SCHEDULE – 7
SCHEDULE OF TESTS
(to be enclosed in the Part-I Pre-qualification bid)

Tests as per this specification, IS and manufacturer's standard shall be performed. Detailed list of tests shall be indicated in this schedule.

Name of the firm:

Signature of the bidder:

Designation:

Date:

Seal of the company

SCHEDULE - 8
SCHEDULE OF DEVIATIONS FROM THE SPECIFICATION
(to be enclosed in the Part-I Pre-qualification bid)

We hereby confirm that the following are the only Deviations and Variations, (both Technical as well as commercial), from the Specifications/Requirements stipulated in the aforesaid Enquiry. These are irrespective of what-so-ever has been stated to the contrary anywhere else, in Our Offer No. _____, Dt. _____. These Deviations and Variations are exhaustive and except for these, the entire project will be executed as per the requirements of the aforesaid Enquiry.

SNo.	Description of Deviation	Ref. Of Page & Clause of Bid Documents	Monetary implications of the conditions, in case of withdrawal	
			(Rs. in figures)	(Rs. in Words)
	<u>(A) Technical</u>			
	<u>(B) Commercial</u>			

Note: The Tenderer should indicate, in this Schedule, the amount(s), if any, which he would charge extra (in addition to the rates quoted by him), for withdrawing his conditions/deviations & accepting the condition as stipulated in the Enquiry.

Name of the Tenderer : _____
Signature of Authorized Representative : _____
Name : _____
Designation : _____
Date : _____

Seal of the Company

SCHEDULE – 9
GUARANTEED TECHNICAL PARTICULARS FOR POWER TRANSFORMERS

Sl.No. Description

1. Name of the Manufacturer
2. Normal continuous rating
3. Normal ratio of transformation
4. PHASE CONNECTIONS:
 - a) HV Winding
 - b) LV Winding
 - c) Vector group reference number and symbol
5. MAXIMUM TEMPERATURE RISE:
 - a) Of oil by Thermometer
 - b) Of Winding by resistance
 - c) By Hot spot temperature Indicator
 - d) Ambient Temperature adopted
6. Limit for Hot spot temperature for which the transformer is designed
7. Temperature gradient between windings and oil
8. Voltage to earth for which the star point will be insulated
9. Type of cooling
10. MAXIMUM FLUX DENSITY IN IRON
AT NORMAL VOLTAGE, FREQUENCY
AND RATIO
 - a) Core
 - b) Yoke
11. MAXIMUM CURRENT DENSITY
IN WINDING AT CMR
 - a) HV Winding Amps/sq.cm.
 - b) LV Winding -do-
12. Magnetizing Current (HV)
at normal voltage and ratio
(Amps)
13. Power Factor of Magnetizing

- current at normal voltage and frequency
14. a) Guaranteed no load loss at normal ratio rated voltage and frequency(Max.)
- b) Guaranteed load loss at normal ratio, rated output, rated voltage, rated frequency and 75 deg.C average winding temperature (Max.)
15. Guaranteed total losses at at rated output, rated voltage, rated frequency and 75 deg.C average winding temperature (Max.)
- | | | | | |
|--|-------|-----------|-----------|------------|
| | | At Normal | At lowest | At highest |
| | tap | tap | tap | |
| | ----- | ----- | ----- | |
16. Total losses at rated output, rated voltage, rated frequency and maximum attainable temperature at site .(Max.)
- 17.
- | | | |
|--|---------------|----------------------|
| | At upf | At 0.8 PF lag |
| | ----- | ----- |
18. Efficiencies at normal ratio, rated voltage, rated frequency and 75 deg.C average winding temperature for the outputs of.
- a) Full load
- b) 3/4 Full load
- c) 1/2 Full load
- d) 1/4 Full load
19. Resistance per phase of :
- (at normal tap)
- a) HV Winding (Ohms) :
- b) LV Winding (Ohms) :
20. Reactance per phase of :
- (at normal tap)
- a) HV Winding (Ohms) :
- b) LV Winding (Ohms) :

21. Resistance voltage drop at 75 deg.C average winding temperature expressed as percent of rated voltage.
22. Reactance voltage drop expressed as percent of rated voltage.
23. Impedance voltage at normal and 75 deg.C average winding temperature expressed as percent of rated voltage. at normal tap at lowest tap at highest tap
----- ----- ----- percent
(Indicate tap nos.)
- a) Between HV and LV winding
b) Positive Sequence HV
c) Positive Sequence LV
24. Regulation at full load at 75 deg.C :
a) Unity Power Factor :
b) 0.8 Power Factor (Lagging) :
25. Type of transformer (Core or Shell)
26. Width of track gauge :
27. Core:
- a) Material of Core lamination
b) Thickness of Core Plates
c) Whether Core Plates are grain oriented cold rolled
d) Insulation of core lamination
e) Insulation of core bolts :
f) Insulation of core bolt washers
g) Insulation of core and plates
h) Details of oil ducts in cores
i) Whether in the plane and at right angle to the plane of winding
j) Across the plane of laminations
28. Windings:
- a) Type of Winding

- i) HV Winding
 - ii) LV Winding
- b) Insulation of HV winding
- c) Insulation of LV winding
- d) Insulation between HV & :
LV winding

29. Power frequency High Voltage Tests

- i) Test Voltage for 1 minute withstand test on High Voltage Windings (Induced)
- ii) Test Voltage for one minute withstand test on Low voltage windings
- iii) Test Voltage for one minute withstand test on Neutral end of high voltage winding
- iv) Impulse test on High Voltage Winding 1/50 full wave withstand
- v) Impulse test on low voltage winding 1/50 full wave withstand
- vi) Wave form for impulse test

Inter turn insulation HV/LV

- i) Extent of extreme and turns reinforcement
- ii) Extent of end turns reinforcement
- iii) Extent of turns adjacent to tapping reinforced
- iv) Test Voltage for ten seconds 50 cycles inter turn insulation test on (i).

- v) Test Voltage for ten seconds 50 cycles inter turn insulation test on (ii).
- vi) Test Voltage for ten seconds 50 cycles inter turn insulation test on (iii)
- vii) Test Voltage for ten seconds 50 cycles inter turn insulation test on main body of the winding

30. Type of Axial coil supports:

i) High Voltage Winding Voltage winding

ii) Low

31. Type of radial coil supports

- i) High Voltage Winding
- ii) Low Voltage Winding

32. Whether HV windings are inter leaved

33. Details of special if any, made to improve stress conditions

34. Size of cooling ducts

35. Drawings to scale indicating flow of oil in the radial and axial ducts of each limb and winding.

36. Maximum out of balance force in winding on short circuit at the terminals

37. Thickness of Transformer tank plate:

- a) Sides mm :
- b) Bottom mm :
- c) Radiator Plate mm :

38. Type and details of winding hot spot temperature detector

39. Power requirement of heater

in conservator

40. Buchholz relay description, data, range of settings schematic diagram etc.
41. Bushings:
 - a) Type :
 - b) Dry flash over voltage
 - c) Wet flash over voltage
 - d) Dry 60s withstand test voltage
 - e) Wet 60s withstand test voltage
 - f) Full wave withstand test voltage with 1.2/50 micro seconds wave
(+) Positive
(-) Negative
 - g) Creepage distance in air:
 - h) Recommended gap setting (mm):
 - i) Weight of assembled bushing (Kgs):
 - j) Quantity of oil (ltrs.)
42. Free space required at top for: removal of bushings (mm)
43. Total volume of conservator liters
44. Volume of conservator between the Highest and lowest levels liters
45. Cooling system:

No. of Radiators and its connection with the main Tank.
46. Calculated cooling time constant
47. Weight of copper required to : complete the transformer (Kgs.)
48. Weight of steel required to complete the transformer (Kgs.)
49. Weight of fittings and parts detached for transport (Kgs.)
50. Weight of core and windings (Kgs):
51. Weight of complete transformer with all fittings and oil (Kgs.)
52. Weight of complete transformer

- arranged for transport of the heaviest package, if broken down (Kgs.)
53. Weight of oil in the transformer (Kgs.)
54. Dimensions of the transformers in meters
- a) Maximum height to top of bushings
b) Overall length
c) Overall breadth
d) Heaviest package for transport
55. Taps
56. Fault levels for which the transformer is designed :
57. List of accessories and fittings being provided for transformer :
58. Whether the materials covered by this Bid have been fully type tested and if so, whether the copies of the type test certificates enclosed to the bid offer. Yes/No
59. Whether oil temperature indicator provided. Yes/No
60. Type and size of oil temperature indicator and whether supervisory alarm contacts provided
61. Type of oil level indicator and whether supervisory alarm contact for low oil level provided
62. Type and size of Gas operated relay and whether supervisory alarm and trip contacts provided and their sizes and Nos.
63. Whether winding temperature indicator with supervisory alarm indicator and trip contacts provided and their sizes and Nos.
64. Ratio and type of C.T. used for HV , LV side and for winding temperature indicator

65. Type and size of Thermostat used
66. No. of Breathers provided
67. Type of dehydrating agent used for Breathers
68. Capacity of Conservator vessel (liters)
69. Valve sizes and Numbers required/fitted
70. Size of Rail gauge for installation in yard
71. Wheel base
72.
 - a. Type and make of pressure relief device
 - b. No. of each type of devices per transformer unit(Nos.)
 - c. Minimum pressure at which the device operates(kPa)

SIGNATURE OF THE TENDERER

SCHEDULE - A
Proforma of summary price proposal
(Not to be uploaded with PQB, only to be uploaded with Price bid/commercial bid)

8.35 MVA, 11/ 132/√3 KV, 50Hz, Single Phase Generator Transformer:

S.No.	DESCRIPTION OF THE MATERIAL	Qty.	Unit Price in Rs.(to be filled in by the tenderer)	Total Amount in Rs.(to be filled in by the tenderer)
A.	SUPPLY PORTION			
1	Supply of 1 No. 8.35 MVA, 11/ 132/√3 KV, 50Hz, Single Phase Generator Transformer complete with all fittings, accessories including Mandatory Spares as per Technical Specification	1 No.		
2	GST for Supply @ % (HSN code as per GST Act:)			
3	Packing & Forwarding Charges inclusive of GST			
4	Freight inclusive of GST			
5	Transit Insurance inclusive of GST			
6	Other taxes & Levies if any			
7	Total charges for Supply (Sum of S.Nos. A.1 to A.6)			
B.	Works/Services			
1	Erection, Testing & Commissioning of Transformer	LS		
2	GST on Services @ % (HSN code as per GST Act:)			
3	Total charges for Erection, Testing & Commissioning (B.1 + B.2)			
C	Works/Services (alternative to B)			
1	Supervision of Erection, Testing & Commissioning of Transformer	LS		
2	GST on Services @ % (HSN code as per GST Act:)			
3	Total charges for Supervision of Erection, Testing & Commissioning (C.1 + C.2)			
D	TOTAL charges (Supply and Erection, Testing & Commissioning)[A.7 + B.3]			
E	TOTAL charges (Supply and Supervision of Erection, Testing & Commissioning)[A.7 + C.3]			

Note: 1) The Bidder shall compulsorily quote the Prices of all items in Sl.No.- A and all items in Sl.No.- B & D or Sl.No.- C & E in the price bid through APGENCO e-platform otherwise their offer will be treated as non-responsive and disqualified.

2) The Bidder is requested to upload this sheet in Attachments folder in the price bid.

3) Tender Evaluation will be done as below.

If 3 Bidders quoted for the tender out of which Bidder-1&2 quoted for Charges to supply and Erection, Testing and Commissioning of Transformer and Bidder-3 quoted for Charges to Supply and Supervision of Erection, Testing & Commissioning of Transformer,

Bidder-3 will be loaded with higher quoted cost of Bidder-1 and 2 for Erection, Testing and Commissioning (ETC). And L1 will be decided on the quoted and loaded prices of Transformer supply and ETC and contract will be awarded for L1 among the three.

If Bidder-3 who quoted for supervision of Erection, Testing and Commissioning becomes L1 then order will be placed on Bidder-3 with scope as Supply and supervision of Erection, Testing and Commissioning.

Date
Place

Signature-----
Name-----
Designation-----
(Seal)-----

**Schedule-B
Mandatory Spares**

S.No.	Description of the material	Qty for 8.35 MVA, 11/ 132/ $\sqrt{3}$ KV, 50Hz, Single Phase Generator Transformer
1	HV Bushing with metal parts	1 No.
2	LV Bushing with metal parts	1 No.
3	HV Neutral Bushing with metal parts	1No.
4	OTI with 2micro switches	1 set.
5	Winding temperature indicator with 2micro switches	1 No. each.
6	MOG with complete contacts	1 set.
7	Buchholz relay	1 No.
8	PRV	1 No.
9	Silica gel breather(5 KG Capacity)	1 No.

Note: 1) The Bidder shall compulsorily quote the Prices of all items in the price bid through APGENCO e-platform otherwise their offer will be treated as non-responsive and disqualified.
2) Bidder is requested to upload this sheet in Attachments folder in the price bid.

Date

Signature-----

Place

Name-----

Designation-----

(Seal)-----

Guide-lines for submission of Bank Guarantee (BG)/Insurance Surety Bond

The Bank Guarantee/Insurance Surety bond shall fulfill the following conditions failing which it shall not be considered valid:

1. Bank guarantee/Insurance Surety Bond shall be executed on non-judicial stamp paper of applicable value ***purchased in the name of bank/ Insurance Company***.
2. Non-judicial stamp paper shall be used within 6 months from the date of purchase. Bank Guarantee/Insurance Surety Bond executed on the stamp paper of more than 6 months old shall be treated as invalid.
3. The contents of the bank guarantee/Insurance Surety Bond shall be as per APGENCO proforma.
4. The bank guarantee should be executed by a Govt. Banks/Nationalized Banks/Scheduled banks/ Public sector Banks and Insurance Surety Bond should be executed by Insurance Company.
5. The executor of bank guarantee (Bank Authority)/Insurance Company Authority should mention the power of attorney no. and date executed in his/her favour authorizing him/her to sign the document or produce the photostat copy of power of attorney.
6. All conditions, corrections, deletion in the bank guarantee/Insurance Surety Bond should be authenticated by signature of bank/Insurance Company officials signing the bank guarantee/Insurance Surety Bond.
7. Each page of bank guarantee/Insurance Surety Bond shall bear signature and seal of the Bank/Insurance Company.
8. Two persons should sign as witnesses mentioning their full name, AADHAAR No and address.

9. Validity of Bank Guarantee/Insurance Surety Bond:

The Bank Guarantee for EMD shall be valid for a period of 270 days from the date of opening of pre-qualification with a claim period of **6 months**. The Insurance Surety Bond for EMD shall be valid for a period of **450 days** from the date of opening of pre-qualification thereafter.

10. Bank guarantee/Insurance Surety Bond check list.

Sl. No	Checklist	YES	NO
1(a)	<i>Is the BG/Insurance surety bond executed on non-judicial stamp paper of appropriate value?</i>		
1(b)	<i>Is the date of sale of non-judicial stamps paper is not more than six months prior to the date of execution of BG/Insurance surety bond?</i>		
1(c)	<i>Is the Non-Judicial stamp paper purchased in the name of bank/Insurance Company.</i>		
2	<i>Whether the BG/Insurance surety bond has been issued by a Govt. Banks/Nationalized Banks/Scheduled banks/ Public sector Banks/Insurance Company acceptable to APGENCO (applicability of the bank/Insurance Company should be in line with the provision of tender documents).</i>		
3	<i>Is the foreign bank guarantee/Insurance Surety bond, confirmed by a Nationalized/ scheduled bank/Insurance Company in India (as applicable)?</i>		
4	<i>Does the content of BG/Insurance Surety Bonds compare with standard APGENCO Proforma?</i>		
5	<i>Is the amount and validity of BG/Insurance Surety Bond in line with tender enquiry/purchase order provision?</i>		
6(a)	<i>Are the factual details such as Tender Enquiry No., Bid specifications No., PO value etc. are correct?</i>		

6(b)	<i>Whether overwriting /deleting, if any, on the BG/Insurance Surety Bond authenticated under the signature and seal of Executing Officer of the Bank/Insurance Company?</i>		
7(a)	<i>Has the executing officer of the bank/Insurance Company indicated his name, designation and power of attorney No. / Signing Power No. etc. on BG/Insurance Surety Bond?</i>		
7(b)	<i>Is each page of BG/Insurance Surety Bond duly signed/initialized by the executing officer and last page is signed with full particulars as required in the APGENCO's standard proforma of BG/Insurance Surety Bond and under the seal of the Bank/Insurance Company?</i>		
7(c)	<i>Is BG No. /Insurance Surety Bond No. and Date mentioned on all the pages of BG/Insurance Surety Bond?</i>		
7(d)	<i>Does the last page of BG/Insurance Surety Bond carry the signature, AADHAAR No & address of two witnesses alongside the signature of the executing officer?</i>		

ANNEXURE - I
(TO BE STAMPED IN ACCORDANCE WITH INDIAN STAMP ACT)
PROFORMA OF BANK GUARANTEE FOR THE EARNEST MONEY
DEPOSIT (EMD)

Bank Guarantee No:

Date:

Valid Upto:

Claim Period up to:

In consideration of the Andhra Pradesh Power Generation Corporation Limited (An enterprise of the Government of Andhra Pradesh) (hereinafter referred to as 'APGENCO' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Indian Companies Act, 1956 read with subsequent amendments and Act(s) and having its registered office at Vidyut Soudha, Gunadala, Vijayawada, Andhra Pradesh, India-520004 having agreed to exempt (Name of the Tenderer/Vendor/Contractor/Supplier) having its registered office at _____ (hereinafter called the said Tenderer/Contractor which term includes Supplier), under the terms and conditions of the Tender Notification No. _____, Dated _____ payment of EMD of Rs. (Rupees -----only) is payable part of EMD for the due fulfillment by the said Tenderer/Contractor of the terms and conditions contained in the said Tender for _____, on production of a Bank Guarantee for Rs. _____ (Rupees _____ only).

At the request of _____ [Tenderer/Contractor] We, _____, (hereinafter referred to as the "Bank"), having Registered/Head office at _____ and a branch at _____ being the Guarantor under this Guarantee, do hereby irrevocably and unconditionally undertake to forthwith and immediately pay to the APGENCO without any delay or demur, merely on your first demand any sum or sums up to a maximum amount but not exceeding Rs - _____ (Rupees-----).

We undertake to pay unconditionally to the APGENCO any money so demanded notwithstanding any dispute(s) raised by the Tenderer/Contractor in any suit, or proceedings pending before any Court or Tribunal or Arbitration or any other Authority relating thereto our liability under this present being is absolute and unequivocal. The payment under this guarantee would not wait till the disputes have been decided by any Court or Tribunal or in the Arbitration proceeding or by any other Authority.

The payment so made by us under this guarantee shall be a valid discharge of our liability for payment hereunder and the Tenderer/Contractor shall have no claim against us for making such payment.

We, (indicate the name of the Bank) further agree that the guarantee herein contained shall remain in full force and effective till the award of tender to the successful bidder. Validity of BG will be for a period of 270 days from the date of opening of pre-qualification bid with a further claim period of 6 months. However, BG of EMD will be returned after the award of Tender. BG is to be valid till _____.

We,(indicate the name of the Bank) further agree with the APGENCO that the APGENCO shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Tender or to extend time of BG by the said Tenderer/Contractor from time to time or to postpone for any time or from time to time.

This guarantee will not be discharged due to the change in the constitution of the Bank or the Tenderer/Contractor.

We,(indicate the name of the Bank) lastly undertakes not to revoke this guarantee during its currency except with the prior consent of the APGENCO in writing. Furthermore, we(indicate the name of the Bank) accept that

1. This Bank Guarantee is unconditional and absolute
2. Claim against this Bank Guarantee shall be honoured without any delay or demur; and
3. This Bank guarantee covers all the losses, claims, damages and costs suffered by

the APGENCO against the said Tender.

Notwithstanding anything to the contrary contained hereinabove:

- a) The liability of the Bank under this Guarantee shall not exceed... ..
- b) This Guarantee shall be valid up to Dt. _____
- c) Unless the Bank is served a written claim or demand on or before Dt. _____ (claim period) all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

We, _____ (indicate the name of the Bank), have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

In witness where of signed this Guarantee on this _____ Day __ Year__ for __ Bank at _____.

(Signature(s) of Authorised Personnel of the Bank with Seal)
Designation:

ANNEXURE - II
(TO BE STAMPED IN ACCORDANCE WITH INDIAN STAMP ACT)
PROFORMA OF BANK GUARANTEE FOR THE PERMANENT EARNEST
MONEY DEPOSIT (PEMD)

Bank Guarantee No:
Date:
Valid Up to:
Claim Period up to:

In consideration of the Andhra Pradesh Power Generation Corporation Limited (An enterprise of the Government of Andhra Pradesh) (hereinafter referred to as 'APGENCO' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Indian Companies Act, 1956 read with subsequent amendments and Act(s) and having its registered office at Vidyut Soudha, Gunadala, Vijayawada, Andhra Pradesh, India-520004 has afforded a facility to Tenderer(s)/Contractor(s)/Vendor(s) and Supplier(s) who submit tender(s)/bid(s)/offer(s) in response to the Tender notice(s) of the Andhra Pradesh Power Generation Corporation Limited calling for Tenders for supply of materials or rendering of services or execution of works permitting Tenderer(s)/Contractor(s)/Vendor(s) and Supplier(s) who furnish a Permanent Earnest Money Deposit (PEMD) of Rs. _____ (Rupees _____ only) in the shape of Bank Guarantee in lieu of Cheque/Demand Draft to have their tenders considered without separate payment of earnest monies with each tender, wherever the EMD is not more than Rs. 5.00 lakhs (Rupees Five Lakhs only) in a single case/Tender.

Whereas (Name and address of the Tenderer/Vendor /Contractor/ Supplier)..... has offered the guarantee of this Bank (indicate the name and address of the Bank), towards the Fixed/Permanent Earnest Money Deposit and the APGENCO has agreed to accept the same.

At the request of _____ [Tenderer/Contractor] We,, (hereinafter referred to as the "Bank"), having Registered/Head office at and a branch at being the Guarantor under this Guarantee, do hereby irrevocably and unconditionally undertake to forthwith and immediately pay to the APGENCO without any delay or demur, merely on your first demand any sum or sums up to a maximum amount but not exceeding Rs - ----- (Rupees-----).

We, _____ (indicate the name of the Bank), do hereby undertake to forthwith and immediately pay the amounts due and payable under this guarantee without any demur, merely on a demand from APGENCO. Any such demand made on the bank, shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____/- (Rupees _____ only).

We _____ (indicate the name of the Bank) undertake to pay unconditionally to the APGENCO any money so demanded notwithstanding any dispute(s) raised by the Tenderer/Vendor /Contractor / Supplier in any suit, or proceedings pending before any Court or Tribunal or Arbitration or any other Authority relating thereto our liability under this present is being absolute and unequivocal. The payment under this guarantee would not wait till the disputes have been decided by any Court or Tribunal or in the Arbitration proceeding or by any other Authority.

The payment so made by us under this guarantee shall be a valid discharge of liability for payment there under and Tenderer/Vendor /Contractor / Supplier shall have no claim against us for making such payment

We, _____ (indicate the name of the Bank) further agree that the guarantee herein contained shall remain in full force and effect till the award of tender to the successful bidder. Validity of BG shall be for a period of 3 years from the date of submission with a further claim period of 6 months. BG is to be valid till _____.

This guarantee will not be discharged due to the change in the constitution of the Bank or the Tenderer/Vendor /Contractor / Supplier.

We, _____(indicate the name of the Bank) lastly undertakes not to revoke this guarantee during its currency except with the prior consent of the APGENCO inwriting. Furthermore, we _____ Bank accept that

1. This Bank Guarantee is unconditional and absolute
2. Claim against this Bank Guarantee shall be honoured without any delay or demur;and
3. This Bank guarantee covers all the losses, claims, damages and costs suffered by the APGENCO against the Tender.

Notwithstanding anything to the contrary contained hereinabove:

- a) The liability of the Bank under this Guarantee shallnotexceed Rs._____-/- (Rupees _____ only)
- b) This Guarantee shall be valid up to Dt._____
- c) Unless the Bank is served a written claim or demand on or before Dt._____all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

We, _____(indicate the name of the Bank), have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

In witness where of signed this Guarantee on this _____Day __Year__ for __ Bank at _____.

(Signature(s) of Authorised Personnel of the Bank with Seal)

Designation:

Address:

ANNEXURE - III
(TO BE STAMPED IN ACCORDANCE WITH INDIAN STAMP ACT)
PROFORMA OF BANK GUARANTEE FOR THE SECURITY DEPOSIT (SD)

Bank Guarantee No:

Date:

Valid Upto:

Claim Period:

In consideration of the Andhra Pradesh Power Generation Corporation Limited (An enterprise of the Government of Andhra Pradesh) (hereinafter referred to as 'APGENCO' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Indian Companies Act, 1956 read with subsequent amendments and Act(s) and having its registered office at Vidyut Soudha, Gunadala, Vijayawada, Andhra Pradesh, India-520004 having agreed to exempt (Name of the Contractor/Supplier/Vendor) having its registered office at _____ (hereinafter called the said Contractor/Supplier/Vendor) from the demand/payment of Security Deposit payable under the terms and conditions of the Contract/Purchase Order/Work Order No. _____, Dated _____ made between the APGENCO and (Name of the Contractor/Supplier/Vendor) for supply/commissioning/rendering services/execution of work _____ (herein after called 'the said Contract/Agreement'), on production of a Bank Guarantee for Rs. _____ (Rupees _____ only).

At the request of _____ [Tenderer/Contractor] We, _____, (hereinafter referred to as the "Bank"), having Registered/Head office at _____ and a branch at _____ being the Guarantor under this Guarantee, do hereby irrevocably and unconditionally undertake to forthwith and immediately pay to the APGENCO without any delay or demur, merely on your first demand any sum or sums up to a maximum amount but not exceeding Rs - _____ (Rupees-----) in the event of any breach by the said Tenderer/Contractor of any of the terms and conditions contained in the said Contract/Purchase Order/Work Order No. _____, Dated _____.

We, _____ (indicate the name of the Bank), do hereby undertake to forthwith and immediately pay the amounts due and payable under this guarantee without any demur, merely on a demand from APGENCO. Any such demand made on the bank, shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs _____ (Rupees _____ only).

We undertake to pay unconditionally to the APGENCO any money so demanded notwithstanding any dispute(s) raised by the Contractor/Supplier/Vendor in any suit, or proceedings pending before any Court or Tribunal or Arbitration or any other Authority relating thereto our liability under this present being is absolute and unequivocal. The payment under this guarantee would not wait till the disputes have been decided by any Court or Tribunal or in the Arbitration proceeding or by any other Authority.

The payment so made by us under this guarantee shall be a valid discharge of our liability for payment hereunder and the Contractor/Supplier/Vendor shall have no claim against us for making such payment.

We, (indicate the name of the Bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract/Agreement and that it shall continue to be enforceable till all the dues of the APGENCO under by virtue of the said Contract/Agreement have been fully paid and its claims satisfied or discharged or till the concerned authority of APGENCO certifies that the terms and conditions of the said Contract/Agreement have been fully and properly carried out by the said Contractor/Supplier/Vendor and accordingly discharge the guarantee, subject to however that the APGENCO shall have no right under this bank guarantee after expiry of _____ (period) from the date of its execution. BG is to be valid till _____, Unless a demand or claim under this

guarantee is made on us in writing on or before the _____, we (indicate the name of the Bank) shall be discharged from all the liabilities under this guarantee thereafter.

We, (indicate the name of the Bank) further agree with the APGENCO that the APGENCO shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract/Agreement or to extend time of BG by the said Contractor/Supplier/Vendor from time to time or to postpone for any time or from time to time.

This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor/Supplier/Vendor.

We, (indicate the name of the Bank) lastly undertakes not to revoke this guarantee during its currency except with the prior consent of the APGENCO in writing. Furthermore, we (indicate the name of the Bank) accept that

1. This Bank Guarantee is unconditional and absolute
2. Claim against this Bank Guarantee shall be honoured without any delay or demur;and
3. This Bank guarantee covers all the losses, claims, damages and costs suffered by the APGENCO against the said Contract/Agreement.

Notwithstanding anything to the contrary contained hereinabove:

- a) The liability of the Bank under this Guarantee shall not exceed... ..
- b) This Guarantee shall be valid up to Dt. _____
- c) Unless the Bank is served a written claim or demand on or before Dt. _____ all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

We, _____ (indicate the name of the Bank), have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

In witness where of signed this Guarantee on this _____Day __Year__ for __ Bank at _____.

(Signature(s) of Authorised Personnel of the Bank with Seal)

Designation:

Address:

ANNEXURE - IV
PROFORMA FOR PERFORMANCE BANK GUARANTEE

Bank Guarantee No:

Date:

Valid Up to:

Claim Period up to:

In consideration of the Andhra Pradesh Power Generation Corporation Limited (An enterprise of the Government of Andhra Pradesh) (hereinafter referred to as 'APGENCO' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Indian Companies Act, 1956 read with subsequent amendments and Act(s) and having its registered office at Vidyut Soudha, Gunadala, Vijayawada, Andhra Pradesh, India-520004 has agreed to accept upon request of (Name of the Contractor/Supplier/Vendor) having its registered office at _____ (hereinafter called the said Contractor/Supplier/Vendor) this Bank Guarantee No. _____, Dt. _____ for making payment without effecting recovery of 10% of the value of Contract/Agreement/Purchase Order/Work Order towards Performance Guarantee for the satisfactory fulfilment of the Contract/Agreement/ Purchase Order/Work Order under the terms and conditions of the Contract/Agreement/Purchase Order/Work Order No. _____, Dated _____ made between the APGENCO and (Name of the Contractor/Supplier/Vendor) for supply/commissioning/rendering services/execution of work _____ (herein after called 'the said Contract/Agreement'), on production of a Bank Guarantee for Rs. _____ (Rupees _____ only).

At the request of _____ [Tenderer/Contractor] We, _____, (hereinafter referred to as the "Bank"), having Registered/Head office at _____ and a branch at _____ being the Guarantor under this Guarantee, do hereby irrevocably and unconditionally undertake to forthwith and immediately pay to the APGENCO without any delay or demur, merely on your first demand any sum or sums up to a maximum amount but not exceeding Rs - _____ (Rupees-----).

We, _____ (indicate the name of the Bank), do hereby undertake to forthwith and immediately pay the amounts due and payable under this guarantee without any demur, merely on a demand from APGENCO. Any such demand made on the bank, shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs _____ (Rupees _____ only).

We undertake to pay unconditionally to the APGENCO any money so demanded notwithstanding any dispute(s) raised by the Contractor/Supplier/Vendor in any suit, or proceedings pending before any Court or Tribunal or Arbitration or any other Authority relating thereto our liability under this present being is absolute and unequivocal. The payment under this guarantee would not wait till the disputes have been decided by any Court or Tribunal or in the Arbitration proceeding or by any other Authority.

The payment so made by us under this guarantee shall be a valid discharge of our liability for payment hereunder and the Contractor/Supplier/Vendor shall have no claim against us for making such payment.

We, (indicate the name of the Bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract/Agreement and that it shall continue to be enforceable till all the dues of the APGENCO under by virtue of the said Contract/Agreement have been fully paid and its claims

satisfied or discharged or till the concerned authority of APGENCO certifies that the terms and conditions of the said Contract/Agreement have been fully and properly carried out by the said Contractor/Supplier/Vendor and accordingly discharge the guarantee, subject to however that the APGENCO shall have no right under this bank guarantee after expiry of _____ (period) from the date of its execution. BG is to be valid till _____ .

We, (indicate the name of the Bank) further agree with the APGENCO that the APGENCO shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract/Agreement or to extend time of BG by the said Contractor/Supplier/Vendor from time to time or to postpone for any time or from time to time.

This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor/Supplier/Vendor.

We, (indicate the name of the Bank) lastly undertake not to revoke this guarantee during its currency except with the prior consent of the APGENCO in writing. Furthermore, we (indicate the name of the Bank) accept that

1. This Bank Guarantee is unconditional and absolute
2. Claim against this Bank Guarantee shall be honoured without any delay or demur; and
3. This Bank guarantee covers all the losses, claims, damages and costs suffered by the APGENCO against the said Contract/Agreement.

Notwithstanding anything to the contrary contained hereinabove:

- a) The liability of the Bank under this Guarantee shall not exceed... ..
- b) This Guarantee shall be valid up to Dt. _____
- c) Unless the Bank is served a written claim or demand on or before Dt. _____ all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

We, _____ (indicate the name of the Bank), have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

In witness where of signed this Guarantee on this _____ Day __ Year__ for __ Bank at

(Signature(s) of Authorised Personnel of the Bank with Seal)

Designation:

Address:

ANNEXURE – V
FORM OF INSURANCE SURETY BOND FOR BID SECURITY

Insurance Surety Bond No

Date:

To: (Name and address)

1. In consideration of the Andhra Pradesh Power Generation Corporation Limited (An enterprise of the Government of Andhra Pradesh) (hereinafter referred to as 'APGENCO' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Indian Companies Act, 1956 read with subsequent amendments and Act(s) and having its registered office at Vidyt Soudha, Gunadala, Vijayawada, Andhra Pradesh, India-520004 having agreed to exempt _____ (Name of the Tenderer/Vendor/ Contractor/Supplier) having its registered office at _____ (hereinafter called the said Tenderer/ Contractor which term includes Supplier), under the terms and conditions of the Tender Notification No....., Dated....., payment of EMD of Rs _____ (Rupees _____ only) is payable part of EMD for the due fulfillment by the said Tenderer/Contractor of the terms and conditions contained in the said Tender for _____ (name of the work), on production of a **Surety Bond** for Rs. _____ (Rupees _____ only). At the request of..... [Tenderer/Contractor] We,, (hereinafter referred to as the "**Surety Insurer**"), having Registered/Head office at and a branch at being the Guarantor under this **Surety Bond**, do hereby irrevocably and unconditionally undertake to forthwith and pay to the APGENCO as our primary obligation without any delay or demur, merely on your first demand and without reference to the Bidder, if the Bidder fail to fulfil or comply with all or any of the terms and conditions of the above tender notification any sum or sums up to a maximum amount but not exceeding Rs _____ (Rupees-----only).
2. Any such written demand made by the APGENCO stating that the Bidder is in default of the due and faithful fulfillment and compliance with the terms and conditions contained in the Bidding Documents shall be final, conclusive and binding on the **Surety Insurer**.
3. We, the **Surety Insurer**, do hereby unconditionally undertake to pay immediately the amounts due and payable under this **Surety Bond** without any demur, reservation, recourse, contest or protest and without any reference to the Bidder or any other person and irrespective of whether the claim of the APGENCO is disputed by the Bidder or not, merely on the first demand from the APGENCO stating that the amount claimed is due to the APGENCO by reason of failure of the Bidder to fulfil and comply with the terms and conditions contained in the Bidding Documents including failure of the said Bidder to keep its Bid open during the Bid validity period as set forth in the said Bidding Documents for any reason whatsoever. Any such demand made on the **Surety Insurer** shall be conclusive as regards amount due and payable by the **Surety Insurer** under this **Surety Bond**. However, our liability under this **Surety Bond** shall be restricted to an amount not exceeding Rs. _____ (Rupees _____ only)
4. This **Surety Bond** shall be irrevocable and remain in full force for a period of **450 (Four hundred and Fifty)** days from the Bid Due Date or for such extended period as may be mutually agreed between the APGENCO and the Bidder, and agreed to by the **Surety Insurer**, and shall continue to be enforceable till all amounts under this **Surety Bond** have been paid.
5. We, the **Surety Insurer**, further agree that the APGENCO shall be the sole judge to decide as to whether the Bidder is in default of due and faithful fulfillment and compliance with the terms and conditions contained in the Bidding Documents including, inter alia, the failure of the Bidder to keep its Bid open during the Bid validity period set forth in the said Bidding Documents, and the decision of the APGENCO that the Bidder is in default as aforesaid shall be final and binding on us, notwithstanding any differences between the APGENCO and the Bidder or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority.

6. *In order to give effect to this **Surety Bond**, the APGENCO shall be entitled to act as if the **Surety Insurer** were the Principal Debtor and any/**Change** in the constitution of the Contractor and/or the **Surety Insurer**, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the **Surety Insurer** under this **Surety Bond**.*
7. *In order to give full effect to this **Surety Bond**, the APGENCO shall be entitled to treat the **Surety Insurer** as the principal debtor. The APGENCO shall have the fullest liberty without affecting in any way the liability of the **Surety Insurer** under this **Surety Bond** from time to time to vary any of the terms and conditions contained in the said Bidding Documents or to extend time for submission of the Bids or the Bid validity period or the period for conveying acceptance of Letter of Award by the Bidder or the period for fulfillment and compliance with all or any of the terms and conditions contained in the said Bidding Documents by the said Bidder or to postpone for any time and from time to time any of the powers exercisable by it against the said Bidder and either to enforce or forbear from enforcing any of the terms and conditions contained in the said Bidding Documents or the securities available to the APGENCO, and the **Surety insurer** shall not be released from its liability under these presents by any exercise by the APGENCO of the liberty with reference to the matters aforesaid or by reason of time being given to the said Bidder or any other forbearance, act or omission on the part of the APGENCO or any Indulgence by the APGENCO to the said Bidder or by any change in the constitution of the APGENCO or its absorption, merger or amalgamation with any other person or any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of releasing the **Surety Insurer** from its such liability.*
8. *Any notice by way of request, demand or otherwise hereunder shall be sufficiently given in writing if addressed to the **Surety Insurer** and sent by courier or by registered post or by certified e-mail to the **Surety Insurer** at the address or e-mail set forth herein.*
9. *We undertake to make the payment immediately on receipt of your notice of claim on us addressed to name of **Surety Insurer** along with branch address and delivered at our above branch who shall be deemed to have been duly authorized to receive the said notice of claim.*
10. *It shall not be necessary for the APGENCO to proceed against the said Bidder before proceeding against the **Surety Insurer** and the **Surety Bond** herein contained shall be enforceable against the **Surety Insurer**, notwithstanding any other security which the APGENCO may have obtained from the said Bidder and which shall, at the time when proceedings are taken against the **Surety Insurer** hereunder, be outstanding or unrealized.*
11. *We, the Surety Insurer further undertake not to revoke this **Surety Bond** during its currency except with the previous express consent of the APGENCO in writing.*
12. *The **Surety Insurer** declares that it has power to issue this **Surety Bond** and discharge the obligations contemplated herein, the undersigned is duly authorized and has full power to execute this **Surety Bond** for and on behalf of the Surety Insurer.*
13. *The **Surety Insurer** declares that this Insurance Surety Bond is issued by the (name of Insurance Company) as per the applicable rules and regulations of Insurance Regulatory Development Authority of India (IRDAI).*
14. *For the avoidance of doubt, the **Surety Insurer's** liability under this **Surety Bond** shall be restricted to Rs. _____ (Rupees _____ only). The **Surety Insurer** shall be liable to pay the said amount or any part thereof only if the APGENCO serves a written claim on the **Surety Insurer** in accordance with paragraph 9 hereof, on or before _____ [** (indicate date falling*
15. *s after the Bid Due Date)].*
16. *This **Surety Bond** shall also be operatable at our , branch at , from whom, confirmation regarding the issue of this **Surety Bond** or extension/renewal thereof shall be made available on demand. In the contingency of this **Surety Bond** being invoked and payment hereunder claimed, the said branch shall accept such invocation letter immediately and make payment of amounts so demanded immediately under the said invocation.*

17. *The Insurance **Surety Bond** shall be verifiable from the specific portal created for this purpose-*

*In witness where of Signed and sealed this Surety Bond on this _____Day _____(month) of
__(Year)___ at_____.*

SIGNED, SEALED AND DELIVERED

For and on behalf of the Insurance company by:

(Signature of the Authorised Official)

(Name) (Designation) (Code Number)

ANNEXURE - VI
FORM OF INSURANCE SURETY BOND

[Security Deposit/Performance Security/Additional Performance Security/
Advance Payment Security)

Insurance Surety Bond No

Date:

To:

(Name and address)

In consideration of the Andhra Pradesh Power Generation Corporation Limited (An enterprise of the Government of Andhra Pradesh) (hereinafter referred to as 'APGENCO' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Indian Companies Act, 1956 read with subsequent amendments and Act(s) and having its registered office at Vidyut Soudha, Gunadala, Vijayawada, Andhra Pradesh, India-520004 has agreed to accept upon request of _____ (Name of the Contractor/ Member of JV or Consortium /Supplier/Vendor) having its registered office at _____ (hereinafter called the said Contractor/ Member of JV or Consortium / Supplier/ Vendor) this Surety Bond No. _____, Dt. _____ for making payment without effecting recovery of ___% of the value of Contract/ Agreement/Purchase Order/Work Order towards Performance Security/Additional Performance Security/Advance Payment Security for the satisfactory fulfillment of the Contract/ Agreement/ Purchase Order/Work Order under the terms and conditions of the Contract/ Agreement/Purchase Order/ Work Order No. _____, Dated _____ made between the APGENCO and _____ (Name of the Contractor/ JV or Consortium /Supplier/Vendor) for supply /commissioning/ rendering services/ execution of work _____ (name of the work) (herein after called 'the said Contract/ Agreement/Purchase Order/Work Order'), on production of a Surety Bond for Rs. _____ (Rupees _____ only).

AND WHEREAS we, _____ ("**Surety Insurer**") through our branch at _____ have agreed to furnish this **Surety Bond** by way of Performance Security/Additional Performance Security/Advance Payment Security.

NOW, THEREFORE, the Surety Insurer hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The **Surety Insurer** hereby unconditionally and irrevocably guarantees the due and faithful performance of the Contractor's obligations during the Contract Period/ Warranty period/Defects Liability Period under and in accordance with the Contract, and agrees and undertakes to pay immediately to the APGENCO, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the **Surety Bond** Amount as the APGENCO shall claim, without the APGENCO being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.

2. A letter from the APGENCO, officer not below the rank of Chief Engineer/APGENCO that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Contract shall be conclusive, final and binding on the **Surety Insurer**. The **Surety Insurer** further agrees that the APGENCO shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Contract and its decision that the **Contractor** is in default shall be final and binding on the **Surety Insurer**, notwithstanding any differences between the APGENCO and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.

3. In order to give effect to this **Surety Bond**, the APGENCO shall be entitled to act as if the **Surety Insurer** were the Principal Debtor and any/**Change** in the constitution of the Contractor and/or the **Surety Insurer**, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the **Surety Insurer** under this **Surety Bond**.

4. It shall not be necessary, and the **Surety Insurer** hereby waives any necessity, for the APGENCO to proceed against the Contractor before **presenting** to the **Surety Insurer** its demand under this **Surety Bond**.
5. The APGENCO shall have the liberty, without affecting in any manner the liability of the **Surety Insurer** under this **Surety Bond**, to vary at any time, the terms and conditions of the Contract or to extend the time or period for the compliance with, fulfillment and/ or performance of all or any of the obligations of the Contractor contained in the Contract or to postpone for any time, and from time to time, any of the rights and powers exercisable by the APGENCO against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Contract and/or the securities available to the APGENCO, and the **Surety Insurer** shall not be released from its liability and obligation under these presents by any exercise by the APGENCO of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the APGENCO or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the **Surety Insurer** from its liability and obligation under this **Surety Bond** and the **Surety Insurer** hereby waives all of its rights under any such law.
6. This **Surety Bond** is in addition to and not in substitution of any other **Surety Bond** or security now or which may hereafter be held by the APGENCO in respect of or relating to the Contract or for the fulfillment, compliance and/or performance of all or any of the obligations of the Contractor under the Contract.
7. Notwithstanding anything contained herein before, the liability of the **Surety Insurer** under this **Surety Bond** is restricted to the **Surety Bond** Amount and this **Surety Bond** will remain in force for the period specified below and unless a demand or claim in writing is made by the APGENCO on the **Surety Insurer** under this **Surety Bond** all rights of the APGENCO under this **Surety Bond** shall be forfeited and the **Surety Insurer** shall be relieved from its liabilities hereunder after the date mentioned.
8. The **Surety Bond** shall cease to be in force and effect on _____ Unless a demand or claim under this **Surety Bond** is made in writing before expiry of the **Surety Bond**, the **Surety Insurer** shall be discharged from its **liabilities** hereunder.
9. The **Surety Insurer** undertakes not to revoke this **Surety Bond** during its currency, except with the previous express consent of the APGENCO in writing, and declares and warrants that it has the power to issue this **Surety Bond** and the **undersigned** has full powers to do so on behalf of the **Surety Insurer**.
10. Any notice by way of request, demand or otherwise hereunder may be sent by courier, registered post or certified e-mail addressed to the **Surety Insurer** at its above referred branch or e-mail set forth herein, which shall be deemed to have been duly **authorized** to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer & the APGENCO that the envelope was so posted shall be conclusive.
11. This **Surety Bond** shall come into force with immediate effect and shall remain in force and effect for up to the date specified above or until it is released earlier by the APGENCO pursuant to the provisions of the **Contract**.
12. The **Surety Insurer** declares that this Insurance Surety Bond is issued by the (name of Insurance Company) as **per** the applicable rules and regulations of Insurance Regulatory Development Authority of India (IRDAI).
13. This Surety Bond shall also be operatable at our _____, branch at _____, from whom, confirmation regarding the issue of this Surety Bond or extension/renewal thereof shall be made available on demand. In the **contingency** of this Surety Bond being invoked and payment hereunder claimed, the said branch shall accept such invocation letter immediately and make payment of amounts so demanded under the said invocation.

14. *The Insurance Surety Bond shall be verifiable from the specific portal created for this purpose.*

In witness where of Signed and sealed this Surety Bond on this _____Day _____(month) of 2026 at_____.

SIGNED, SEALED AND DELIVERED

For and on behalf of the Insurance company by:

(Signature of the Authorised Official)

(Name) (Designation) (Code Number)

ANNEXURE - VII
(to be enclosed in the Part-I Pre-qualification bid)

Consent Form

We are hereby submitting our “**Consent/Willingness**” for arranging payment against the subject enquiry, through "**Automated payment system through M/s SBI e-payment portal**" proposed by APGENCO duly certifying/accepting for the below mentioned conditions requested by APGENCO:

- (a) We will not request for change of below mentioned Bank Account of our firm during the currency of the contract.
- (b) We will not request for issue of cheque or other mode of payment during the currency of the contract after implementation of automated system.
- (c) We have noted that APGENCO have no responsibility in any manner for any technical glitches/problems/malfunctioning of the Bank Portal etc., during the course of transfer of funds through Bank Portal.
- (d) **The Details of our Bank account is as follows:**

Sl.No	Description	Details
1	Name of the Work	
2	Enquiry Reference	
3	Full Name of the Beneficiary as per Bank records	
4	Bank Account Number	
5	Name of the Bank	
6	Branch Name with Complete Address, Telephone/Fax Number and Email ID	
7	Branch Code (If any)	
8	Type of Account (Savings/Current/Cash Credit etc)	
9	The 9 Digit MICR code of the Branch (as appearing on the MICR cheque)	
10	IFSC Code	
11	E-mail ID of Beneficiary	
12	Permanent Account Number (PAN) of the Beneficiary	
13	GST Registration Number of the Beneficiary	

Encl: (1) **Cancelled Cheque** (2) **PAN Copy** (3) **GST Registration copy**.

Station :

Signature:

Date :

(_____)
**NAME OF THE FIRM
WITH OFFICE SEAL**

ANNEXURE-IX

SUPPLIER'S LOGO		SUPPLIER'S NAME AND ADDRESS	FIELD QUALITY PLAN				PROJECT :				
			ITEM :		QP NO.:		PACKAGE :		CONTRACT NO. :		
			SUB-SYSTEM:		DATE:		MAIN-SUPPLIER:				
			PAGE:		OF....						
SL. N O.	ACTIVITY AND OPERATION	CHARACTERISTICS / INSTRUMENTS	CLASS OF CHECK	TYPE OF CHECK	QUANTITY OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		REMARKS	
1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.	
			LEGEND: A = CRITICAL, B=MAJOR, C=MINOR; 'A' SHALL BE WITNESSED BY OWNER QUALITY DEPTT., 'B' SHALL BE WITNESSED BY OWNER ERECTION / CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER (A & B CHECK SHALL BE OWNER CHP STAGES)					DOC. NO.:	REV.....		
MANUFACTURER/ SUB-SUPPLIER		MAIN-SUPPLIER					FOR APGE NCO USE				
SIGNATURE								REVIEWED BY	APPROVED BY	APPROVAL SEAL	