ANDHRAPRADESH POWER GENERATION CORPORATION LIMITED

Vidyut Soudha, Vijayawada-520004

Ap e-proc Spec No. e- 02/CE(HPC&HP)/SES- SRBPH/ /2026

(Two Part Bid)

"Design, manufacture, inspection, packing and forwarding, supply & delivery at site stores, Dismantling of the existing system, Erection, Testing and Commissioning of 07 Nos. Static Excitation Systems for Unit No. 1 to 7 (7X 110 MW) of Srisailam Right Bank Power House".

Summary sheet, Instructions to bidders, General, Financial Terms and

Conditions, Technical Specification and schedules

Phone No: 0866-2526801/6323/6309

Email : se-hpc1@apgenco.gov.in,
hpc.eme3@apgenco.gov.in

sd/-
Superintending Engineer
Hydel-I/APGENCO
Vidyut Soudha
Vijayawada-04.

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ANDHRA PRADESH POWER GENERATION CORPORATION LIMITED

Vidyut Soudha: Vijayawada-520004

NOTICE INVITING TENDER

1.	**Company Name**	Andhra Pradesh Power Generation Corporation Limited
2.	**Circle/Division Name**	Chief Engineer /HPC & Hydel Projects /APGENCO Vidyut Soudha, Gunadala, Vijayawada-520004.
3.	**Tender Notice No.**	**Ap e-proc Spec No. e- 02/CE(HPC&HP)/SES- SRBPH/ /2026.**
4.	**Name of Work**	Design, manufacture, inspection, packing and forwarding, supply & delivery at site stores, Dismantling of the existing system, Erection, Testing and Commissioning of 07 Nos. Static Excitation Systems for Unit No. No. 1 to 7 (7X 110 MW) of Srisailam Right Bank Power House.
5.	**Estimated Contract Value**	**NA**
6.	**Delivery Period**	a) Material: Within Ten Months from the date of issue of drawing approvals. However, the delivery period shall include delivery and acceptance of the material in good condition at site. Drawings shall be furnished within 30 days from the date of issue of P.O and got approved within 2 months from the date of issue of P.O. b) Dismantling of the existing system, Erection, Testing & Commissioning: Dismantling of the existing system, Erection, Testing & commissioning of each shall be completed within 20 days for each unit from the date of intimation of readiness of the site.
7.	**Tender Type**	Open tenders through online AP e-procurement platform. **Two part type:** Part-I: Pre-qualification Bid Part-II A: Price bid
8.	**Tender Category**	Composite
9.	**Bid Security (EMD)**	Rs. 40,21,140/- (Rupees Forty Lakhs Twenty-One Thousand one Hundred and forty only)
10.	**Bid Security (EMD) Payable to**	The bid security can be paid in any of the following forms: i) Full amount in the form of DD/BC/NEFT/RTGS drawn in favour of 'Pay Officer, APGENCO, Vidyut Soudha, payable at Vijayawada'. **OR** Rs.1,00,000/- in the form of DD/BC/NEFT/RTGS drawn in favour of 'Pay Officer, APGENCO, Vidyut Soudha payable at Vijayawada and balance amount in the form of Bank Guarantee from any Govt. Banks/Nationalized Banks/Scheduled banks/ Public sector Banks only in the prescribed proforma (Annexure-I) ii) PEMD Holders: Rs.1 Lakh in the form of NEFT/RTGS/ DD and balance amount of (Rs. 40,21,140.00 – Amount of PEMD) in the form of DD/BC/NEFT/RTGS or Bank Guarantee from any Govt.

		Banks/ Nationalized Banks/ Public Sector Banks/ Scheduled banks in the prescribed proforma (Annexure-I). iii) Rs.1,00,000/- in the form of DD/BC/NEFT/RTGS drawn in favour of 'Pay Officer, APGENCO, Vidyut Soudha payable at Vijayawada and balance amount in the form of Insurance Surety Bonds issued as per IRDAI guidelines in the prescribed proforma (Annexure- V). **APGENCO Bank Details for NEFT/ RTGS** BENEFICIARY NAME AS PER ACCOUNT: A P POWER GENERATION CORPN BANK NAME: STATE BANK OF INDIA, BANK A/C NO:52077965022 TYPE: CURRENT ACCOUNT, BANK BRANCH NAME & ADDRESS: SPECIALISED MIS CORPORATE BRANCH, VIJAYAWADA (16576), D. NO: 48-10-20, VEERAMACHINENI RESIDENCY, NTR HEALTH UNIVERSITY, SERVICE ROAD, GUNADALA, VIJAYAWADA 520004, MICR CODE OR BANK / BR CODE:5200020441 ii) RTGS/NEFT/IFSC CODE: SBIN0016576.
11	**Tender Transaction Fee**	All the participant bidders shall pay online, a non-refundable TRANSACTION FEE, to M/s. APTS LTD, through "Payment Gateway Service on AP e-procurement platform". The amount payable is 0.03% of the Quoted Value/Estimated Value, with a cap of Rs.10,000/- plus applicable GST up to Rs.50.0 crores and Rs.25,000/- plus applicable GST above Rs.50.0 crore. The Electronic Payment Gateway accepts all Master and Visa Credit Cards issued by any bank and Direct Debit facility/Net banking of select Banks such as ICICI Bank, HDFC, Axis Bank etc, to facilitate the transaction. Service tax, Bank Charges for Credit Card Transactions etc, will be applicable
12	**Corpus Fund or AP e-procurement Fund**	The successful bidder has to pay AP e-procurement fund, 0.04% of Quoted Value/ Estimated Value, with a cap of Rs.10,000/- plus applicable GST up to Rs.50.0 crores and Rs.25,000/- plus applicable GST above Rs.50.0 crore on AP e-procurement platform, before entering into agreement/ issue of purchase orders. The amount shall be paid in favour of the Managing Director, APTS. There shall not be any charge towards AP e-procurement fund in case of works, goods and services with Quoted Value upto Rs.10 lakhs.
13	**Bid Validity**	180 days from the date of opening of the PQ/Tech Bid
14	**Bid Start Date & Time**	14.11.2026 @11.00 Hrs.
15	**Bid Document download End Date and Time**	14.12.2026 @ 11:00 Hrs
17	**Bid Submission Closing Date &Time.**	14 .12.2026 @ 18:00 Hrs

18	**Bid Submission**	Online through AP e-procurement platform
19	**Pre-Qualification/ Tech. Bid Opening Date.**	15.12.2026 @ 15:00 Hrs
20	**Price Bid Opening Date & Time (Tentative)**	22.12.2026 @ 15.00 Hrs
21	**Eligibility Criteria**	1) The Bidder shall be Original Equipment manufacturer (OEM) having manufacturing unit in India and shall have an experience of at least 05(Five) years in the Design, Engineering, Manufacture, Inspection, Packing and Forwarding, Supply & Delivery at site stores, Erection, Testing and Commissioning of Digital Automatic Voltage Regulator based Static Excitation System for the Hydro/Thermal power generating units of 100 MW (or) more and shall supply for at least 02 Reputed organizations in India (preferably PSUs or Govt. Organizations) and which are working satisfactorily for at least 01 year as on the date of bid submission. **Satisfactory performance certificates (not older than ten years) issued by the end users along with PO copies shall be uploaded.** 2) The bidder should have an annual turnover of not less than Rs.11.76 crores for at least TWO years during the last '3' years. The bidder should enclose copies of the audited financial statements of the last '3' years so as to prove the financial capacity of the bidder to execute the order. Certificate of Turnover from Charter Accountant (CA) is also acceptable **Materials/Equipments of origin in Peoples Republic of China (PRC) is not acceptable. Firms from PRC or firms with joint venture with firms of PRC are not eligible to participate in the bid.
22	**Officer Inviting Bids & Place of Opening of Bids**	Superintending Engineer, Hydel-I, APGENCO, 4th Floor, Vidyut Soudha, Gunadala, Vijayawada- 520004, Andhra Pradesh.
22	**Contact Details**	Phone: 0866 – 2526801/323/309. Email: se-hpc1@apgenco.gov.in OR hpc.eme3@apgenco.gov.in
23	**Procedure for bid submission**	Through AP e-procurement platform, i.e., www. tender.apeprocurement.gov.in
24	**Evaluation of Bids**	Overall (L1)

Note: ***Ensure that all the documents uploaded as per the CHECK LIST.***

Sd/-
Superintending Engineer
Hydel –I /APGENCO

CHECK LIST

I. The following documents pertaining to Pre-Qualification & Technical bid should be uploaded:

1) EMD: DD/BG/PEMD as per item.no.9 & 10 of NIT.
2) Tender Transaction Fee & Corpus Fund or AP e-procurement Fund: as per item No. 11 &12**.**
3) Proof of Experience – Minimum Two Performance certificates along with Purchase order copies.
4) Proof of Financial capacity - Annual Turnover Certificates (with authentication of Charted Accountant) along with Balance Sheets (Financial statements) for last three financial years.
5) Proof of Technical Capability –The Guarantee Technical particulars (as per Schedule-1) along with full Technical details and other relevant documents of the equipment to be supplied.
6) Registration Certificates: Copies of documents relating to the Registration of the firm, Registration as Electrical Licensed Contractor, Partnership deed, Articles of Association.
7) Income Tax Registration: Copy of PAN.
8) GST Registration: Copy of GST registration.
9) Schedules: Filled in Schedules 1 to 5 (formats enclosed in the tender)
10) Miscellaneous documents: Any other documents/issues related to PQ/Technical matters.

II. Copies of the following Price Bid documents shall be uploaded:

1) Price Summary Proposal sheet duly indicating GST, Packing & Forwarding, freight, Transit Insurance charges as per Schedule-A.
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 AP e-procurement platform will only be considered. Any wrong attachments will lead to disqualification of the bid.

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

SECTION-I
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, he should immediately obtain the clarification/ information in writing from the executive who has issued these documents.

1.1. **Procedure for Submission of Bids:**

a) The bidders shall register on the AP e-procurement market place of Govt. of India, i.e., on www.apeprocurement.gov.in or https://tender.apeprocurement.gov.in and submit their bids online. On registration on the AP e-procurement market place, they will be provided with a user ID and password through which they can submit their bids on line. Only those Bidders, who are registered on the AP e-procurement Platform, are eligible to participate. For any queries on registration and online bid submission, on AP e-procurement platform, the bidders may contact HELP DESK of the Service Provider on www.apeprocurement.gov.in. Offline bids will not be entertained by the Tender Inviting Authority, for the tenders published in AP e-procurement platform. Any offline bid submission clause in the tender document could be neglected.

b) The guidelines for the bidders participating in AP e-procurement tender are detailed in the website www.apeprocrement.gov.in.

c) The Bids/Schedules should be in the prescribed form that can be downloaded free of cost from the website https://tender.apeprocurement.gov.in.

d) The dates stipulated in the Bid notice are firm and under any circumstances they will not be relaxed unless officially extended.

e) Digital Certificate Authentication:
   i) The bidder shall authenticate the bid with his Digital Certificate for submitting the bid electronically on AP e-procurement platform. Bids not authenticated by Digital Certificate of the bidder will not be accepted on the AP e-procurement platform.
   ii) For obtaining Digital Signature Certificate, all the bidders are requested go through Guidelines to bidders for participating in AP e-procurements tenders which is available in the AP e-procurement website.

f) 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 AP e-procurement website.

g) 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.

h) 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.

i) 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.

j) The dates stipulated in the Bid notice are firm and under any circumstances they will not be relaxed unless officially extended.

k) The Bid Opening Authority will not consider any documents uploaded after opening date and time.

l) **Payment of Transaction Fee:**
All the participant bidders shall pay online, a non-refundable TRANSACTION FEE, to M/s. APTS LTD, through "Payment Gateway Service on AP e-procurement platform". The amount payable is 0.03% of the Quoted Value/Estimated Value, with a cap of Rs.10,000/- plus applicable GST up to Rs.50.0 crores and Rs.25,000/- plus applicable GST above Rs.50.0 crore. The Electronic Payment Gateway accepts all Master and Visa Credit Cards issued by any bank and Direct Debit facility/Net banking of select Banks such as ICICI Bank, HDFC, Axis Bank etc, to facilitate the transaction. Service tax, Bank Charges for Credit Card Transactions etc, will be applicable.

m) **Corpus Fund or AP e-procurement Fund**:
The successful bidder has to pay AP e-procurement fund, 0.04% of Quoted Value/ Estimated Value, with a cap of Rs.10,000/- plus applicable GST up to Rs.50.0 crores and Rs.25,000/- plus applicable GST above Rs.50.0 crore on AP e-procurement platform, before entering into agreement/ issue of purchase orders. The amount shall be paid in favour of the Managing Director, APTS. There shall not be any charge towards AP e-procurement fund in case of works, goods and services with Quoted Value upto Rs.10 lakhs.

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 AP 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-I, APGENCO, 4th Floor, Vidyut Soudha, Vijayawada - 520004** for any clarification/information on any working day during working hours. Phone: **0866 – 2526801/2526323/2526309**.

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 AP 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.**

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, 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 up to Rs.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 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 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:** Kindly indicate clearly as to whether the offered prices are inclusive or 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: Within Ten Months from the date of issue of drawing approvals. However, the delivery period shall include delivery and acceptance of the material in good condition at site. Drawings shall be furnished within 30 days from the date of issue of P.O and got approved within 2 months from the date of issue of P.O.

b. Dismantling of the existing system, Erection, Testing & Commissioning: Erection, Testing & commissioning of each shall be completed within 20 days for each unit from the date of intimation of readiness of the site.).

1.20. **Delivery Schedule**

The material shall be offered for inspection, 15days in advance to depute APGENCO representative and the material shall be delivered within 15 days from the date of 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.

1.21. 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.

1.22. Bidders are requested to fill in the enclosed proforma **(Schedule-3)** for Terms and conditions and submit the same in duplicate along with their offer.

1.23. 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.

1.24. Test certificates of the offered materials shall be furnished from any Govt. recognized test house;

1.25. If the bidder is on DGS&D Rate contract for item(s) covered enquiry. A copy of the same shall be enclosed along with the offer.

1.26. **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.

1.27. **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.

1.28. **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 as and when requested by the tender inviting Authority by the successful bidder.**

1.29. **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 conform to the aforesaid forms, may at the discretion of the Purchaser be excluded from the judicature.

1.30. 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.

1.31. **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 30days of issue of LOI/PO. Any delays in complying with the above formalities will be to the account of the contractor.

1.32. **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 –I /APGENCO

SECTION-II
General Purchase Conditions (General)

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, Gunadala, 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 ordered quantity.

2.5 **Waiver**: Any waiver by the authority or any breach of the terms & 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, save 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 back 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 make 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 have guaranteed that the 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).

All materials, components and equipment covered under the scope of supply shall be procured, manufactured, erected and tested at all stages as per the comprehensive Quality assurance (QA) programme. The bidder shall have the Quality system manual to implement the Quality Assurance Program"

2.11 **Spare Parts, Oil & Lubricants**: Whenever applicable, the supplier shall furnish to the Corporation, item-wise price list of spares required for two-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 and 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 Corporation or its authorized Quality department representative at all stages and places, before, during and after the manufacture. All these tests shall be carried out in presence of authorized Quality department representative of the Corporation. Supplier shall notify the corporation for the inspection of materials/ equipment

when they are ready, giving at least 15days notice. If upon receipt at our stores, the materials / equipment does 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, re-packing charges, transit insurance etc., shall be to the account of supplier.

Inspection by the authorized Quality department 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.

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.

2.18 **Demurrage/wharfage**:

a) Dispatch of materials not through authorized/reputed transporter.
b) 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 15 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 ownership 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 24 months from the date of receipt at stores in good condition or 18 months from the date of commissioning which 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.

2.22 Quality Assurance Plan:

The Tenderer shall within 30 days of placement of order, submit the following information to the purchaser.

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 Equipment& Materials shall be dispatched only after issuance of MDCC from the corporate Quality Department.

2.23 **Drawings:** The detailed drawings and bill of materials of the Excitation System shall be furnished within 30 days from the date of issue of PO and got approved by APGENCO within 02 months from the date of issue of Purchase order.

All necessary drawings including cable schedule, if required should be submitted for approval before commissioning and as built drawings shall be submitted after satisfactory commissioning of DVR/AVR's.

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SECTION-III
GENERAL PURCHASE CONDITIONS (FINANCIAL)

3.1 **Prices**: Price(s) mentioned in the purchase order shall be firm 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.

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 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.

3.4 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.

3.5 **Security Deposit (SD):**

a) The successful bidder shall furnish the Security Deposit equal to 2.5% of value of purchase order within ONE month from the date of issue of Purchase order (if the value of order is above Rs.2Lakhs) for proper fulfilment of full execution of supplies thereof. The amount of security deposit shall be forfeited to the extent of financial loss suffered by the Corporation, if supplier fails to execute the order and fulfil its terms and conditions.

b) Security deposit may be furnished in the shape of Demand Draft drawn on any Govt. Banks/Nationalized Banks/Public Sector Banks/Scheduled banks, payable to APGENCO or bank guarantee in lieu of cash in prescribed proforma as per **Annexure-III** (Bank Guarantee shall be accepted only if amount of SD is above Rs.10,000/-) or Insurance surety bonds duly endorsed (as per Annexure-VI)in favour of APGENCO. However, the Bank guarantee shall be valid for a period up to the contract period, with a claim period of six months thereof and the validity of the bank guarantee shall be extended suitably in case of delay in supply of material.

c) If the BG validity is not sufficient, the SD amount will be deducted from your bills during processing of the same.

d) The Security deposit shall be returned back to the supplier as soon as order is fully executed and there is nothing outstanding either against this purchase order or any other purchase order placed by the corporation on the supplier.

3.6 **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 shall be paid within 30 days on presentation of the contractor's commercial invoice after receipt and acceptance of the material in good condition at site against furnishing of Bank Guarantee for 10% value of the contract covering the guarantee period on presentation of the contractor's

commercial invoice. Balance 20% payment shall be paid within 30 days after successful commissioning of the equipment in full shape.

ii) **Beyond the contractual delivery period**: 75% of all inclusive price of the materials shall be paid within 30 days on presentation of the contractor's commercial invoice after receipt and acceptance of the material in good condition at site against furnishing of Bank Guarantee for 10% value of the contract covering the guarantee period. Balance 25% payment shall be paid within 30days after successful commissioning of the equipment in full shape subject to effective performance of the contract and settlement of liquidated damages etc.

B) <u>ERECTION, TESTING AND COMMISSIONING:</u>

i) **Within the Contractual delivery period**: 100% payment of the all-inclusive price 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 shall be paid within 30 days after 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.

<u>Note:</u>

- The contractor shall complete the Dismantling, Erection, testing & commissioning of the supplied equipment within the period specified in the tender specification itself. Site will be handed over to the contractor based on the availability of the Line clearance from the SLDC.
- However, efforts will be kept to hand over the site within 60 days from the date of supply of the materials.
- 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.
- Successful Bidder is requested to furnish the Consent form **(**Schedule-5) 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.

3.7 Liquidated damages/ failure and termination:

3.7.1. In the event of any delay in the supplies of ordered materials/ 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/ equipment for each week of delay and part thereof subject to a maximum of 5% of the total value of the order.

3.7.2. Alternatively, the Corporation may resort to purchase the materials/equipment from elsewhere at the sole risk and cost of the supplier and recover all such extra cost incurred by the Corporation in procuring the materials by above procedure.

3.7.3. Alternatively, the Corporation may cancel the purchase Order completely or partly without prejudice to its right under the alternatives mentioned above.

3.7.4. In case of recourse to alternative 3.7.2 and 3.7.3 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.

3.8 **Performance Bank Guarantee:** The supplier shall ensure that all materials/ equipment under this purchase order shall conform to Corporation's requirements and specifications. An additional security in the form of Performance Bank Guarantee is essential for satisfactory performance of the equipment over a period of time. In view of this, the suppliers of equipment/ instruments/ machinery shall be required to furnish a Bank Guarantee (10% of order Value) against any manufacturing defects/ poor workmanship/ poor performance valid for a period up to Guarantee period with a claim period of 6 months over and above the guarantee period. In case any deficiencies are found during guarantee period, the same shall be repaired/rectified/replaced at free of cost. BG shall be from any Govt. Banks/Nationalized Banks/Public Sector Banks/Scheduled banks in the prescribed proforma (Annexure-IV) and got approved by APGENCO or Insurance surety bonds duly endorsed (as per Annexure-VII)in favour of APGENCO. If the supplier fails to furnish the Performance bank guarantee, 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% BG.

The Corporation shall at its discretion have recourse to the said Bank Guarantee for recovery of any or all amount due from the supplier in connection with the purchase order including of the Guarantee obligations. Checking/approval of supplier's drawings, inspection and acceptance of materials/equipment furnishing to effect shipment and /or work done by Installation, testing and commissioning of the equipment by Corporation or any other agency on behalf of the Corporation shall not in way relieve the supplier from the responsibility for proper performance during the Guarantee period.

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 supplier 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 company 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 amounts 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 deliver back any materials issued 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.
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SECTION-IV
TECHNICAL SPECIFICATION

4.1. Scope of work:

This specification covers the technical requirements for Design, manufacture, inspection, packing and forwarding, supply & delivery at site stores, dismantling of the existing system, Erection, Testing and Commissioning of 07 Nos. Static Excitation Systems for Unit No. No. 1 to 7 (7X 110 MW) at Srisailam Right Bank Power House as defined in the detailed technical specification of respective portion in this document and training of Engineers of excitation equipment.

The main scope of work shall be as follows:

a) Dismantling of the equipment of existing excitation systems of Units 1 to 7 Generator.
b) Supply of new Excitation system with associated accessories.
c) Existing Excitation transformer to be reused for Unit-1 to 7.
d) Power cable (Excitation Transformer to Thyristor bridge) – Existing cables can be re used
e) Supply of new Power and control cables for complete integration system – Existing cables can be re used.
f) Erection, Testing & Commissioning of all the above supplied equipment's.
g) Training of plant operators for regular maintenance, operation and trouble shooting.

4.2. Standards and Regulations applicable:

The design, manufacture, testing, etc., of equipment and accessories covered under this specification shall comply with the latest issue of acceptable standards and codes of practices published by bureau of Indian standards and the following.

1. Bureau of Indian standards
2. Central Board of Irrigation and Power manual
3. Indian Electricity Act.
4. Central Electricity Authority
5. Indian Electricity Rules.
6. IEEE for Excitation
7. All applicable IEC standards, IEC 60068 basic environmental testing procedures for electrical and electronic items and IEC 61000 Electromagnetic compatibility etc.

4.3. Environmental Conditions

a. The environmental conditions at the powerhouse site under which the equipment is required to operate satisfactorily are as follows:

1. Maximum ambient temperature (ºC) : 50 ^{0}C
2. Minimum ambient temperature (ºC) : 5 ^{0}C
3. Maximum relative humidity (%) : > 90 %
4. Altitude (meters) : <1000 m (Approx)
5. Seismic zone : II
6. Average Annual rain fall : 650 mm to 1000 mm (Approx)
7. Number of months with monsoon conditions : 5

4.4. Existing Synchronous Generator & Excitation Data:

Bidder need to propose suitable solution with a careful consideration of existing Technical data as below.

GENERATOR , Generator data Unit-1 to 7			
Symbol	**Description**		**U. No. 1 - 7**
		Unit	**Value**
Make	Generator Make		**M/s. BHEL, Haridwar**
Type	Suspension (SV 857/180-32)		**Hydro synchronous Generator**
RPM	Generator Rated Speed	RPM	187.5
S_n	Rated apparent power	MVA	**122**
	Rated Active Power	MW	**110**
U_n	Rated stator voltage	kV	**11**
f_n	Rated frequency	Hz	**50**
p.f.	Rated power factor	-	**0.9 lagging**
	Rated stator current	Amps	**6420**
I_{fo}	Rated No load current (field)	Amps DC	**745**
Ifn	Rated nominal (field) current		**1220**
Ufo	Rated No load field Voltage	V DC	**117**
Ufn	Rated nominal field voltage	V DC	**223**
Ifmax	Rated max main field current Max-Continuous for 10 Sec	A DC	**1320**
Id	Ceiling Current	A DC	**2196**
Ud	Ceiling Voltage	V DC	**402**
U_{test}	Rotor test voltage	KV AC	**3.16**
	Field Resistance	Ohm	**0.1241 @ 20^0 C**

Various Generator Reactance's and time constant's				
X_d	Direct axis synchronous reactance (unsaturated)	**0.877**	p.u.	Calculated value
X_q	Quadrature axis synchronous reactance	**0.59**	p.u.	Calculated value
X_d'	Direct axis transient reactance	**0.259**	p.u.	Calculated value
X_q'	Quadrature axis transient reactance	**0.59**		
X_d''	Direct axis sub-transient reactance	**0.176**	p.u.	Calculated value
Xq''	Quadrature axis sub-transient reactance	**0.185**	p.u.	Calculated value
Time Constants				

H	Inertia Constant (MW-Sec/MVA)	**5.1**	KW-Sec/KVA	Calculated value
T'd0	Direct axis open circuit time constant	**8.39**	Sec	Calculated value
	Direct axis short circuit time constant	**2.45**	Sec	Calculated value
	Armature time constant	**0.233**		Calculated value
	Short circuit ratio	**1.1**	p.u.	Calculated value

Following existing PT's and CT's should be re used for new excitation system feedback, measurement and protection purposes.

a. AVR Potential Transformers

Make	Pactil –power & control transformer Industries Pvt Ltd		
Primary	11000/√3 V	11000/√3 V	11000/√3 V
Secondary	110/√3 v	110/√3 v	110/√3 v
VA	100 PH	100 PH	100 PH
Class	0.5	0.5	0.5
Frequency	50Hz	50Hz	50Hz
Phase	1	1	1
IL	12/28/75 KV	12/28/75 KV	12/28/75 KV
VF	1.1Continuous, 1.9 for 30 seconds		
Metering & Protection Potential transformers			
Make	Pactil –power & control transformer Industries Pvt Ltd		
Primary	11000/√3 V	11000/√3 V	11000/√3 V
Secondary	110/√3 v	110/√3 v	110/√3 v
VA	200-200 VA	200-200 VA	200-200 VA
Class	0.5-3	0.5-3	0.5-3
Frequency	50Hz	50Hz	50Hz
Phase	1	1	1
IL	12/28/75 KV	12/28/75 KV	12/28/75 KV
VF	1.1Continuous, 1.9 for 30 seconds		

b. CT Details

Current transformer (CT-4 & CT-5) on Line Side			
Description	R Phase	Y Phase	B phase
Ratio Adopted	8000/5A	8000/5A	8000/5A
Class	0.5	0.5	0.5
Knee point voltage Vk	Not Applicable	Not Applicable	Not Applicable
Ie at VK/2	Not Applicable	Not Applicable	Not Applicable

4.5. Auxiliary supply available to use with new excitation system:

All the required power supplies for satisfactory operation of newly supplied excitation system should be derived from the below available auxiliary supplies only and shall not rely on any other power supplies. Like automatic AC Field flashing, DC Field Flashing and all the required power supplies required for electronic boards/relays

a. AC 415 Volts 3 phase 50Hz with neutral and with tolerance of ±10%
b. DC 220V Ungrounded with tolerance of ±10%

4.6. Complete Excitation Equipment

Complete Excitation system should contain following main equipment but not only limited to items which are not mentioned here, any equipment required for satisfactory operation shall also deemed to be in bidder's scope.

Main excitation system should have Two Digital Regulator Channels one acts as main and another one is standby (Each channel shall contain Auto (Automatic Voltage Regulation) and Manual (Field Current Regulation) control modes) , Minimum of Two thyristor bridges for controlling the field power (in case of twin bridge model) along with above said regulator channels, Field Flashing equipment, Field Breaker for disconnecting machine form excitation source, Field discharge resistor to discharge stored energy in the field, isolation and anti-parallel thyristors crowbar arrangement to provide overvoltage and/or discharge and other indication/alarm and protection accessories. Excitation system shall have snubber circuits for protecting the thyristor bridges from AC over voltages.

The equipment shall conform to the latest applicable standards. The new Digital static excitation systems shall permit continuous stable operation of the concerned generators under Auto/Manual excitation control modes for all conditions of operation of the Generators. A detailed technical requirement of each equipment is explained here under.

4.7. Regulator (DVR/AVR)

Digital Excitation System (Normally called as **D**igital **V**oltage **R**egulator (DVR) or Digital **A**utomatic **V**oltage **R**egulator (AVR)).

b. Excitation system should contain mainly two identical channels/controller including all its accessories to constitute 100% redundant control system.
c. The excitation system shall have two 100% redundant Automatic Digital Voltage Regulator channels, say DVR1 and DVR2. Each channel has its own independent regulator and control system. Each channel DVR1 or DVR2 shall be capable of being selected as "on-duty" or "standby". Each channel shall have dedicated AVR and FCR. Facility for automatic online change over from DVR1 to DVR2 and vice-versa shall be provided. Manual change over from one regulator to another shall also be possible from front panel and remote control desk/SCADA of customer. (Suppose DVR1 is having AVR1 and FCR1 and DVR2 is having AVR2 and FCR2. Then, automatic and manual changeover from AVR1 to AVR2, AVR1 to FCR1 and vice versa shall be possible.) There shall be 100% redundancy between each Thyristor bridge (in twin bridge model) and the channels.(If the Thyristor bridges are named Thy1 and Thy2, any of AVR1, FCR1, AVR2 and FCR2 shall be capable of operating with any of the bridges Thy1 or Thy2.)

It should operate the thyristor bridges in parallel (current sharing) and it should also be possible to operate with only 1 Thyrsitor Bridge in twin bridge model and (n-1, thyristor bridges in multi bridge model) carrying full current and full functionalities.

d. The voltage regulator of the excitation system shall be of the continuously acting type, responsive to the voltage of all the three phases. The voltage regulator shall automatically actuate the controlled rectifiers and shall be capable of performing the following functions:
e. Maintain the average 3 phase generator voltage within plus or minus 0.5% of nominal value, without hunting, when operating under steady load conditions, for any load or excitation within operating range of generators.
f. The voltage regulator shall restore the generator terminal voltage to a value not more than 1% above or below the voltage being held before load rejection following any load rejection up to 110% of the rated load and shall maintain the voltage within this limit throughout the period of the generator over speed.
g. Under steady speed conditions, for any over speed up to 150% of normal, maintain generator voltage within plus or minus 5% of the value that the voltage regulator was holding before over speed. Also under steady speed condition for an over speed between 150% and maximum permissible over speed, maintain generator voltage within plus or minus 10% of the value, the voltage regulator was holding before over speed.
h. Each excitation controller/Channel/DVR should have following main control modes for necessary operation as per plant requirement.
    i. Auto/Voltage Control Mode
    ii. Manual/Field Current Regulator mode
    iii. Reactive power control mode
    iv. Power Factor control mode
    v. Open loop/Firing Angle control mode / Test mode
i. There should be follow-up between all the above modes within controller/DVR for smooth bump less transfer from operating mode to other modes and follow-up should be make smooth bump less whenever operator initiate the changeover during entire range of Generator Operation or whenever any problem in the active controller.
j. All the settings required for excitation to be done by soft settings only in the controller.
k. All the major electronic cards (Mainly DVR Controller and I/O Boards) should have dual redundant auxiliary power supply ports and this supply should be monitored. Disconnection/Failure of one supply should not affect the operation of entire system and there should be an alarm in panel, in case any supply disconnection/failure for further operator action.
l. Both the Controller/DVR's should have independent facility to measure generator voltage for feedback from 3 phase measuring PT's provided by end user.
m. In the absence of two set's measuring PT's for above point only one available PT should be used for both the DVR's.
n. Both the DVR's should have independent facility to measure generator current (Armature Current) for feedback from all the 3 phase measuring CT's of secondary provided by end user.
o. In the absence of two sets of measuring CT's for above point only one available CT set should be used for both the DVR's.

p. PT's and CT's burden consumption by controller/DVR should be less than 5VA.

q. Each DVR should have facility for time synchronization so that the entire Controller/DVR events time stamp will get synchronized with plant time which helps for trouble shooting and analysis. Time synchronization by following method should be supported. Time synchronization signal up to DVR panel will be provided by end user.

   i. SNTP (Standard Network Time Protocol).

r. Each Controller/DVR should have self-diagnostic facility so that any internal faults should generate an alarm and details should appear in panel mounted HMI which helps for faster trouble shooting and diagnosis.

s. There should be watch dog for each DVR controller for checking healthiness of the DVR controller always.

t. Each Controller/DVR's should have independent disturbance/transient recording facility to store the disturbance trends independently during tripping or whenever operator initiates.

   i. Each Controller/DVR Disturbance recorder should have following minimum signal for analyzing/trouble shooting purpose but not limited to the following.

      1. Active Power
      2. Field Voltage
      3. Breaker Status
      4. Bridge Input Voltage
      5. PSS Out Signal
      6) Reactive Power
      7) Control Voltage
      8) Machine frequency
      9) Generator Voltage
      10) Field Current
      11) DVR Control Mode
      12) Generator Current

   ii. It should be possible to set and view post and pre trip trends duration of above signals which will help in trouble shooting.

   iii. Each controller/DVR's should have at least 5 above mentioned previous trip disturbance records stored in the system for view and uploading purpose at any time during generator operation or standby condition for analysis purpose.

   iv. HMI on panel should have provision to upload from the DVR system and view the above mentioned disturbance recorder trends for analysis purpose.

u. Each controller/DVR channel Should have following limiter function in **Auto Mode** of operation

   i. Over Excitation Limiter

      1. Two stage Maximum Field current limiter (Continuous & Thermal) with adjustable time delay.
      2. Reactive Stator current limiter (Lag)

   ii. Under Excitation Limiter

      1. PQ/Load angle limiter to match with capability curve of generator to avoid pullout of generator.
      2. Reactive Stator Current limiter (Lead)
      3. Minimum Excitation current limiter

   iii. **Volts/Hertz limiter** to avoid over fluxing of generator/transformer.

iv. All the above-mentioned limiter should have wide range of settings to meet the plant requirement and settings should be in terms of per unit value of their base value.

v. HMI on the excitation panel should have facility to modify the above-mentioned limiter settings and these should be password protected for security purpose.

v. In the event, if the all above mentioned limiters fails to limit the machine within safe operating condition and the operating point exceeds the margin then system should have facility to generate the unit trip. It should also have facility to disable the trip if the plant don't require trip function.
   i. The above-mentioned protection (Trip) should have wide range of settings to meet the plant requirement and settings should be in terms of per unit value of their base value.
   ii. HMI on the excitation panel should have facility to modify the above mentioned limiter settings and these should be password protected for security purpose.

w. Each DVR channel Should have following limiter function in **FCR Mode** (Field Current Regulator) of operation
   i. **Maximum field current limiter**.
   ii. **Minimum excitation current limiter**: A Field current based minimum excitation current limiter proportional to active power to avoid under excitation condition during manual operation along with grid.
   iii. All the above mentioned limiter should have wide range of settings to meet the plant requirement and settings should be in terms of per unit value of their base value.
   iv. HMI on the excitation panel should have facility to modify the above mentioned limiter settings and these should be password protected for security purpose.

x. Each Controller/DVR channel should have independent PSS function for damping active power oscillations
   i. PSS should be off IEEE type 2A/2B type with adaptive PSS (or) as per latest standards (or) latest grid code requirement.
   ii. Vendor should commission the PSS to the satisfaction of user (as per the guide lines of IEGC) **so as to satisfy the concerned Load Dispatch center/ SRPC** and vendor should demonstrate PSS behavior during commissioning by step test method and difference between PSS ON and PSS OFF should be demonstrated through signal trends.
   iii. It should be possible to switch ON or OFF, PSS from panel as and when required by operator.

y. All I/O's should be independent for both Controller/DVR's and failure of any one I/O board/group should not affect the operation of the system such that standby system should take over the operation without tripping the system. It should be possible to replace the failed I/O board/group during operation without affecting the operation of the active channel, after replacing the failed components again this system should able to take over the operation if operator initiates.

z. All the components of both controller/DVR should be identical and independent. It should be possible to replace standby DVR channel components On-Line without suffering the operation of the active DVR channel.

aa. In the event of any failure of measurement PT or failure of Auto mode should initiate automatic bumpless transfer to standby controller/channel to continue machine operation in Auto mode followed by an alarm without trip. Further failure of another controller/channel PT or failure second channel auto mode should initiate bumpless transfer to manual mode operation thus operator can continue operation in manual mode.

bb. Each controller/DVR should be designed considering following operating conditions

i. Isolated operating mode (Feeding independent load)
ii. Parallel operating with Grid
iii. Parallel operation along with other generators (Plant bus operation)

cc. Technical Data

i. Voltage regulation should be ≤0.50%
ii. Generator voltage adjustment range setting should be 90 to 110% of nominal value in Auto Mode and 0-120%-in Manual Mode.
iii. Reactive power compensation range of adjustment <±20%
iv. All limiters setting range of adjustment 0 to 110% of nominal
v. Response time should be < 20ms

4.8. Operation Philosophy (Local and remote operation of excitation system (DVR/AVR)

i. Excitation system shall be suitable for various local and remote operation as mentioned below.
ii. All the operation modes like Auto/Manual/PF/VAr/Channel-1/Channel-2/PSS ON /OFF should be selectable from panel mounted HMI locally. There should be indication on panel for the status of above modes.
iii. All the operations modes like Auto/Manual/PF/VAr/Channel-1/Channel-2/PSS ON/OFF should be selectable from remote unit control room. There should be indication locally and at remote unit control room for all the above status along with Field voltage/field current.
iv. In addition to above, excitation system should have port to integrate with plant existing/ future DCS for above operation and monitoring through Modbus or TCP/IP communication.
v. AVR shall be suitable to hook up with auto synchronization relay for synchronization, voltage raise and lower commands etc.,

4.9. Field breaker, Field discharge, Field over voltage.

4.9.1. Field Breaker

A direct current circuit breaker shall be provided in the field circuit of the generator for ensuring definite disconnection from supply source. The field breaker shall be suitable for providing protection by isolating the DC source from the field in the event of severe internal fault or three phase short circuit on generator terminals or a short circuit on the slip rings etc.,.

i. Minimum 2 pole field breaker for field isolation.
ii. Field breaker should be of minimum 2000 Amps, 550 Volts continuous DC Rating
iii. Field breaker should isolate both poles of the field.
iv. Field breaker should have minimum breaking current of 25 KA
v. Field breaker should have both closing and tripping coils
vi. Field breaker should be of mechanical latch type.
vii. Field Beaker shall have additional contact or suitable equivalent mechanism to connect the generator field to the discharge resistor, in OFF position.

4.9.2. The field breaker shall be suitable for providing protection by isolating the DC source from the field in the event of severe internal fault or three phase short circuit on generator terminals or a short circuit on the slip rings etc.,. The magnetic field energy in such a case shall be dissipated through a field discharge resistor, which shall get connected across the field during such operation. A suitable rating resistor should be provided for quick discharge.

4.9.3. Field over voltage protection.

i. Anti-parallel Thyristor crowbar-based field over voltage protection should be provided for positive and negative field induced over voltages.

ii. System should detect positive and negative over voltages independently and corresponding alarm and trip event should be indicated in panel HMI for operator analysis.

4.10. De-Excitation (Field Energy discharge during Excitation OFF/Trip)

i. De-excitation shall be provided using DC field breaker combined with either anti-parallel Thyristor crowbar silicon controlled rectifier shunting circuit or and a discharge resistor or shunting of discharge resistor shall be achieved by make before break contact of DC field breaker on receipt of OFF/Trip signal, field breaker shall trip and the inverter forcing actuated. The system shall allow a rapid decrease in the excitation current by polarity inversion realized by the firing angle of the Thyristor Bridge (negative excitation voltage).

ii. Field energy should be discharged through discharge resistor which should get connected on receipt of OFF or Trip signal.

iii. At excitation field breaker opening, the firing circuits will be inhibited and the voltage inverted. con

4.11. Thyristor Converter Bridges.

a. Thyristor Bridge should be off three phase fully controlled six pulse configuration. There should not be series or parallel thyristors within one Thyristor bridge.

b. PIV voltage of thyristors should not be less than **2.75** times the actual voltage PIV appeared at thyristors and the rectifier shall have a minimum PIV-Rating not less than 1800V.

c. Each Thyristor bridge should be designed such that it should be able to provide ceiling voltage of 1.8 times the nominal field voltage.

d. Each Thyristor bridge should be designed such that it should be able to provide ceiling current of 1.8 times the nominal current for 10 Seconds minimum.

e. The thyristor bridge shall be designed to withstand for 3 phase fault adjacent to HV terminals of the concerned generator transformer cleared in 5 cycles & one auto reclose on to above fault after 20 cycles followed by clearance in 5 cycles.

f. Thyristor Bridge should have capability of 1PU Positive and 0.9PU Negative field forcing as per excitation ceiling data provided elsewhere in this document.

g. System should be designed to satisfy twin/N bridge Model with the following Conditions,

h. **Always all bridges shall be in operation with load sharing among the bridges.**

   i. Upon failure of one bridge one/n-1 Thyristor bridges should be in operation to satisfy all the full load condition such that meeting continuous loads and ceiling current and voltage of the system.

   ii. In N bridge operation even operation of the system shall be possible with N-2 bridges also with minor limitations.

   iii. Failure/stop of both Active and standby Thyristor Bridges (In twin bridge model) /N-3 Bridges (in Multi Bridge Model) should initiate trip of the system.

   iv. In case of Multi Bridge model one bridge can be taken out of service during entire machine operating range.

i. All the power thyristor bridges should communicate/connected with respective DVR controller independently for Firing Pulses, bridge AC/DC Voltage and current measurement, Bridge healthiness monitoring, Such that failure of any one communication connected cable does not harm the operation of other DVR/thyristor bridges mainly to achieve full redundancy so that there is no common pulse bus which can cause system trip.

j. Local panel mounted HMI digital display unit (7" Display) for all the thyristor bridge for displaying Bridge Temperature, Bridge current, Bridge input voltage, Field voltage, firing angle, Alarm indication, Indication of non-conducting thyristor branch including fuse failure.

k. Design of such local digital display unit (7" Display) for thyristor must not affect the operation of respective channel/thyristor bridge in the event of failure or disconnection of display unit.

l. Each thyristor within one Thyristor Bridge should be protected by suitable rating semiconductor fuse such that a faulty thyristor branch can be isolated from circuit.

m. All thyristor bridges should have manually operated isolators on AC and DC side of Thyristor Bridge for bridge on-line maintenance purpose.

   i. Close and Open status of these on-line maintenance isolators should be monitored by excitation system.

   ii. System should indicate alarm in case any of the isolator is open and should not allow the system to start without attending to it.

   iii. Rating of the isolators should be coordinated with respect to field current and isolator should be of minimum 2000 amps rating.

   iv. Isolators should be group operated (all the 3 phases at a time for AC and Both +ve and -ve at a time for DC).

n. All thyristor bridges should be off modular design should have possibility of removal/replacement of individual thyristor if required.

o. Each Thyristor bridge should have individual snubber (RC Circuit) circuit for protection of thyristor against di/dt and dv/dt.

4.12. THYRISTOR COOLING

i. Each Thyristor bridge should have individual forced air-cooling fan for thyristor cooling.

ii. Thyristor cooling fan motor should be supplied from two sources one form plant auxiliary supply and one from thyristor bridge input supply through appropriate matching transformer, Out of two supplies one will active at a time and failure of one supply should initiate automatic supply changeover to another supply by monitoring cooling air pressure inside thyristor bridge to avoid bridge failure condition and indication should be provided for further operator action on panel HMI as well as remote annunciation in customer desk/SCADA.

iii. Thyristor bridge cubical should be designed such that it should be possible to replace the thyristor cooling fan in standby thyristor bridge on-line when system is in operation.

iv. Hot Air after the cooling of the thyristor should be vented out from excitation cubical through an appropriate air duct such that hot air should not get circulated within excitation cubical to avoid hotspot temperature.

4.13. EXCITATION TRANSFORMER:

i. Excitation power for field is obtained through a three-phase dry type converter duty excitation transformer connected to generator terminals. As the existing excitation transformer is in healthy condition for Units-1 to 7, vendors should reuse these existing excitation transformers. Rating and details of existing excitation transformers are indicated below.

Description		Stage-1	Stage-2
		Unit 1 to 4	Unit 5 to 7
Make:	:	MAY & CHRIST GmbH	MAY & CHRIST GmbH
Model No	:	DG 1000 – 10 SP	DG 1000 – 10 SP
Capacity	:	910KVA	760 kVA
Insulation level class	:	10N/0.5	Unit 6: 10N/0.6 Unit 7: 28KVP/75KV rms
Rated voltage (Primary)	:	11550/11000/ 10450V	Unit 5: 11000V Unit 6 & 7: 11550/11275/ 11000/10725 / 10450V
Rated voltage (Secondary)	:	425V	400V
Rated currents	:	47.5A	39.9A
UK%	:	6.07 IK KA to 6.16 IK KA	
IEC 76			
Type of cooling	:	AN	AN
Insulation class	:	F	F
Vector group	:	DYn5	DYn5

Note: If the vendor intends to use their own excitation transformer due to any reason, same is permitted but the total price will be evaluated irrespective of the same and L1 will be decided accordingly.

a. **Excitation Transformer Monitoring & Protection**: Excitation system should monitor excitation transformer healthiness through excitation system and minimum following monitoring and protections should be provided. **Supply of PT 100 along with temperature protection relay is in bidder's scope.**

i. **Excitation Transformer over temperature monitoring and protection:** Excitation Transformer over Temperature monitoring and protection should be provided from the transformer. The supplier shall providePT100 Temperature sensors installed on LV winding of all the three phases of the Transformer. Alarm for level-1 and Alarm or Trip for level-2 should be provided. Alarm and Trip for the respective level should selectable as per site requirement and Alarm and Trip should have wide range of settings to cover the site requirement and this setting should be digital and settings shall be in terms of ^{0}C. Excitation system should be able to display transformer temperature in local system HMI/Temperature Scanner. Above protections shall be provided for the existing transformer.

ii. This protection may be integral part of the system or separate equipment may be provided but Alarm and Trip events should be synchronized with main excitation system event along with time-stamp for easy maintenance, troubleshooting and fault analysis purpose.

iii. **Excitation Transformer Over Current Monitoring and Protection:** Excitation Transformer over current monitoring and protection should be provided for the transformer from three primary mounted HV CT's. Alarm & trip for level-1 (Time delayed over current protection) and Alarm and Trip for level-2(Instantaneous over current protection) should be provided. Alarm and trip for the respective level should selectable as per site requirement and Alarm and Trip should have wide range of settings and this should be digital and settings in terms of per unit current of transformer or CT's. Details of the CTs are as detailed below.
Existing CT details: Ratio: 50/1 A, Burden: 5 VA, Class: 5P10, STC: 100 KA/3Sec, I.L:28/75KV.

This protection may be separate relay or integral part of system but Alarm and Trip events should be synchronized with main excitation system event along with time-stamp for easy maintenance, troubleshooting and fault analysis purpose.

<u>In case the vendor intends to provide separate Excitation Transformer same shall meet the following requirements.</u>

iv. Since the high voltage winding is connected directly to the generator terminals, full design consideration shall be given to the generator frequency increase rate, generator voltage build up rate and insulation co-ordination. Surge transmission from the high voltage side to the low voltage side shall be prevented by suitable means such as earthed screen between the HV and LV winding. Full rated capacity taps on the high voltage winding shall be provided to accommodate the complete range of operation.
The Dry type excitation transformer shall meet with the standards IS 2026:Part 11:2021'

v. The LV terminal shall be suitable for cable connections. Single core aluminum cables shall be connected on LT side of the transformer to the Thyristor Bridges.

vi. Maximum temperature raise shall be limited to 120^0C at maximum ambient temperature of 50^0C. Transformer shall be suitable to withstand 140% over voltage for 5 seconds and 125% over voltage for one-minute duration.

vii. Manufacturer should provide shield/screen between primary and secondary winding as standard practice for converter transformer.

viii. Suitable lay out plans of the excitation transformers shall be designed as per the available spaces hindrances & technological demands of the existing power house. The lay out drawings developed after studying the existing conditions, shall be furnished and got approved by the representatives of APGENCO.

4.14. PANEL MOUNTED HMI DETAILS

The following information shall be provided on the HMI/ Display screen: Display screen of controllers shall be of

minimum 10" Size for better view and operation purpose.

1) Power chart:

- Capability curve of the machine
- Setting characteristics of all limiters
- Actual machine current vector
- History of the operating point

2) Events

- Indication of pending faults and alarms in main & standby channel and log list
- Event description with troubleshooting instructions
- Saving and re-loading of event list to external PC.
- Print and export function.

3) Operation

- Selectable signals displayed as analog instruments providing full Machine instrumentation
- Configurable command buttons for system control.

4) Trending & disturbance recording:

- Up to 12 selectable signals or as per standard scheme of proposed model
- Trending (2.5 ms - 1 s sampling rate) with long-time recording
  In built recording of critical parameters (like generator field current, generator rotor voltage, generator terminal voltage, reference value, Active power, Reactive power, PSS influence, firing angle etc..) in its flash memory during disturbance/fault condition, which can be downloaded into PC.
- The trigger for recoding may be analogue parameter (Generator terminal voltage /field current) or digital input or both.
- Saving and re-loading of trending / disturbance.
- Auto scaling / zoom and single channel indication
- Trends are to be downloaded into PC for future reference.
- Data logger / Transient recorder
- Easy handling of recorded data
- Auto-save and reset function
- **The supplier shall supply 7 " display for thyristor bridge, 10" display for controller. Individual HMI for each controller is accepted.**

5) Parameters

- Reading and setting of parameters of controller
- Description of major parameters
- Parameter selection / user defined table
- Parameter export and import function

4.15. MANDATORY SPARES

The supplier shall provide a guarantee that the spares for the system shall be available at least for 10 years after the last delivery of the system. In the event of phasing out of any spare part, the vendor shall intimate the purchaser, well in time to enable the purchaser to decide on the later strategy to procure spares. In particular, the purchaser must be offered the opportunity to purchase the spare part being phased out. The scope of supply shall include the required spares as indicated below.

The list of spares and quantity shall be furnished in a schedule form.

1. Processor board/Controller- 1 No
2. Power supply unit:2 Nos (each type)
3. Pulse transformer: 2 set (12 Nos.)
4. Thyristors: 6 sets (36 Nos.)
5. Semi-conductor fuses for thyristors:6 sets (36Nos.)
6. Relay and contactors: 4 Nos. for each type
7. Control switches and indicators: 3 Nos. for each type
8. Thyristor cooling fan 7 Nos
9. Special connectors and adopters. 1 set
10. Field discharge Resistor 5 Nos
11. Field breaker -1 No
12. DC Over voltage protection Unit complete. 2 Set
13. AC and DC Field flashing Diodes. Each 2 Set.
14. Firing Card / module: 4 Nos
15. Air flow Monitoring Unit 4 Nos.
16. All types of cards/modules other than specified vide item 1 to 9 above etc. used in the system -1 No. each type minimum or cube root ($n^{1/3}$) of utilized quantity, rounded off to the nearest integer, where n is the number of each of the card/module used in the system to be supplied.

4.16. ERECTION, TESTING AND MAINTENANCE EQUIPMENT.

The bidder shall include the item wise list of any special tools required for erection, testing, commissioning and maintenance of the equipment supplied by him and shall include the following erection, testing, Commissioning and maintenance tools in the Tender.

i. One Programming tool with LED display (Laptop**) along with required hardware (Communication interface module along with Communication cable for connecting the laptop to the control interface) and system software (licensed OS & Application software's) shall be supplied for operation, programming, parameter settings, tuning and trend recording of the signals with following features.

- Display
- Trend display up to 8 event –triggered signals and their history
- Parameter setting

- Signal and status monitoring
- Data logging, software for analysis of trend history
- Transient recording display up to 8 event –triggered signals
- setting/programming
- Application program display

**Supplied Laptop must be a vibrant view LED 15.4" Widescreen industrial grade Laptop (Minimum specification) With Intel Â® i7 Processor of not less than 14thGeneration, 16 GB of RAM, 1 TB SSD Drive, and necessary tools for testing during pre-commissioning, Programme, debugging and for modification/uploading at the controller directly.

ii. One Dual channel fully automatic Digital Oscilloscope of frequency300Hzwith recording / History facility.

iii. Digital Multi meter.

4.17. TESTS:

a) All the type tests on the equipment shall be done as per relevant IS. List of type tests and test certificates of similar equipments /panels shall be furnished along with the quotation.

b) All the Acceptance &routine tests shall be carried out as per the relevant IS on the panels in the factory before dispatch in the presence of purchaser's representatives.

c) All the major components used in the panels shall have undergone type tests as per their relevant standards. Test certificates shall be submitted with the quotation.

d) 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.

e) All these tests including type tests (Not conducted earlier than 10 years and valid up to the expiry of validity of offer), shall be carried out in presence of authorized representative of APGENCO.

Sd/-
Superintending Engineer
Hydel –I /APGENCO

SCHEDULE-I

GUARANTEED TECHNICAL PARTICULARS & TECHNICAL DATA FOR 7 X 110MW					
Sr No	**Parameter**	**Unit/Standard**	**Buyer Requirement**	**Vendor Confirmation**	**Remarks**
1	General		Unit-1-7		
1.1	Manufacture		*		
1.2	Place of manufacturer		*		
1.3	Type designation		Static Excitation System		
1.4	Applicable standard		IEEE 421, IEC 60068,61000 etc.,& IS		
1.5	Ambient Temperature	Deg.	50		
2	Generator Rating				
2.1	Generator Rating	MW	110		
2.2	Generator Voltage	KV	11		
2.3	Power Factor	PF	0.9		
2.3	Rated Field Voltage	VDC	223		
2.4	Rated Field Current	ADC	1220		
2.5	Ceiling Voltage	V	402		
2.6	Ceiling Current	A	2196		
2.7	Ceiling Time	Sec.	10		
2.1	Excitation Equipment Controls				
2.1.1	Number of Excitation Control Channels of one system	Nos.	2		
2.1.2	Control modes within one Excitation control channel of one system	-	Auto (Voltage control mode)		
			Manual (Field Current Regulation mode)		
			PF Control		
			VAr Control		
			Open loop control		
2.1.3	Limiters within one Excitation control channel of one system		V/Hz Limiters		
			Over excitation current limiter		
			Under excitation current limiter		
			Stator current limiter (lag)		
			Stator current limiter (lead)		

			PQ/ R Load angle limiter		
2.2	Range of Auto voltage settings range	%	90 - 110		
2.3	Accuracy of auto voltage regulation	%	< 0.5		
2.4	Range of Quadrature droop setting	%	+ / - 20		
2.5	Range of transformer droop compensation.	%	+ / - 20		
2.6	Maximum allowed over voltage during full load rejection.	%	< 10		
2.7	Range of Manual voltage settings range	%	0 - 120		
2.8	Accuracy of manual voltage regulation	%	< 1.0		
2.9	Range of PF settings range		0.5 Lead - 0.5 Lag		
2.10	Accuracy of PF control		1%		
2.11	VAR Control setting range	%	0 - 110		
2.12	Range of over excitation field current limiter settings.	%	30 – 110		
2.13	Range of under excitation field current limiter settings.	%	30 – 110		
2.14	Range of V/Hz. limiter settings.	PU	1.0 – 0.8		
2.15	Range of stator current setting (lag)	PU	30 – 110		
2.16	Range of stator current setting (lead)	PU	30 -110		
2.17	Range of under excitation field current protection settings.				
2.18	Range of V/Hz. protection settings.				
2.19	Range of stator current protection setting (lag)				
2.20	Range of stator current protection setting (lead)				
2.21	Power system stabilizer (PSS)		PSS 2A/2B (or) latest grid code.		
2.22	Transient / Disturbance recorder		5 Records of 20 signals each for 10Sec.		

3.0	Excitation Equipments Power				
3.1.	Number of thyristor per bridges		Two/Multiple		
3.2	Equipment rated Field Voltage required	VDC	160		
3.3	Rated Field Current	ADC	1220		
3.4	Ceiling Voltage	V	402		
3.5	Ceiling Current	A	2196		
3.6	Ceiling Time	Sec.	10		
3.7	Continuous current of thyristor bridge	A			
3.8	Power thyristor configuration	-	Dual/multiple		
3.9	Total Number of minimum Thyristor bridges	Nos	2		
3.10	Number of thyristors within one thyristor bridge	Nos	6		
3.11	Individual thyristor replacement possibility	Required	Required		
3.12	Redundancy in thyristor bridges	-	100% in twin bridge model /N-1 bridge in multiple thyristor bridge model.		
3.13	Maximum number of parallel thyristor within one bridge	Nos	1		
3.14	Maximum number of series thyristor within one bridge	Nos	1		
3.15	Each thyristor PIV voltage	Volts	1800		
3.16	Fast acting Semiconductor fuse for each thyristor protection		Required		
3.17	Cooling method of thyristors	-	Forced air		
3.18	Independent cooling fan for each converter		Required		
3.19	For Thyristor cooling fans 2 sources (Main & Standby) with automatic / manual switch over operation. In case failure of one source other should take care without hampering the system operation.		Required		
3.20	Over all auxiliary power consumption of all cooling fans together (preferable)	W	< 400		
3.21	Load sharing in thyristor bridges in active achannel		50%: 50%		
4.0	Field Breaker & Discharge				
4.1	Field Breaker Make		ABB / Secheron/equivalent		
4.2	Field Breaker rated current	A	> 2000		
4.3	Field Breaker rated Voltage	V	>550		

4.4	Breaker breaking current	KA	>25		
4.5	Breaker Total opening time	mSec	< 60		
4.6	Breaker Total closing time	mSec	< 80		
4.7	Breaker Life time (operation at rated capacity)	Nos.	> 10000		
4.8	Number of tripping coil	Nos	2		
4.9	Discharge resistor Make	-	Metrosil / HVP / Equivalent		
4.10	Discharge resistor type		Non Linear/Fixed resistor		
4.11	Material		Silicon		
4.12	Discharge resistor minimum energy capacity	KWs	>1000		
4.13	Field discharge time to reach 10% of Ug	Sec	< 10		
	Excitation Cubicle				
4.14	Protection class of excitation system Cubicles		IP 31 or better		
4.15	Excitation cubical dimension	mm	Vendor to provide		
4.16	Panel Material		CRCA		
4.17	Excitation cubicle sheet thickness		2mm		
4.18	Paint Shade		RAL 7035		
4.19	Paint thickness	micron	60 - 80		
4.20	Gland Plate material and thickness		3mm		
4.21	Excitation cubicle weight	Kgs			
4.22	Cables for connection within the panel cubicle and inter cubicle.	-	1.1KV , FRLS type		
5.0	AC/DC - Field flashing equipment				
5.1	AC field flashing Supply voltage	V	415 will be arranged by customer		
5.2	AC field flashing Power requirements	KVA	Vendor to provide		
5.3	AC field flashing duration	Sec	Vendor to provide		
5.4	AC field flashing current	A	Vendor to provide		
5.5	AC Flashing transformer rating	KVA	Vendor to provide		
5.6	AC Flashing transformer sec voltage	V	Vendor to provide		
5.7	Rectifier rating	A / V	Vendor to provide		
5.8	DC field flashing Supply voltage	V DC	220 will be arranged by the customer		
5.9	DC field flashing Power requirements	KW	Vendor to provide		
5.10	DC field flashing duration	Sec	Vendor to provide		
5.11	DC field flashing current	A	Vendor to provide		
5.12	Rectifier rating	A / V	Vendor to provide		

6.0	Transformer Protection				
6.1	Over Current protection		To be provided		
6.2	Over Temperature protection		To be provided		
6.3	Earth Fault protection		To be provided		

SCHEDULE-2

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 – 3

Schedule of General Terms And Conditions

(to be uploaded 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 rate)
11	GST for services	:	Included/Excluded (Indicate rate)
12	Freight charges	:	Included/Excluded
13	Transit Insurance	:	Included/Excluded
14	Bank charges	:	To be borne by seller.
15	a) Delivery Period	:	Within _____days/weeks/ Months from the date of receipt of purchase order.
	b) Erection, Testing & commissioning	:	Within _____ days 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	:	2.5% of order value (for full execution of order) by the way of DD/Pay order/Bank guarantee.
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 value of delayed materials for each week or part thereof subject to maximum of 5% of total value of Purchase Order.
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 24 months from the date of supply or 18 months from the date of Commissioning, whichever 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 - 4

Schedule Of Deviations From The Specification

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

Tenderer shall carefully state below all points not in accordance with enclosed specification.

Para	Section	Deviation

The tenderer hereby certifies that the above mentioned are the only deviations from the specification No.

Signature of the tenderer.

Schedule-5
Consent Form

We hereby issue Consent for the SBI e-payment System implemented by APGENCO for arranging e-payment for the Supply of following material/Execution of Work.

S.No.	Description	
1	Name of the Work	
2	Purchase Order/Agreement Ref No.	
3	Bank Account No. with Branch Details	
4	Type of Account (Current/Cash Credit etc)	
5	Full Name of the Beneficiary as per Bank Records	
6	IFSC Code etc.,	

It is noted that APGENCO will not accept any 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.

Authorized Signatory of the Agency

SCHEDULE – A

Proforma of Summary Price Proposal

S.No.	Description of Material	Qty.	Unit Price Rs	Amount Rs.
	Supply Portion:			
1	Design, manufacture, inspection, packing and forwarding, supply & delivery at site stores of 7 Nos. Static Excitation System for Unit No. 1 to 7 at Srisailam Right Bank Power House along with mandatory spares.	7 Nos		
A	GST for supply @ %			
B	Packing & Forwarding Charges			
C	Freight inclusive of GST.			
d	Insurance inclusive of GST.			
	Total Amount for Material Portion			
3	Dismantling of existing excitation system, Erection, Testing & Commissioning of new 7 Nos. Static Excitation System for Unit No: 1 to 7 of Srisailam Right Bank Power House .	7 Nos.		
A	GST for services @ %			
	Total Amount for Service Portion			
	Gross Total Amount (1+2)			

Note: 1) The Bidder shall compulsorily quote the Prices of all items in the price bid through AP e-platform otherwise their offer will be treated as non-responsive and disqualified.

2) However, the bidder may upload this sheet in Attachments folder in the price bid.

Date

Place

Signature----------

Name----------

Designation----------

(Seal)----------

SCHEDULE-B
Mandatory Spares

1. Processor board/Controller- 1 No
2. Power supply unit:2 Nos (each type)
3. Pulse transformer: 2 set (12 Nos.)
4. Thyristors: 6 sets (36 Nos.)
5. Semi-conductor fuses for thyristors:6 sets (36Nos.)
6. Relay and contactors: 4 Nos. for each type
7. Control switches and indicators: 3 Nos. for each type
8. Thyristor cooling fan 7 Nos
9. Special connectors and adopters. 1 set
10. Field discharge Resistor 5 Nos
11. Field breaker -1 No
12. DC Over voltage protection Unit complete. 2 Set
13. AC and DC Field flashing Diodes. Each 2 Set.
14. Firing Card / module: 4 Nos
15. Air flow Monitoring Unit 4 Nos.
16. All types of cards/modules other than specified vide item 1 to 9 above etc. used in the system -1 No. each type minimum or cube root ($n^{1/3}$) of utilized quantity, rounded off to the nearest integer, where n is the number of each of the card/module used in the system to be supplied.

Date **Signature----------**

Place **Name----------**

Designation----------

(Seal)----------

Guide-Lines for Submission of Bank Guarantee

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

1. Bank Guarantee shall be executed on non-judicial stamp paper of applicable value purchased in the name of bank.

2. Non-judicial stamp paper shall be used within 6 months from the date of purchase. Bank Guarantee executed on the stamp paper of more than 6 months old shall be treated as invalid.

3. The contents of the Bank Guarantee shall be as per our proforma which will be enclosed along with the Purchase Order.

4. The Bank Guarantee should be executed by a nationalized bank.

5. The executor of Bank Guarantee (Bank 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 should be authenticated by signature of Bank Officials signing the Bank Guarantee.

7. Each page of Bank Guarantee shall bear signature and seal of the Bank.

8. Two persons should sign as witnesses mentioning their full name and address.

9. **Validity of Bank Guarantees**:

a) 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 3 months.
b) The Bank Guarantee for PEMD shall be valid for a period of 3years from the date of submission with a further claim period of 6months.
c) The Bank Guarantee for Security Deposit shall be valid for a period of 6months over and above the Delivery period.
d) The Bank Guarantee for Performance Guarantee shall be valid up to the Guarantee period with a claim period of 6months over and above the Guarantee period.

ANNEXURE-I

(TOBESTAMPEDINACCORDANCEWITH INDIANSTAMPACT)

PROFORMA OF BANK GUARANTEE FOR T H E EARNEST MONEY DEPOSIT (EMD)

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 having agreed to exempt (Name of the Tenderer/Vendor/Contractor/Supplier)havingitsregisteredofficeat___ (hereinafter called the said Tenderer/ContractorwhichtermincludesSupplier),underthetermsandconditionsofthe Tender Notification No. ,Dated payment of EMD ofRs... …… (Rupees ----------only) is payable part of EMD for the due fulfillment by thesaid Tenderer/Contractoroftheterms and conditions containedinthesaidTender for_____ ,onproductionofaBank Guarantee for Rs. _____(Rupees_____only).

At the requestof_____[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 daysfromthedate 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 totime.

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 previous consent of the APGENCO inwriting. Furthermore, we ..... (indicate the name of the Bank) accept that

1. This Bank Guarantee is unconditional andabsolute
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 shallnotexceed… .....
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 theBank.

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-II

(TOBESTAMPEDINACCORDANCEWITH INDIAN STAMPACT)

PROFORMA OF BANK GUARANTEE FOR T H E P E R M A N E N T 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)inresponseto 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 requestof_____[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 thereunder 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 previous consent of the APGENCO inwriting. Furthermore, we_____Bank accept that

1. This Bank Guarantee is unconditional andabsolute
2. Claim against this Bank Guarantee shall be honoured without any delay or demur;and
3. This Bank guarantee covers all the interchangeability

es, 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 shallnotexceedRs._____/- (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 theBank.

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

(TOBESTAMPEDINACCORDANCEWITH INDIAN STAMPACT)

PROFORMA OF BANK GUARANTEE FOR T H E 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 theContractor/Supplier/Vendor)havingitsregisteredofficeat _____ (hereinafter called the said Contractor/Supplier/Vendor) from the demand/payment of Security Deposit payable underthetermsandconditionsofthe Contract/Purchase Order/Work Order No. ,Dated made between the APGENCO and (Name of theContractor/Supplier/Vendor)for supply/commissioning/rendering services/execution of work _____ (herein after called 'the said Contract/Agreement'),onproductionofaBank Guarantee for Rs. _____(Rupees_____only).

At the requestof_____[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/Contractorof any of the terms and conditions contained in the saidContract/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 ofthesaid Contract/Agreement have been fully paid and its claims satisfied or discharged or till the concerned authority of APGENCOcertifiesthat the terms and conditions of the said Contract/Agreement havebeenfully 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 liability 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 totime.

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 previous consent of the APGENCO inwriting. Furthermore, we (indicate the name of the Bank) accept that

1. This Bank Guarantee is unconditional andabsolute
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 shallnotexceed… .....
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 theBank.

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

(TOBESTAMPEDINACCORDANCEWITH INDIAN STAMPACT)

PROFORMA OF BANK GUARANTEE FOR T H E PERFORMANCE (PBG)

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 theContractor/Supplier/Vendor)havingitsregisteredofficeat_____ (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 underthetermsandconditionsofthe Contract/Agreement/Purchase Order/Work Order No. ,Dated made between the APGENCO and (Name of theContractor/Supplier/Vendor)for supply/commissioning/rendering services/execution of work _____ (herein after called 'the said Contract/Agreement'),onproductionofaBank Guarantee for Rs. _____(Rupees_____only).

At the requestof_____[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 ofthesaid Contract/Agreement have been fully paid and its claims satisfied or discharged or till the concerned authority of APGENCOcertifiesthat the terms and conditions of the said Contract/Agreement havebeenfully 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 totime.

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 previous consent of the APGENCO inwriting. Furthermore, we (indicate the name of the Bank) accept that

1. This Bank Guarantee is unconditional andabsolute
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 shallnotexceed… .....

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 theBank.

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 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 _____(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 270 (two hundred and seventy) 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 270 days after the Bid Due Date)].

15. 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.

16. 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 Authorized 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 2.5% of the value of Contract/ Agreement/Purchase Order/Work Order towards Performance Security/Additional Performance Security/Advance Payment Security 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/ 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 2024 at_____.

SIGNED, SEALED AND DELIVERED

For and on behalf of the Insurance company by:

(Signature of the Authorized Official)

(Name) (Designation) (Code Number)

ANNEXURE-VII

FORM OF INSURANCE SURETY BOND(Performance)

[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 10% of the value of Contract/ Agreement/Purchase Order/Work Order towards Performance Security/Additional Performance Security/Advance Payment Security 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/ 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:

15. 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.
16. 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.

17. 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**.

18. 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**.

19. 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.

20. 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.

21. 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.

22. 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.

23. 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**.

24. 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.

25. 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**.

26. 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).

27. 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.

28. 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 2024 at_____.

SIGNED, SEALED AND DELIVERED

For and on behalf of the Insurance company by:

(Signature of the Authorized Official)

(Name) (Designation) (Code Number)

ANNEXURE-VIII
Manufacturing Quality Plan

MFGR.'s LOGO	MANUFACTURER'S NAME AND ADDRESS	MANUFACTURING QUALITY PLAN		PROJECT : PACKAGE : CONTRACT NO. : MAIN-SUPPLIER:
		ITEM : SUB-SYSTEM:	QP NO.: REV.NO.: DATE: PAGE: …. OF….	

SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS
					M	C / A				M	C	A	

		LEGEND: * RECORDS, INDENTIFIED WITH "TICK" (√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. ** **M:** MANUFACTURER/SUB-SUPPLIER **C:** MAIN SUPPLIER, **A**: APGENCO, **P:** PERFORM **W**: WITNESS AND **V:** VERIFICATION. AS APPROPRIATE, **CHP:**APGENCO SHALL IDENTIFY 'W' IN COLUMN "A"		DOC. NO.: REV…… CAT…..	
MANUFACTURER/ SUB-SUPPLIER	MAIN-SUPPLIER		FOR APGENCO USE	REVIEWED BY	APPROVAL SEAL
SIGNATURE				APPROVED BY	

ANNEXURE-IX
Field Quality Plan

SUPPLIER'S LOGO	SUPPLIER'S NAME AND ADDRESS	FIELD QUALITY PLAN ITEM : SUB-SYSTEM:	QP NO.: REV. NO.: DATE: PAGE: …. OF….	PROJECT : PACKAGE : CONTRACT NO. : MAIN-SUPPLIER:

L. NO	ACTIVITY AND OPERATION	CHARACTERISTICS / INSTRUMENTS	CLASS OF CHECK #	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	REMARKS		
1.	2.	3.	4.	5.	6.	7.	8.	9.		D *	10.

		LEGEND: * RECORDS, INDENTIFIED WITH "TICK" (√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. **LEGEND TO BE USED: CLASS # : 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 APGENCO USE**			
SIGNATURE				**REVIEWED BY**	**APPROVED BY**	**APPROVAL SEAL**