

SPECIFICATION NO.HE-2526



TAMILNADU GREEN ENERGY CORPORATION LIMITED
(Formerly TANGEDCO)

SPECIFICATION No.HE-2526

E_TENDER SPECIFICATION FOR
UPGRADATION OF EXCITATION SYSTEM INCLUDING
DESIGN, ENGINEERING, MANUFACTURING, SUPPLY,
ERECTION, TESTING AND COMMISSIONING
SUITABLE TO THE EXISTING HYDRAULIC SYSTEM
AND
DIGITAL GOVERNOR CUM AUTO SEQUENCER
PANEL(DGASP)
AT
SATHANUR DAM POWER HOUSE/ SATHANUR,
ERODE GENERATION CIRCLE.

**(E-TENTERING Through Tamil Nadu Government e-
procurement portal)**

Sep -2026

OFFICE OF THE
SUPERINTENDING ENGINEER/HYDRO (ELECTRICAL)
5th FLOOR, EASTERN WING
NPKRR MAALIGAI
144, ANNA SALAI, CHENNAI - 600 002.

Service Provider :

Website for online bid submission:

<https://tntenders.gov.in> of Tamil Nadu Government e-procurement
Portal)

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TAMILNADU GREEN ENERGY CORPORATION LIMITED
SPECIFICATION NO. HE –2526
F O R E W O R D
INVITATION FOR BID

For and on behalf of TNGECL, e-tenders are invited under Open Tender - Two part system for the following work:

1.	Specification No.	HE – 2526
2.	Name of Work	E-Tender for Upgradation of excitation system including design, Engineering, Manufacturing, supply, erection, testing and commissioning suitable to the existing Hydraulic system and Digital Governor Cum Auto Sequencer Panel(DGASP) at Sathanur Dam Power House/ Sathanur, Erode Generation Circle as per the technical specifications.
3.	Method of Tender	e-Tender System (Online Part I - Techno-Commercial Bid and Part II - Price Bid and Through https://tntenders.gov.in of Tamil Nadu Government e-procurement Portal)
4.	Earnest Money Deposit (EMD)	Rs.1,00,000/- (Rupees One lakh only). i)The Online payment Gateway has been enabled for TNGECL in TN Tenders Portal. (www.tntenders.gov.in) The payment of EMD will be carried out by the Bidders only through online payment mode. Note: As the internet banking process (NEFT/RTGS) may take some time for confirming the receipt of EMD, bidders may plan such a way to pay the EMD accordingly to avoid any delay in bank confirmation. After getting success status of EMD payment only, the bidder can submit the bid. ii) The EMD amount should be the exact amount and no excess or less amount should be transferred through online payment gateway . If excess or short, the tender status will be shown as invalid. iii) If submitting EMD as PEMD/ Udyam (SSI) (as mentioned in the specification), then select the exempted from EMD payment as "YES". Then upload the EMD exemption documents only in "pdf" files.
	Or (b) Permanent E.M.D.	:Rs.20,00,000/- and above under revised slab at TANGEDCO/TNGECL Head Quarters on or after 03.12.2021.
5.	URL for online bid submission for e-tender	https://tntenders.gov.in
6.	Tender documentdownload start date and time	17.09. 2026 @14.00 Hrs
7.	Bid submission start date and time	21.09.2026 @14.00 Hrs

8.	Bid submission closing date and time	05.10.2026 @14.00 Hrs
9.	Date & time of opening of e-tender	06.10.2026 @14.30 Hrs
10.	Specification at website	The tender specification will be placed on TANGEDCO web site (www.tangedco.gov.in) TN Govt. Website (www.tender.tn.gov.in) and TN Govt. e-procurement portal (https://tntenders.gov.in). The prospective bidders may download the same from the web sites free of cost.
11.	Documents to be uploaded by the Tenderers during e-submission	The techno-commercial bid and Price Bid (BOQ) and all documents scanned in support of the following shall be uploaded with the bid : 1. EMD. 2. BQR 3. Schedules B to G and other documents whichever is applicable as per the tender Specification requirements.
12.	Clarification to be sought for from	The Chief Engineer/Hydro, Tamil Nadu Green Energy Corporation Ltd., 5 th Floor, Eastern Wing, NPKRR Maaligai, 144, Anna Salai, Chennai – 600 002. Ph.044-2852 0409 E-mail:cehe@tnebn.net.org
13.	Place at which tender will be opened	O/o.The Superintending Engineer/ Hydro (Electrical), TNGECL, 5 th Floor/Eastern wing, NPKRR Maaligai,144, Anna Salai, Chennai-2. E-mail: sehe@tnebn.net.org

NOTE:**1. EMD:**

- i. In case of PEMD Holder, scanned copy of proof of PEMD along with an undertaking in lieu of EMD has to be uploaded.
- ii) In case of exemption of EMD, proof of exemption along with an undertaking in lieu of EMD and documents in support of investment held in plant and machinery has to be scanned and uploaded.
- iii) The bids not uploaded with EMD/PEMD proof **will be summarily rejected.**
- iv) In case of exemption of EMD, proof of exemption along with an undertaking on a non-judicial Stamp paper of value not less than Rs.500/- in lieu of EMD as per Annexure-I duly initialed/endorsed by the tenderer and documents in support of investment held in plant and machinery has to be scanned and uploaded.

TNGECL shall not be responsible for any delay in submission of EMD by any mode. The bids not uploaded with EMD/PEMD proof **will be summarily rejected.**

2. In the event of the specified date of opening of bids being declared holiday, the bid shall be opened on the next working day at the same time and venue.
3. Bid document can be downloaded free of cost and submitted online through the website <http://tntenders.gov.in> only by those bidders, who are having valid Digital Signature Certificate and the bid document cannot be purchased from

the Office of the Chief Engineer/Hydro by remitting the cash in the office of the Chief Engineer and no pre request for issue of bid document will be entertained in the Office of the Chief Engineer/Hydro.

4. The Contractors who had downloaded the Bid document from the website shall submit the Bid document through GOVERNMENT OF TAMIL NADU E-PROCUREMENT PORTAL Website before the scheduled time of submission. The electronic bidding systems would not allow any late submission of bids.
5. The Tenderers shall ensure whether any Clarification/Amendment/ Corrigendum is issued to the bid, before submission of their Tender, by visiting the respective Website regularly.
6. For other details, refer "**Instruction to Bidders**" in the tender document.

E-TENDERING METHODOLOGY

INSTRUCTIONS TO BIDDERS FOR ONLINE BID SUBMISSION:

The bidding under this contract is electronic bid submission through website <https://tntenders.gov.in> only. Detailed guidelines for viewing bids and submission of online bids are given on the website. Any citizens or prospective bidders can logon to this website and view the invitation for Bids and can view the details of works for which bids are invited.

REGISTRATION:

1. The prospective bidders can submit bids online, however, the bidders are required to have enrolment/registration in the website by clicking on the link "Online bidder enrolment" which is free of charge.
2. As part of the enrolment process, the bidders are required to choose a unique username and assign a password for their accounts.
3. Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These details would be used for any communication from the GOVERNMENT OF TAMILNADU E PROCUREMENT Portal.
4. Upon enrolment, the bidders are required to register their valid Digital Signature Certificate (DSC) (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify/nCode/eMudhra etc.), with their profile.
5. Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
6. Bidder then can login to the site through the secured login by entering their user ID/password and the password of the DSC/e-Token.

SEARCHING FOR TENDER DOCUMENTS

1. There are various search options built in the Website, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc.
2. Once the bidders have selected the tenders they are interested in, they may download the required documents/tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the Tamil Nadu Govt. e-Procurement Portal, to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
3. The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS

1. Bidder should take into account any corrigendum published on the tender document before submitting their bids.
2. Bidders are requested to go through the NIT and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents including the names and content

of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

3. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document and generally, they can be in PDF / XLS / RAR/DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
4. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My space or "Other Important Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.
5. The completed bid comprising scanned copy of the proof for the exemption from payment of EMD and necessary technical and commercial documents should be uploaded on the website along with signed and scanned copies of requisite certificates as are mentioned in the different sections in the tender document.

ELECTRONIC SUBMISSION OF BIDS:

The bidder shall submit online the requirements under EMD, qualification criteria and Technical Documents required and Price Schedule/BOQ. All the documents are required to be signed digitally by the bidder. After electronic online bid submission, the system generates a unique bid reference number which is time stamped. This shall be treated as acknowledgement of bid submission.

PROCEDURE FOR SUBMISSION OF BIDS:

- i. Bidder should log into the site well in advance for bid submission so that he/she can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- ii. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- iii. Bidder has to select the payment option as "Online" to pay the EMD amount as applicable and enter details of the instrument.
 - a) The online payment Gateway has been enabled for TANGEDCO in TN Tenders portal (www.tntenders.gov.in). The payment of EMD will be carried out by the Bidders only through online payment mode.
 - b) The EMD amount should be the exact amount and no excess or less amount should be transferred through **online payment gateway**. If excess or short, the tender status will be shown as invalid.
- iv) Bidder should prepare the EMD as per the instructions specified in the tender document. The scanned copy of proof of exemption of EMD has to be uploaded. Otherwise the uploaded bid will be rejected. After confirming the payment of EMD amount /uploading the proof for Exemption only, the

system will allow to submit the technical and financial bids. The bidder has to submit the tender document online well in advance before the prescribed time to avoid any delay or problem during the submission process. TNGECL shall not be responsible for any delay in submission.

TNGECL shall not be responsible for any delay in submission of EMD by any mode.

- v) A BOQ format for the price bid has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the BOQ format provided and no other format is acceptable. Bidders are required to download the BOQ file, open it and complete the colored (Unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the file name. If the BOQ file is found to be modified by the bidder, the bid will be rejected.
- vi) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- vii) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers' public keys.
- viii) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- ix) Upon the successful and timely submission of bids, (i.e. after clicking "Freeze Bid submission" in the portal) the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- x) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.
- xi) Department or Service Provider is not responsible for any failure such as a bad internet connection or power failure outside of their control. The bidder is responsible to ensure they have sufficient time to submit an electronic bid prior to closing date and time including the payment of any fees including the Bid security and getting e-receipt. In case of a failure in the system within the control of the service provider that may affect a bidding process, the contracting authority on his sole discretion will postpone the closing time at least 24 hours from the time of system recovery to allow bidders sufficient time to submit their bids.
- xii) The TNGECL may, at its discretion, extend the deadline for the submission of bids by amending the bidding document, in which case all rights and obligations of TNGECL and bidders subject to the previous deadline shall thereafter be subject to the deadline extended.

LATE BIDS:

The Electronic bidding system would not allow any late submission of bids after due date and time as per server time.

MODIFICATION AND WITHDRAWAL OF BIDS:

1. Bidders may modify their bids online before the deadline for submission of bids.
2. In case a bidder intends to modify his bid online before the deadline, the bidder need not make any additional payment towards the cost of bid processing. For bid modification and consequential re-submission, the bidder is not required to withdraw his bid submitted earlier. Modification and consequential re-submission of bids is allowed any number of times. The last modified bid submitted by the bidder within the bid submission time shall be considered as the bid. For this purpose, modification/withdrawal by other means will not be accepted. The bidder may withdraw his bid by uploading his request before the deadline for submission of bids, however, if the bid is withdrawn, the re-submission of the bid is not allowed.
3. No bid may be modified after the deadline for submission of Bids.

ASSISTANCE TO BIDDERS:

1. Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
2. Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

SECTION – I

EARNEST MONEY DEPOSIT

1. Tenderer should pay the specified amount towards Earnest Money Deposit, as follows. Earnest Money Deposit: Rs.1,00,000/- (Rupees One Lakh only).
2. The Earnest Money Deposit specified above should be paid through online. The online EMD payment made by the bidders will be credited to common pool account created by Finance department, Government of Tamilnadu by integrating the payment gateway services of SBI. The EMD of successful bidder alone will be credited to TNGECL's bank account and auto refund of EMD will be made to unsuccessful bidders after issue of purchase order/ Award of contract through portal. The scanned copy of proof for payment of EMD (ie. e-payment receipt) has to be uploaded.
3. The EMD will not carry any interest.
4. The Tenderers who are having valid Permanent EMD at TNGECL Headquarters for an amount of Rs.20Lakhs and above under revised slab are exempted from payment of Earnest Money Deposit and are eligible to participate in the tender.

Scanned copy of Proof of PEMD(held on or after 03.12.21 only) shall be uploaded. The bids not uploaded with EMD/PEMD proof will be summarily rejected.

5. If the Tenderer desires to become a Permanent E.M.D. holder, he is advised to deposit the required amount with the TNGECL as Permanent E.M.D. well in advance, obtain a certificate from the Financial Controller/TNGECL and upload copy of the same along with the tender.
6. Any other mode of payment of EMD other than prescribed in this specification shall not be accepted towards EMD and the tenders shall be rejected if EMD is not paid in the prescribed manner.
7. Cheque will not be accepted towards EMD.
8. The following categories of industries are exempted from payment of Earnest Money Deposit.
 - a. Departments of the Government of Tamil Nadu.
 - b. Undertakings and Corporations owned by Government of Tamil Nadu.
 - c. Labour Contract Co-operative Societies registered within Tamil Nadu.
 - d. The Small Scale Industrial Units within Tamilnadu who have registered under UDYAM Portal for the tendered item shall upload UDYAM Registration certificate or any other valid registration certificate/proof as notified by the Government of India.
The Small Scale Industrial Units located **outside** the state of **Tamil Nadu** are **not eligible** for **exemption** from payment of **EMD** against Udyam Registration Certificate even though registered in Udyam Portal for tendered items.

NOTE: SSI units having provisional registration certificate are not eligible for EMD Exemption.

- 9.0 Those Tenderers who are exempted from payment of EMD (Inclusive of PEMD holders) shall upload, in lieu of EMD, an undertaking on a non-judicial

Stamp paper of value not less than Rs.500/- in the form as per Annexure-I duly initialed/endorsed by tenderer to the effect to pay as penalty an amount equivalent to EMD in the event of non-fulfillment or non-observance of any of the conditions stipulated in the contract consequent to such breach of contract.

The State Government, Public Sector undertakings who are exempted from payment of EMD should also pay as penalty an amount equivalent to the amount fixed as EMD in the event of non-fulfillment or non-observance of any of the conditions stipulated in the contract. The GST applicable for the above shall also be paid to TNGECL by the bidder.

And on non-acceptance of undertaking for exemption of EMD the offer of the bidder shall be summarily rejected.

10.0 Conditions for rejection of bids:

- a) TENDERS RECEIVED WITHOUT THIS UNDERTAKING IN LIEU OF EMD/PEMD WILL BE SUMMARILY REJECTED.
- b) Tender will be rejected if the undertaking is not signed/authenticated in all pages of undertaking.
- c) Signature of witnesses should be affixed at the end of undertaking along with details of name and address.

11.0 Others viz. Central and Other State Government Departments, Undertakings and Corporations other than Tamil Nadu shall have to pay Earnest Money Deposit.

12.0 The tenderers shall upload the audited attested copy of Profit and Loss account/Balance Sheet along with the proof for exemption from payment of EMD in order to ensure the SSI status of the firm based on the investment held in Plant and Machinery for extending exemption from paying EMD.

In case the investment held by them in Plant and Machinery as per their financial statement of Accounts exceeds the enhanced limits of composite criteria for classifying micro and small scale units as per MSMED Act, the General Manager, District Industries Centre concerned will be requested to verify the SSI status of the firm. Till receipt of confirmation from General Manager/District Industries Centre concerned, the exemption from paying EMD for SSI Units shall not be extended.

13.0 Exemption from payment of EMD to Micro & Small Industries under MSMED Act 2006:

13.1 Government of India, Ministry of MSME, vide Notification No.S.O.1364(E) dated 21.03.2025 has notified certain composite criteria for classifying the enterprises as Micro, Small and Medium Enterprises and insisted Udyam registration in "Udyam Registration Portal" to obtain an e-certificate viz. Udyam Registration Certificate.

13.2 Composite Criteria:

A composite criteria of investment in Plant and Machinery or equipments and turnover has been specified to classify an enterprises as Micro, Small and Medium.

The composite criteria stipulated in the said notification are to be complied by **the micro and small industries for claiming EMD exemption.**

13.3 **Classification of Enterprises:**

An enterprise shall be classified as a micro, small or medium enterprises on the basis of the following criteria, namely:--

- (i) a micro enterprise, where the investment in plant and machinery or equipment does not exceed 2.5 Crores rupees and turnover does not exceed ten crores rupees;
- (ii) a small enterprise, where the investment in plant and machinery or equipment does not exceed twenty five crores rupees and turnover does not exceed one hundred crores rupees; and
- (iii) a medium enterprise, where the investment in plant and machinery or equipment does not exceed one hundred and twenty five crores rupees and turnover does not exceed five hundred crores rupees.

13.4 **Calculation of Turnover:**

In calculation of turnover of an enterprises, Exports of goods or services or both, shall be excluded while calculating the turnover of any enterprise whether micro, small or medium, for the purposes of classification.

The bidders should submit the certificate from Chartered Accountant, along with the bids whose turnover includes export proceeds, for ascertaining the turnover achieved on export of goods or services or both and included in the total turnover.

13.5 **Calculation of Investment:**

The Plant and Machinery shall have the same meaning as assigned to the plant and machinery in the Income Tax Rules, 1962 framed under the Income Tax Act, 1961 and shall include all tangible assets (other than land and building, furniture and fittings). The cost of certain items specified in the *Explanation I* to sub-section (1) of section 7 of the Act shall be excluded from the calculation of the amount of investment in plant and machinery.

The investment value in Plant and Machinery for the purpose has to be certified by a Chartered accountant and the same is to be uploaded in the bid in case the bidder claims EMD exemption.

13.6 **Registration of existing enterprises:**

- i. All existing enterprises registered under EM-Part-II or UAM shall register again on the Udyam Registration portal on or after the 1st day of July, 2020.
- ii. All enterprises registered till 30th June, 2020, shall be re-classified in accordance with the said notification.
- iii. The existing enterprises registered prior to 30th June, 2020, shall continue to be valid only for a period up to the 31st day of March, 2022.
- iv. An enterprise registered with any other organisation under the Ministry of Micro, Small and Medium Enterprises shall register itself under Udyam Registration.

13.7 **Updation and transition period in classification:**

An enterprise having Udyam Registration Number shall update its information online in the Udyam Registration portal, including the details of

the ITR and the GST Return for the previous financial year and such other additional information as may be required, on self declaration basis.

In case of an upward change in terms of investment in plant and machinery or equipment or turnover or both, and consequent re-classification, an enterprise will maintain its prevailing status till expiry of one year from the close of the year of registration.

In case of reverse-graduation of an enterprise, whether as a result of re-classification or due to actual changes in investment in plant and machinery or equipment or turnover or both, and whether the enterprise is registered under the Act or not, the enterprise will continue in its present category till the closure of the financial year and it will be given the benefit of the changed status only with effect from 1st April of the financial year following the year in which such change took place.

14.0 **a.** The following should be uploaded by the Vendor during submission of Techno-commercial bid for payment of EMD failing which the offer will be **SUMMARILY REJECTED.**

- i) The proof of Permanent EMD Holder.
- ii) The attested copy of proof of exemption of EMD and documents in support of investment held in plant and machinery. The proof of exemption of EMD with an undertaking on a non-judicial Stamp paper of value not less than Rs.500/- in lieu of EMD as per Annexure-I duly initialed/endorsed by the **tenderer.**

15.0 The Earnest Money Deposit made by the tenderer will be forfeited after e-tender opening if:

- (a) He withdraws his tender or backs out after acceptance.
- (b) He withdraws his tender before the expiry of validity period stipulated in the specification or fails to remit the security deposit.
- (c) The tenderer violates any of the provisions of these regulations contained herein.
- (d) The tenderer revises any of the terms quoted during the validity period.
- (e) In the event of the documents furnished with the offer being found to be bogus or the documents contain false particulars, the EMD paid by the tenderers will be forfeited in addition to blacklisting them for future tenders/contracts in TNGECL.
- (f) In case of tenderers participating on the strength of PEMD, an amount equivalent to the EMD for this specification will stand forfeited in the event of such tenderer committing any of the acts listed above.

SECTION – II

BID QUALIFICATION REQUIREMENTS (BQR)

The BIDDER shall become eligible to bid on satisfying the following

“BID QUALIFICATION REQUIREMENT”.

1. (a) The bidder should be either
 - (i) a manufacturer of excitation system.
Necessary documents such as license to manufacture, ISO certificate, Udyam Registration Certificate issued by the Department of Industries and Commerce etc., which are valid as on tender opening date shall be uploaded as documentary evidences to manufacture excitation system.
(Or)
 - (ii) An authorized dealer of excitation system. The dealership certificate issued by the Principal Manufacturer should be enclosed. The authorized dealers should furnish the documentary evidence in respect of the principal manufacturer as in BQR (1.a.i) along with the offer.
- b) The bidder should have supplied, erected, tested and commissioned also, the same make of excitation system offered, to any Hydro/Thermal/Gas Turbine machines of capacity 4MW or above to any State electricity board or PSU or Govt of India or state govt organization or Undertaking of Central Govt. or State Govt. during the preceding ten years as on the date of tender opening. Photo copies of purchase order/Works Contract order related to the above should be enclosed as evidence.

If the bidder is a dealer, then they should have supplied the product of the same principal manufacturer in BQR-1 or they can use the supply, erection, testing and commissioning experience of their principal manufacturer in BQR-1. Photo copies of Purchase order related to above should be uploaded as evidence.
2. Out of the excitation system supplied by the bidder for the above as mentioned in Sl.No.1(b), minimum one excitation system should have been in satisfactory operation for a period of minimum one year as on the date of tender opening during any time within the preceding ten years. The bidders should furnish the end user certificate for the same Purchase Order/Works Contract Order furnished against BQR (1).
3. The annual turnover of the bidder shall be more than Rs.26,59,585/- in any one of the last three financial years preceding the year 2025-26 (2022-23, 2023-24 and 2024-25). In case of bidders who happen to be companies registered under companies Act-1956, attested copy of the Audited financial statements like, Profit and loss A/c and Balance sheet with UDIN for the immediately Preceding 3 years (2022-23, 2023-24 and 2024-25) may be furnished and in case of others, the annual turnover certified by the practicing Chartered accountant with UDIN or attested copy of income tax statements containing annual turnover for all the 3 years should be enclosed as documentary proof to ensure the above turnover.
Note:1. The bidders should upload the documentary evidences for the above along with the offer only. All the above documents shall be duly attested by a competent authority like Notary public, Gazetted officer etc.

2.The end user certificate should necessarily contain the date of completion of work, date of commissioning and date of issue specifically to ascertain the period of satisfactory performance. If any clarification or need arises in the end user certificate it may be obtained separately by the tender inviting authority from the particular utility who have issued Purchase order or end user certificate.

3.The offer of the bidders who have stated to be previous suppliers to TNEB/TANGEDCO/TANTRANSCO/TNPDCL/TNPGCL/TNGECL will be considered for further evaluation, even though they have not enclosed copies of purchase orders/end user certificate after ensuring with concerned purchase order placing authorities.

THE OFFERS OF BIDDERS NOT SATISFYING THE ABOVE BID QUALIFICATION REQUIREMENTS WILL BE SUMMARILY REJECTED.

SD/-

CHIEF ENGINEER/HYDRO

SECTION – III

REJECTION OF TENDERS

- I. Tender will be **SUMMARILY** rejected if
 - (a) The EMD requirements are not complied with.
 - (b) Bid Qualification Requirements are not fully met.
 - (c) Received by Telex/Telegram/E-Mail/fax.
 - (d) The price bid/price schedule is indicated/uploaded along with the technical bid, in any format.
 - (e) The details of the e-receipt do not tally with the details available in the scanned copy and the data entered during bid submission time.
 - (f) The BOQ (Price bid) file is found to be modified by the bidder.

- II. Tender is LIABLE to be rejected, if it is:
 - a. Not covering the entire scope of work.
 - b. If the declaration as specified in Schedule E and F are not signed and uploaded.
 - c. With validity period less than that stipulated in this specification.
 - d. Not in conformity with TNGECL's Commercial terms and Technical Specifications (Section - V & VI).
 - e. Received from a tenderer who is directly or indirectly connected with Government Service or TNGECL Service or Service of local authority.
 - f. From any black listed Firm or Contractor.
 - g. From a tenderer whose past performance/Vendor rating is not satisfactory.
 - h. Not containing all required particulars as per Schedules.
 - i. Submission after the expiry of the due date and time.
 - j. Documents furnished by the Tenderers along with their offer being found to be bogus or contain false particulars.
 - k. Questionnaire as per Schedule-G is not duly filled up and properly signed by the tenderer.
 - l. Not furnished the GSTIN in the offer.
 - m. Not furnished the HSN code in the offer.
 - n. Not furnished the separate main EPF & ESI code number
 - o. Even though the Bidder meets the qualifying criteria, they are subject to disqualification if they have record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc.

SECTION – IV

GENERAL INSTRUCTIONS TO TENDERERS

- 1.1 E-tender in Two Part System (I) Technical Bid with Commercial terms but without Price Bid and (II) Price Bid will be received through e-tendering for and on behalf of TAMILNADU GREEN ENERGY CORPORATION LIMITED, herein after referred as TNGECL, so as to upload on or before the due date prescribed. All the tenders shall be uploaded and submitted strictly in accordance with the instructions set forth herein. THE TENDERERS WHO DO NOT FULFILL THE "BID QUALIFICATION REQUIREMENTS "AS PER SECTION – II NEED NOT PARTICIPATE IN THE TENDER. OFFERS NOT SATISFYING THIS "BID QUALIFICATION REQUIREMENTS" WILL NOT BE CONSIDERED AND WILL BE SUMMARILY REJECTED.
- 1.2 The Tamil Nadu Transparency in Tenders Act 1998 and Tamil Nadu Transparency in Tender Rules 2000 and subsequent amendments thereof are applicable to this Tender Specification.
- 1.3 The Specification is available in TANGEDCO web site (www.tangedco.gov.in) and Government web site (<https://tntenders.gov.in>)/Government website (www.tenders.tn.gov.in) and may be down loaded free of cost.
- 1.4 The tenderers who have downloaded the specification from TANGEDCO website (www.tangedco.gov.in)/ Government website (<https://tntenders.gov.in>)/Government website (www.tenders.tn.gov.in) shall ensure whether any clarification/ amendment is issued to the specification before submission of their tender, by visiting the above websites.

2.0 SCOPE OF WORK:

- 2.1 Upgradation of excitation system including design, Engineering, Manufacturing, supply, erection, testing and commissioning suitable to the existing Hydraulic system and Digital Governor Cum Auto Sequencer Panel(DGASP) at Sathanur Dam Power House/ Sathanur, Erode Generation Circle as per the technical specifications.

Tenderers are requested to inspect the site positively before tendering so as to obtain additional information if any.

- 2.2 The tenderers alone will be responsible for all the consequences for ignoring the advice of site visit and TNGECL will in no way be liable for any claim on this ground at a later date.
- 2.3 The tenderers are requested to contact Superintending Engineer/Erode Generation Circle regarding any further technical details and field visit to inspect the site.

3.0 SUBMISSION OF TENDER OFFER:

The Tenderer is expected to examine all instructions terms and Schedules detailed in the Specification and submit the Schedule of prices and other required particulars in the schedules called for in this specification, only as per the formats prescribed, herein.

3.1 QUESTIONNAIRE FILLING:

A Questionnaire is appended as Schedule-G in this specification for Bid Qualification Requirements, Commercial and Technical details. It is obligatory on the part of the tenderer to furnish all details as per the "Questionnaire". In case, this is not filled up and signed at the bottom of each page of the questionnaire and uploaded with the offer, the Bid will be liable for rejection.

4.0. TWO PART TENDER:

The e-Tenders shall be in Two Parts as detailed below.

i) Part I shall contain:

(a) Proof for payment of PEMD/ PEMD holders held on or after 03.12.21 only/ Exemption from payment of EMD & Undertaking in lieu of EMD as per Annexure-I

(b) Documentary evidences to satisfy the Bid Qualification Requirement and all required technical and commercial documents as required in the Specification.

ii) Part II shall contain the PRICE BID (BOQ) only.

If the price bid/price schedule is indicated/ uploaded along with the technical bid, the offer will be summarily rejected.

4.0.1. The Tender Offer consisting of Schedules-B to G should be filled up and signed by the Tenderer or any person holding Power of Attorney authorizing him to sign on behalf of the Tenderer before submission of the Tender. The date of signature should invariably be indicated.

4.0.2. In the event of tender being submitted by other than a firm, it must be signed by a partner (copy of partnership deed should be uploaded) and in the event of the absence of any Partner, it shall be signed on his behalf by a person holding a Power of Attorney authorizing him to do so, Certified copies of which shall be uploaded.

4.0.3. Tender submitted on behalf of companies registered under the Indian Companies Act, shall be signed by person duly authorised to submit the tender on behalf of the company and shall be accompanied by certified true copies of the resolutions, extracts of the Articles of Association, special or general Power of Attorney etc to show clearly the title, authority and designation of persons signing the tender on behalf of the company.

4.0.4. The tenderer should furnish the GSTIN numbers in the offer.

4.1. Modifications/Clarifications to Tender Documents:

4.1.1. At any time after the commencement of e-Tender and before the closing of the event, TNGECL may make any changes, modifications or amendments to the tender documents and same will be intimated to the concerned Vendors through corrigendum which can be downloaded from the Vendor login.

4.1.2. In case any tenderer asks for a clarification to the tender documents before 48 hours of opening of tenders, the CE/Hydro/TNGECL/ Chennai-2 will

clarify the same.

- 4.1.3. If any tenderer raises clarifications after the opening of the tender, the clarified reply issued by the Chief Engineer/Hydro, TNGECL, Chennai-600 002 on the clarifications will be final and binding on the Tender.
- 4.1.4. If the tenderer finds discrepancies/omissions or any ambiguity in any of the terms and conditions stipulated in this specification, he shall get it clarified, in writing at least 48 Hours before opening of the tender, from the Chief Engineer/Hydro/TNGECL, 5th Floor, NPKRR Maaligai, Electricity Avenue, 144, Anna Salai, Chennai-600002. All such clarifications/interpretations shall form a part of specification. Verbal clarifications and information obtained by the tenderer shall not in any way be binding on the Corporation. If this is not done and subsequent to the opening of the tenders, it is found that the doubt about the meaning or ambiguity in the interpretation of any of the terms and conditions stipulated in the specification are raised by the tenderer, either in this tender or by a separate letter, the interpretation or clarification issued by the Chief Engineer/Hydro, Tamil Nadu Green Energy Corporation Limited, Chennai – 2 on such of those terms and conditions of the Tender Document as may be raised by the tenderer shall be final and binding on the tenderer.
- 4.1.5. All tender offers shall be prepared by typing or printing in the formats enclosed with this specification.
- 4.1.6. All information in the tender offer shall be in ENGLISH only. It shall not contain interlineations, erasures or over writings except as necessary to correct errors made by the tenderer. Such erasures or other changes in the tender documents shall be attested by the persons signing the tender offer.
- 4.1.7. The offer shall contain full information asked for in the accompanying schedules and elsewhere in the specification.
- 4.1.8. Tenderer shall bear all costs associated with the participation in the e-Tender, and the PURCHASER will in no case be responsible or liable for these costs.
- 4.1.9. No offer shall be withdrawn by the tenderer in the interval between the deadline for submission and the expiry of the period of validity specified/extended validity of the tender offer.
- 4.1.10. The Tenderers are requested to furnish the exact location of their factories with detailed postal address, Pin Code, Telephone and Fax Nos., e_mail etc., in their tender so as to arrange inspection by the Corporation if considered necessary.
- 4.1.11. It will be the responsibility of such tenderer to fully be informed himself of all local conditions and factors which may have any effect on the equipments/materials/execution of works covered under these specification and documents.
- 4.1.12. It must be understood and agreed that such factors are properly

investigated and considered while submitting the proposals. No claim for financial adjustment to any tender awarded under this specification and document will be permitted by the TNGECL. Neither any change in the time schedule of the tender nor any financial adjustment arising thereof shall be permitted by the TNGECL, which are based on the lack of such clear information or its effect on the cost of the "supply" to the tenderer.

4.1.13. Tenders received from Agents will not be considered.

4.1.14. In the case of ambiguous or contradictory terms / conditions mentioned in the bid, interpretation as may be advantageous to the purchaser may be taken without any reference to the Tenderer.

4.2. QUOTATION OF RATES:

4.2.1. Rates should be quoted figures i.e., integers only.

4.2.2. Offers giving lump sum price, without giving their breakup as per details required in the attached Price Schedule-A shall be liable for rejection.

4.3. PRINTED TERMS AND CONDITIONS IN TENDERS:

Supplier's printed terms and conditions will not be considered as forming part of the tender under any circumstances.

4.4. INCOMPLETE TENDERS:

Tender, which is incomplete, obscure or irregular is liable for rejection.

5.0. TENDER OPENING:

5.1. OPENING OF COMMERCIAL & TECHNICAL BIDS WITHOUT PRICE (PART-I): (EMD & all other documents without Price Bid)

5.1.1 The Tender offers except price bid will be opened electronically at 14.30Hrs. on the date notified at the Office of the Superintending Engineer/Hydro (Electrical), 5th Floor, Eastern Wing, NPKRR Maaligai, 144, Anna Salai, Chennai-600 002, through <https://tntenders.gov.in> at scheduled date and time and this could be viewed by bidders online on the date and time mentioned as above.

5.1.2 In all cases, the amount of bid security and validity of the bid shall be scrutinized. Receipt of original instrument of bid security shall be confirmed by the Employer. Thereafter, the bidders' names, the presence or absence of Bid security and such other details as the Employer may consider appropriate, will be recorded as bid opening summary and the same will be uploaded on the e-procurement portal after techno commercial bid opening.

5.1.3. If the date set for tender opening happens to be a holiday, the tenders will be opened on the succeeding working day without any changes in the timings indicated.

5.2. OPENING OF THE PRICE BIDS: (PART - II)

5.2.1 The date and time of opening of Price Bids shall be later notified through registered e-mail to the Bidders who fulfill the BQR criteria and whose bids

are found to be commercially and technically acceptable.

5.2.2 The Bidders' names, the Bid prices and such other details as the Employer may consider appropriate, will be recorded as bid opening summary and uploaded by the Employer on the e-procurement portal. Any bid price, which is not submitted through the e-procurement system, will not be taken into account in Bid Evaluation.

5.2.3 If the date set for tender opening happens to be a holiday, the tenders will be opened on the succeeding working day without any changes in the timings indicated.

6.0. INFORMATION REQUIRED AND CLARIFICATIONS:

6.1. In the process of examination, evaluation and comparison of tender offers, the TNGECL may at its discretion, ask the Tenderer for a clarification of his offers. All responses to requests for clarifications shall be in writing to the point only. No change in the price or substance of the offer shall be permitted.

6.2 The TNGECL will examine the tender offers to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed and whether the offers are generally in order.

6.3 The Tender offers shall be deemed to be under consideration immediately after they are opened and until such time official intimation of award / rejection is made by the Tender Accepting Authority to the tenderers. The Tenderers shall not make attempts to establish unsolicited and unauthorized contact with the Tender Inviting Authority, Tender Accepting Authority or Tender Scrutiny Committee after the opening of the tender and prior to the notification of the award and any attempt by any tenderers to bring to bear extraneous pressures on the Tender Accepting Authority shall be sufficient reason to disqualify the tenderer.

6.4 After acceptance of the tender by the Tender Accepting Authority, the details will be arranged to be published in the Tender Bulletin of Tamil Nadu Government.

6.5 Mere submission of any Tender offer connected with these documents and Specification shall not constitute any agreement. The tenderer shall have no cause of action or claim, against the TNGECL for rejection of his offer. The TNGECL shall always be at liberty to reject or accept any offer or offers at its sole discretion and any such action will not be called into question and the Tenderer shall have no claim in that regard against the TNGECL.

7.0. PROCESS TO BE CONFIDENTIAL:

7.1. Information relating to the examination, clarification, evaluation, and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with

such process until the award to the successful Bidder has been announced. Any effort by a Bidder to influence the Employer's processing of Bids or award decisions may result in the rejection of his Bid.

8.0 EXAMINATION OF BIDS AND DETERMINATION OF RESPONSIVENESS:

- 8.1. Prior to the detailed evaluation of Bids, the Employer will determine whether each Bid (a) meets the eligibility criteria, (b) has been properly signed, (c) is accompanied by the required securities and documents and (d) is substantially responsive to the requirements of the Bidding documents.
- 8.2. A substantially responsive Bid is one which conforms to all the terms, conditions, and specifications of the Bidding document, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the works; (b) which limits in any substantial way, inconsistent with the Bidding documents, the Employer's rights or the Bidder's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.
- 8.3. If a Bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

9.0. CORRECTION OF ERRORS:

The e- Procurement system automatically calculates the total amount from the unit rates and quantities and the system also automatically populates the amount in words from the amount in figures and therefore there is no scope of discrepancy and need for arithmetic correction.

10.0 EVALUATION AND COMPARISON OF TENDER OFFERS:

- 10.1 The tenders will be evaluated strictly as per the Tamil Nadu Transparency in Tenders Act, 1998 and the Tamil Nadu Transparency in Tender Rules, 2000 and its subsequent amendments till date.
- 10.2 The tender offers received for consideration will be examined to determine whether they are in complete shape, all required data have been furnished, the tender offer is properly signed and are generally in order and whether the tender offer conforms to all the terms and conditions of the Tender document without any deviation.
- 10.3 For the purpose of evaluation of the tender offers, the following factors will be taken into account for arriving at the evaluated price.
 - a) The rate of CGST, SGST, and IGST as applicable both in percentage and amount shall be indicated in the offer along with HSN code (Harmonised System of Nomenclature Code).

- b) The evaluated price shall be arrived in compliance with the provisions of GST on the Transaction value i.e. (Ex works price of material + Packing & Forwarding+ Freight & Insurance) + GST. In case of import of goods would be treated as interstate supplies and would be subject to IGST in addition to applicable customs duty.
- c) Since GST is enacted wherein all taxes & duties are subsumed, price evaluation shall be inclusive of applicable GST in all cases, i.e. even if the bidders are only within the State or bidders are within the State and outside TN.

10.4 Tenderers shall quote for all the tendered items to have a composite offer for evaluation.

10.5 The offers will be evaluated as a whole package.

10.6 The price quoted for the works will be arrived at as detailed in Clause 10.03. From this arrived rates, the lowest offer will be considered.

10.7 **Tie breaker:** When more than one bidder have quoted same value during bid submission and accepted in Finance evaluation, Evaluator is allowed to select any one combination of bidder value (i.e.L1 bidder) to initiate for finance bid resubmission for tie breaker.

10.8 The rates quoted by the eligible lowest tenderer in the open tender shall be compared with the prevailing market rate and the rates of previous period and if the Tender Accepting Authority is of the view that the quoted rates are too high, the rates will be negotiated and the rate will be determined.

10.9 **Online negotiation:** Provision to go for on line negotiation has been provided for the Tender Evaluator. The online negotiation process in the portal is similar to the process for negotiation under tie breaker process. However, financial rebid submission can be invited from only one bidder.

11.0 VALIDITY:

11.1 The Tender offer shall be kept valid for acceptance for a period of **90 days** from the date of opening of offers. The offers with lower validity period are liable for rejection.

11.2 Further, the tenderer shall agree to extend the validity of the bids without altering the substance and prices of the bid for further periods, if any required by the TNGECL.

12.0 RIGHTS OF THE TNGECL:

Notwithstanding anything contained in this specification, the TNGECL reserves the right to:

- (a) Accept the lowest tender.

- (b) Revise the quantities at the time of placing orders to the extent of + or – 25%.
- (c) to vary the completion period/delivery period based on the requirement and contingencies at the time of placing the purchase order
- (d) Reject any or all the tenders or cancel without assigning any reasons thereof.
- (e) Recover losses if any sustained by TNGECL, from the successful tenderer who pleads his inability to supply and backs out of his obligation after award of contract. The Security Deposit cum performance guarantee paid shall be forfeited in such cases.
- (f) To cancel the orders for not keeping up the delivery schedule.
- (g) To split the tender quantity & place orders on one or more than one firm to meet the delivery requirement.
- (h) After negotiation with the tenderer and before placing the order accepting the tender, if the tender accepting authority decides that the price quoted by such tenderer is high, the tender is liable for rejection
- (i) To Relax or waive or amend any of the conditions stipulated in the tender specification wherever deemed necessary in the best interest of the TNGECL.
- (j) The purchaser reserves the right to request for any additional information and also reserves the right to reject or accept the proposal of any tenderer, if in the opinion of the purchaser, the qualification data is incomplete or in the opinion of the TNGECL the bidder is found not qualified to satisfactorily perform the contract.

NOTE :-

In the event of the documents furnished with the offer being found to be bogus or the documents contain false particulars, the EMD paid by the tenderers will be forfeited in addition to blacklisting them for future tenders/contracts in TNGECL.

13.0 DEVIATIONS:

- 13.1 The tenderer shall furnish, if there are any deviations in the commercial and technical terms in the Schedules B & C Annexed. Deviations mentioned elsewhere other than Schedule B & Schedule C will not be considered. If no deviations are furnished in said schedules, it will be construed that the tenderer is accepting all terms specified in the specification. Similarly, if any deviations are furnished in the said schedules, it will be construed that these are the only deviations and the tenderer is accepting all other terms of the specification and the offer will be taken for evaluation accordingly.
- 13.2 THE OFFERS OF THE TENDERERS WITH DEVIATIONS IN COMMERCIAL TERMS AND TECHNICAL TERMS OF THE TENDER DOCUMENT ARE LIABLE FOR REJECTION.
- 13.3 NO ALTERNATE OFFER WILL BE ACCEPTED.

- 13.4 Any attempt by any tenderer to bring/ to bear extraneous pressure on Tender Accepting Authority shall be sufficient reasons to disqualify the tenderer.

14.0. BAR OF JURISDICTION:

Save as otherwise provided in Tamil Nadu Transparency in Tender Act 1998 no order passed or proceeding taken by any officer or authority under this Act shall be called in question in any Court, and no injunction shall be granted by any court in respect of any action taken or to be taken by such officer or authority in pursuance of any power conferred by or under the above Act.

15.0. APPEAL:

Any tenderer aggrieved by the order passed by the Tender accepting Authority under Section-10 of the Tamil Nadu Transparency in Tenders Act 1998 may appeal to the Government within 10 (Ten) days from the date of receipt of order.

16.0 PERMANENT ACCOUNT NUMBER (PAN) & GSTIN REGISTRATION NUMBER :

The tenderers are requested to furnish the Permanent Account Number and **GSTIN** Registration number in their offer.

- 17.0** The tenderer who is an industrial company shall state clearly whether the company is a potentially sick Industrial Company in terms of Section 23 or 25 of the sick Industrial Companies act 1985.

SECTION: V

COMMERCIAL

1.0 PRICE:

- 1.1 The tenderers are requested to quote only FIRM Price valid for the entire duration of contract.
- 1.2 The prices quoted should be Unit all inclusive price for upgradation of excitation system including design, Engineering, Manufacturing, supply, erection, testing and commissioning suitable to the existing Hydraulic system and Digital Governor Cum Auto Sequencer Panel(DGASP) at Sathanur Dam Power House/Sathanur, Erode Generation Circle as per the technical specification.

The split up prices for the various works involved in the Upgradation of excitation system including design, Engineering, Manufacturing, supply, erection, testing and commissioning suitable to the existing Hydraulic system and Digital Governor Cum Auto Sequencer Panel(DGASP) at Sathanur Dam Power House/Sathanur, Erode Generation Circle as per the technical specifications shall be furnished separately for each item.

The prices quoted should be Unit all inclusive price including Ex-works, Packing and Forwarding, Freight and Insurance charges with applicable rate of GST separately to cover transit risk & unloading at site for the supply portion of the work. Labour portion of works should include insurance towards risk during replacement works till handing over to TNGECL.

Applicable GST (CGST, SGST or IGST) shall be quoted separately. A format for price is given in Schedule 'A' and the price shall be quoted online only in the BOQ (Price schedule) in .xls format.

- 1.3 All the tests specified shall be conducted at TENDERER'S COST.
- 1.4 The L1 tenderer shall furnish the declaration in respect of passing of Input Tax Credit (ITC) benefit in the format as stipulated in Annexure-IV of this specification. Further in the event if the L1 tenderer specifies the ITC benefit as nil, the same shall be supported with certificate from the Chartered Accountant.
- 1.5 PERMANENT ACCOUNT NUMBER AND GSTIN NUMBER:

The Tenderer shall indicate the Permanent Account No. in Schedule 'G' of the specification and should enclose the details of PAN issued by Government of India, Income Tax Department and GSTIN number of the firm with proof with the tender.

2.0 Goods and Services Tax [GST]:

- i. Goods and Services Tax [GST] as a modern law, has been brought after Article 366(12A) of the Constitution as amended by 101st Constitutional Amendment Act, 2016. GST is an indirect tax system, commonly used by

both the Central Government and the State/UT *to final consumption with credit of taxes paid at previous stages available as set off. In a nutshell, only value addition will be taxed and burden of tax* Governments on goods and services. GST is *a destination based tax on consumption of goods and services. It is proposed to be levied at all stages right from manufacture up is to be borne by the final consumer.* GST has been rolled out w.e.f. 01.07.2017, across India.

- ii. The GST to be levied by the Centre on intra-State supply of goods and / or services would be called the Central GST (CGST) and that to be levied by the States/Union territory would be called the State GST (SGST)/ UTGST. Similarly, Integrated GST (IGST) will be levied and administered by Centre on every inter-state supply of goods and services.
- iii. Any supplier of goods and service Provider of services who makes a taxable supply with an aggregate turnover of over Rs.20 lakhs in a financial year is required to obtain GST registration. In special category states, the aggregate turnover criteria is set at Rs.10 lakhs. in simple words Every business whose taxable supply of goods or services under GST (Goods and Service Tax) and whose turnover exceeds the threshold limit of Rs.20 lakh/10 Lakh as applicable will be required to register as a normal taxable person.
- iv. *GST Registration Number:* TNGEDCO has migrated into GST regime on 15.06.2017 by duly uploading various mandatory data as required by the GST portal. The provisional ID issued to TNGECL is [33AAKCT7634G1Z6](#). The details are also posted in TANGEDCO web portal.
- v. GST Registration Number or GSTIN is 15 Digit identification number which is allotted to each applicant who applied for GST Registration. GST Number is completely based on the Pan Number and State code. First two digit represent the state code and another 10 digit represent the PAN number of the client, one digit represent the entity code (Like proprietorship or partnership etc), one digit is blank and last one is represent check digit.
- vi. *Transaction Value:* The value of a supply of goods or services or both shall be the transaction value, which is the price actually paid or payable for the said supply of goods or services or both where the supplier and the recipient of the supply are not related and the price is the sole consideration for the supply. Sec 15(1) states that value of supply of goods and service shall be the transaction value i.e. the price actually paid or payable.
The conditions for accepting the transaction value are
a) Supplier and the recipient of the supply are not related.
b) Price is the sole consideration for the supply.
- vii. *Composition Scheme:* Composition scheme specifies that registered person whose turnover in the preceding financial year is below certain specified limit (Currently Rs.75 lakhs) may intimate the proper officer to pay in lieu of tax payable by him an amount calculated at such rate may be specified.

Eligibility for composition scheme: Sec10(2) of the central Goods and Services Tax Act, 2017 states that the registered person shall be eligible to opt under sub- section (1), if-

- . He is not engaged in the supply of services other than supplies referred to in clause (b) of paragraph 6 of Schedule II;
- . He is not engaged in making any supply of goods which are not leviable to tax under this Act;
- . He is not engaged in making any inter-State outward supplies of goods;
- . He is not engaged in making any supply of goods through an electronic commerce operator who is required to collect tax at source under section 52; and
- . He is not a manufacturer of such goods as may be notified by the Government on the recommendations of the Council.

viii. *Supply of Service and Goods:* When there is a combined supply of many goods /services, it has to be determined whether it is a Composite supply or mixed supply of goods or services

(a) *COMPOSITE SUPPLY:* A composite supply is the one where all the goods or services or a combination has to be supplied together i.e., naturally bundled and there would be a Principal Supply that could be identified (Ex.Supply of Machinery with packaging, insurance and freight – the principal supply is machinery). In this case, the rate of principal supply will be applied on entire value.

(b) *MIXED SUPPLY:* A mixed supply is where the goods or services or the combination thereof which could be individually supplied (like Pizza and Coke) but sold together at a single price. In this case, the highest rate to the good in that mix is applied on all the goods. The GST shall be applicable at appropriate prevailing rates as notified by GST Act. In the event of delay in execution of contract, the GST rate prevailing on the scheduled period or on the actual date of execution, whichever is less only will be admitted.

The bidders should have registered under GST Act and furnish GSTIN. In the event of contractor is within TN, SGST & CGST shall apply and if the contractor is outside TN, IGST shall apply.

2.1 Goods and Services Tax:

2.1.1 The amount of CGST, SGST, and IGST as applicable shall be indicated in percentage payable and amount separately in the tender offer.

2.1.2 As per the Central Tax Rate (Notification No.31 dt.13.10.2017) for Works Contract of a canal, Dam or other irrigation work, the subject work is applicable for availing concessional GST.

2.1.3 In case of delayed completion, the GST prevailing on the date of completion or on the last day of the contractual completion period whichever is LESS will be admitted. For both the cases, the contractor shall furnish documentary evidence while submitting the bills for payment.

It is the responsibility of the tenderer to make sure about the correct rates of duty liveable on the material/labour at the time of tendering. If the rates assumed by the Tenderer are less than the current rates prevailing at the time of tendering, the TNGECL will not be responsible for the mistake. If the rates assumed by the tenderer are higher than the current rates prevailing at the time of tendering, the GST prevailing at the time of tendering will only be paid.

2.1.4 Any Variation in GST due to statutory Variation within the contract delivery date shall be considered by the TNGECL.

2.1.5 In case of delayed completion, the GST prevailed on the date of actual completion period applicable or on the date of contractual date of completion whichever is less shall be admitted.

2.1.6 TDS under GST is applicable in the proposed contract at the rate of 2% on each and every invoice of contract.

2.1.7 TDS under section 194 Q of IT Act:

Any person, being a buyer, who is responsible for paying any sum to any resident for purchase of goods of value (or) aggregate value exceeding Rs.50 lakhs in any previous year, shall, at the time of credit of such sum to the account of the seller (or) at the time of payment, whichever is earlier, shall deduct an amount equal to 0.1% of such sum exceeding Rs.50 Lakhs as TDS under Section-194Q of IT Act. The supplier of goods is required to furnish the PAN to TNGECL for making the payment. In case the suppliers do not have PAN, TNGECL is required to deduct tax at higher rate as per the provisions of section 206AA. In case of specified person i.e., Any person who has not filed Income Tax return for two previous years immediately before the previous year in which TDS is required to be deducted and the time limit for filing of income tax return u/s 139(1) of the Income Tax Act, 1961 has expired provided the total TDS & TCS in INR is Rs.50,000 (or) more in each of the two previous years the TDS rate u/s 194Q will apply at higher rate u/s.206AB.

The provisions of this section shall not apply to the transactions on which tax is deductible under any other provisions of the Income Tax Act 1961 and also on the transactions in which Tax is collectible under the provisions of Section 206C.

On purchase of goods/materials, TNGECL shall have the primary and foremost obligation to deduct Tax at source and no tax shall be collected on such transaction u/s.206C(1H). TDS u/s 194Q is also applicable on the Advance paid for purchase of goods.

In case of works contract wherein supply and erection portions are separable, the value of supply of goods exclusive of GST will be subject to deduction of TDS under section 194Q. On the other charges i.e. erection, testing, commissioning and maintenance charges, TDS under section 194C will apply and hence TDS u/s 194Q will not apply.

The above provisions comes into effect from 01.07.2021 onwards and hence no TCS under Section 206C(1H) has to be paid by TNGECL on purchase of Goods. Accordingly, TNGECL will deduct TDS under section 194Q on all the purchase of goods exceeding the threshold limit i.e. aggregate credit (or) payment exceeds Rs.50 Lakhs. It is mandatory for vendor to submit the declaration format in Annexure A to determine the applicability of TDS rate u/s 206 AB.

In case any procurement of goods/materials are made by TNGECL from overseas supplier and the payment is not taxable to the overseas supplier in India, the TDS under section 194Q will not apply.

2.2 GST ON FORFEITURE OF SD:

- 2.2.1 Forfeiture of Security Deposit if any arises, will attract GST @ 18% and the GST will be collected additionally from the Supplier.

2.3 Verification of GSTR-2A:

The GSTR-2A for verification of GST remittance will be verified at the time of P.O closure. In case of non-filing of GSTR-1 by the suppliers, the release of SD and retention amount will be withheld.

3.0 INCOME TAX:

Income Tax will be recovered from the contractors every running bill at the prevailing rate of tax in force with amendments issued from time to time as per the Income Tax Act.

4.0 INSURANCE:

- 4.1 Contracting firms shall arrange insurance for the equipment and all its accessories being supplied by them, through any of the authorized insurance companies. The equipment shall be insured to cover transport (from Warehouse) and 90 days storage risk at site. The damages, if any, during transit will be reported within 30 days of receipt of materials. It will be the responsibility of the successful tenderer to replace the defective / damaged materials and make good the shortages and other losses in transit, free of cost, lodge and recover claim from Insurance, Under-writers/Carriers.
- 4.2 Contracting firms shall also arrange insurance for Upgradation of excitation system including design, Engineering, Manufacturing, supply, erection, testing and commissioning suitable to the existing Hydraulic system and Digital Governor Cum Auto Sequencer Panel(DGASP) at Sathanur Dam Power House/Sathanur, Erode Generation Circle on the above lines.

5.0 PACKING AND FORWARDING:

The equipment and all its accessories shall be securely packed so as to withstand handling during transport & subsequent storage and dispatched, freight paid, duly insured, at successful tenderer's risk and cost. The packing may be in accordance with the manufacturer's standard practice. The successful tenderer is responsible for ascertaining the facilities that exist for

road transport to site. Each package shall be clearly marked and contain detailed packing list, such as gross weight, net weight etc. The successful tenderer is solely responsible for any loss or damage during transport. The dispatch of materials shall be made only after the approval of test certificates by the TNGECL. The equipment/Materials shall be unloaded at destination Site by the successful tenderer free of cost. Proper instructions for storage at site may also be furnished to the consignee well in advance.

6.0 PAYMENT:

6.1 a) Payment for the supplies/works will be made by RTGS/NEFT on any one of the Nationalized Banks/Scheduled Banks approved by Reserve Bank of India in Tamil Nadu. The Bank charges involved in making the payment will be to the account of the Tenderer.

(b) The successful Tenderer has to furnish the following details of the Bank account to which the payment be credited.

1. Name of the Account Holder
2. Name of the Bank
3. Branch
4. Account No
5. IFSC code of the Branch

6.2 Payments will not be made for equipments/materials damaged during transit. All defective materials shall be replaced by the successful tenderer free of charge.

6.3 (a) For the works completed within the contractual Completion period:

95% of the all inclusive price of the contract will be paid within 90 days after completion of work and successful Upgradation of excitation system in all respects and on receipt of contractor's bill with required documents and the balance 5% will be made within 90 days after closure of work Contract order.

(b) For the works completed beyond the contractual Completion period:

95% of the all inclusive price of the contract after deducting the appropriate amount of L.D will be paid within 90 days after completion of work and successful Upgradation of excitation system in all respects and on receipt of contractor's bill with required documents and the balance 5% will be made within 90 days after completion of the execution of contract and after closure of work Contract order.

(C) For delayed payments, if any, simple interest for the delayed payment shall be paid by TNGECL to vendors at the SBI three months MCLR rate for the delayed period beyond 90 days.

The simple interest shall be calculated for the delayed period by adopting the 3 months MCLR of SBI prevailed at the time of signing of agreement and in the cases where no agreement is signed, only P.O/WCT is issued, the date of the P.O/WCT shall be taken as base date to ascertain the interest rate.

- 6.4 In case of delay in supply, the materials will be accepted subject to the following conditions.
 - (a) There should be no declining trend in prices.
 - (b) Payment will be released as per the recent purchase order rate or lowest rate obtained during the recent tenders opened subject to levy of liquidated damage for belated supplies.
 - (c) TNGECL reserves the right to accept or reject the delayed supplies without assigning any reason therefore and take action as per the other terms and conditions of this specification.
- 6.5 The bills for payment will be passed only after the approval/ acceptance of the following:
 - (a) Security Deposit cum Performance guarantee for 5% value of the order.
 - (b) Test certificate.
 - (c) Guarantee Certificate.
 - (d) Undertaking towards Jurisdiction for Legal Proceedings.
 - (e) Acceptance of the Proof for payment of contributions – both Employer's and Employee's contributions made to the EPF & ESI Organizations, by SE/Erode GC in accordance with the **Clause 43(e)** of this section.
 - (f) Acceptance of the undertaking as per **Annexure-VII** to ensure the remittance of EPF & ESI, Employee and Employer contribution made to the EPF & ESI Organizations, by SE/Erode Generation Circle, in accordance with the **Clause 43(f)** of this section.
- 6.6 The successful tenderer should dispatch the materials only after getting dispatch clearance. If the successful tenderer dispatches the materials without the prior approval of the purchaser, then the purchaser shall not be responsible for any demurrage or wharfage or both and only the successful tenderer should bear any expenditure arising out of such unapproved dispatches.
- 6.7 The works contract order will be closed on completion of Upgradation of excitation system works in all respect as per technical specification.
- 6.8 TNGECL cannot avail input tax credit from suppliers whose turnover exceeds Rs.5 Crores without an e-invoice or e-invoiced debit note or e-invoiced credit note. Bidders having annual turnover exceeding Rs.5 Crores who participates in this tender shall claim payment by raising e-invoice only. E-invoice is a system in which B2B invoices are authenticated electronically by GSTN for further use on the common GST portal. Under the electronic invoicing system, an identification number will be issued against every invoice by the Invoice registration Portal (IRP) to be managed by the GST network (GSTN).

7.0 SECURITY DEPOSIT CUM PERFORMANCE GUARANTEE:

- 7.1 The successful tenderer will have to furnish 5% value of total contract value (All-inclusive) as Security Deposit cum Performance Guarantee in the form of electronic mode of payment/Banker's Cheque/D.D.(or)Pay order/ Irrevocable Bank Guarantee before commencement of supply/work to the Superintending Engineer/Erode Generation Circle/Uratchikottai for acceptance.
- 7.2 The successful tenderer will have to furnish the Security Deposit cum performance guarantee as per clause 7.1 within **30 days** from the date of receipt of Works contract order/Purchase Order failing which TNGECL will be cancel the order placed on the firm. **The Security Deposit cum Performance Guarantee will not carry any interest.** The belated payment of security deposit shall not be accepted. **In the event of failure to remit security deposit within the prescribed period, EMD shall be forfeited and the order will be cancelled.**
- 7.3 The Bank Guarantee shall be valid for a period of **27 months** from the anticipated date of completion of the Upgradation of excitation system work in all respect at site in good condition. In case of delay in completion of works, the SD cum Performance Bank Guarantee should be extended suitably. The Security Deposit cum Performance Bank Guarantee shall be returned only after the expiry of guarantee period after ensuring that defects/damages during the guarantee period are rectified/replaced. The SD cum PG shall be returned to the tenderer only if the tender is completed to the satisfaction of the Corporation.
- 7.4 The extended Bank Guarantee shall be submitted to TNGECL within the date of expiry of existing Bank Guarantee. In case of failure to submit such extended Bank Guarantee within the due date, TNGECL shall invoke the Bank Guarantee by addressing the Bank directly.
- 7.5 If the purchaser incurs any loss or damage on account of breach of any of the clauses or any other amount arising out of the contract becomes payable by the successful tenderer to the purchaser, then the purchaser will in addition to such other dues that he shall have under the law, appropriate the whole or part of the Security Deposit cum Performance Guarantee and such amount that is appropriated will not be refunded to the successful tenderer.
- 7.6 Failure to comply with the terms regarding Security Deposit cum Performance Guarantee set out in the works contract order within the stipulated time by the successful tenderer will entail in cancellation of the order without any further reference to the successful tenderer.

No tenderer is exempted from payment of Security Deposit cum Performance Guarantee.

- 7.7 If the supplier failed to replace/rectify the defects within time and non compliance of guarantee clause, TNGECL reserves the rights to invoke the SD cum Performance guarantee.

- 7.8 The SD forfeited will also attract GST@18% and will be additionally collected from the tenderers.

8.0 COMPLETION PERIOD:

- 8.1 The new excitation system should be manufactured according to site condition and erected according to site condition.
- 8.2 The successful tenderer shall have to deliver the new excitation system with all its associated accessories to Sub stores, Sathanur Dam Power House/Sathanur Dam in Erode Generation Circle as described in the technical specification **within Five months** from the date of receipt of Works Contract Order. However, the tenderers are requested to quote the minimum period required for the above.
- 8.3 The dismantling of excitation system and erection, testing & commissioning of new excitation system with all its associated accessories at Sathanur Dam Power House/Sathanur Dam, Erode Generation Circle is to be completed **within 40 days** from the date of handing over of the site. The site should be taken over within a week from the date of receipt of intimation by the concerned Executive Engineer/ Barrage Power Houses-4/Uratchikottai.
- 8.4 Only the date of delivery of excitation system will be reckoned as date of delivery for this purpose. Only the date of completion of Upgradation of excitation system works will be reckoned as date of completion for this purpose.
- 8.5 The above delivery and completion period shall be guaranteed by the tenderer under liquidated damages clause governed by clause 10 of this Specification.

8.6 E-WAY BILL:

E-Way Bill is an electronic document to be generated to cover movement of goods more than Rs.1,00,000 and such generation needs to be done in e way bill portal. Consequently, transporters of goods are required to carry an e way bill under GST provisions for the movement of such goods. The value of goods shall be the value declared in an invoice, a bill of supply or a delivery challan and also includes the Central tax, State or Union territory tax, Integrated tax and cess charged, if any. But it will not include value of freight charges for the movement charged by the transporter.

It is the responsibility of Supplier/Contractor to ensure the delivery at the destination stores/sites of TNGECL. Therefore, it is the responsibility of the Supplier/Contractor or their transporters to generate e-way bill before transporting goods for delivery at TNGECL's premises.

9.0 LOSS OR DAMAGE:

- 9.1 External damages that are prima facie, the results of handling in transit or due to defective packing and shortages will be intimated within one month from the date of receipt of the materials at site. Internal defects, damages

or shortages of integral parts, which cannot ordinarily be detected on a superficial visual examination, though due to handling in transit or defective packing, would be intimated within 2 months from the date of receipt of materials at stores. In either case, the defective materials shall be replaced / rectified by the successful tenderer, free of cost as per Clause 13-1.

- 9.2 If during the period of supply, it is found that goods already supplied are defective in material or workmanship or do not conform to specification or are unsuitable for the purpose for which they are purchased, then it will be open to the purchaser either to reject the goods or repudiate the entire contract and claim such loss that the purchaser may suffer on that account or require the successful tenderer to replace the defective goods, free of cost.
- 9.3 Similarly, if during the guarantee period any of the goods are found to be defective in materials or workmanship or do not conform to specification, are unsuitable for the purpose for which they are purchased, it will be open to the purchaser either to repudiate the entire contract and claim damages or accept such parts of the goods that are satisfactory and require the successful tenderer to replace the balance or to claim compensation for the entire loss sustained by the purchaser on that account.
- 9.4 In the event of supplies being received damaged/or of any shortage at the destination site, the cost of such materials, applicable taxes (if payable) and other charges payable thereof will be paid only proportionate to the value of materials received in good condition, unless the damaged goods or short supplies are made good free of cost by the successful tenderers. The defective materials shall have to be taken back from site at your risk and cost. In any case, damaged or defective materials should be replaced free of cost to the TNGECL.
- 9.5 For all legal purposes, the materials shall be deemed to pass into the TNGECL's ownership at the destination, where they are to be delivered and accepted.

10.0 LIQUIDATED DAMAGES:

- 10.1 The delivery as specified should be guaranteed by the successful tenderer under the liquidated damages clause given below:
 - a) If the successful tenderer fails to deliver the equipments/materials or fails to complete the works within the time specified in the contract or any extension thereof, the purchaser shall recover from the successful tenderer as liquidated damages, a sum of HALF PERCENT (0.5%) of the total value of works for each completed week of delay.
 - b) Liquidated Damages will be levied for delay in replacement/repair of defective/damaged supply.

- c) The total Liquidated Damages shall not exceed ten per cent (10%) of the contract price.
- d) Liquidated Damages will also be levied for delay in taking over of the site for the work within 5days from the date of receipt of intimation from Superintending Engineer/Erode Generation Circle.

For material delivery portion, only the date of receipt of new excitation system with all its associated accessories at Sathanur Dam Power House/ Sathanur Dam in good condition will be reckoned as date of delivery for this purpose.

For work portion, only the date of commissioning of new upgradated excitation system with all its associated accessories will be reckoned as date of completion for this purpose.

- 10.2 If the works are completed by the successful tenderer beyond the period of completion and they are accepted by the TNGECL, such acceptance is without prejudice to TNGECL's right to levy liquidated damages for the delay in completion of works.
- 10.3 If the work is not carried out at all, the purchaser shall recover from the successful Contractor, as liquidated damages a sum equal to TEN PERCENT (10%) of the contract price of the works contract besides forfeiture of SD cum Performance BG.
- 10.4 The successful tenderer is liable to pay the amount of loss sustained by the TNGECL in the event of non-execution of orders, if any placed on him to the satisfaction of the TNGECL under the terms and conditions of contract and in the event of placing orders for such quantities on some others at a higher price.
- 10.5 Tenderers not giving clear and specific acceptance to the above clauses are liable for rejection.
- 10.6 If there is any downward trend in prices on account of belated completion of works, the Contractors have to accept the same with the levy of liquidated damages, for belated completion of works.
- 10.7 Liquidated damages as per the terms of W.C.T. will be recovered from the respective bills itself for the delayed completion of works.
- 10.8 In case of part work completion which would affect the commissioning of the unit, then LD will be levied for the entire contract value of that particular equipment and not on the value of the delayed portion only.
- 10.9 The TNGECL will also be at liberty to cancel the W.C.T. if the supply is not completed within the accepted delivery period notwithstanding the liquidated damages clause applicable for the belated supplies. Any charge for canceling the W.C.T will not be accepted under any circumstances.

- 10.10 In the event of cancellation of the WCT for non-completion of supply by the supplier then the short supplied items may be ordered afresh. The excess price if any between the original and new WCT will be recovered from the original supplier from the amount due to the original supplier either from this contract or from any other contract.

11.0 FORCE MAJEURE:

- 11.1 If at any time, during the continuance of the contract, the performance in whole or in part, in any obligation under this contract, shall be prevented or delayed by reasons of any war, hostility, acts of public enemy, acts of civil commotion, strikes, lockouts, sabotages, fires, floods, explosions, epidemics, quarantine restrictions or other acts of God (herein after referred to as eventualities) then, provided notice of the happening of any such eventuality is given by the tenderer to the TNGECL within 15 days from the date of occurrence thereof, neither party shall, by reasons of such eventuality, be entitled to terminate this contract nor shall have any claim for damages against the other in respect of such non-performance or delay in performance and deliveries under this contract, shall be resumed as soon as practicable after such eventuality has come to an end or ceased to exist.
- 11.2 Provided that if the performance in whole or part by the successful tenderer on any obligation under this contract is prevented or delayed by reasons of any eventuality for a period exceeding 60 days, the TNGECL may at its option terminate the contract by a notice in writing.
- 11.3 Power cut shall not be considered under the Force Majeure condition. The period of extension shall be decided only by the authority who placed the order after verifying the evidence for the cause of delay.
- 11.4 The termination of the contract as aforesaid shall not absolve the supplier/supplier of his liability to pay damages to the Corporation for the breach of the contract to deliver the goods or complete the performance of the contract within the time fixed by the purchaser/ suppliers.

12.0 GUARANTEE:

- 12.1 The new Upgradated excitation system with all its associated accessories commissioned at Sathanur Dam Power House/Sathanur Dam shall be guaranteed for satisfactory operation and good workmanship for a period of **TWO years** from the date of commissioning of new Upgradated excitation system in all respect as per schedule. Successful tenderer shall furnish an undertaking for the above.

The guarantee certificate shall be furnished in the format enclosed as Annexure-V.

- 12.2 The tenderer shall give guarantee for the following items.
- a. Quality and strength of the materials used.
 - b. Satisfactory operation of the equipment.
 - c. Safe stresses in all parts under all conditions of operations.
 - d. Protection of equipments against vibration and corrosion.

e. Workmanship.

The tenderer shall correct, at his own expense, the defects, if any, during the guarantee period. Within guarantee period after acceptance of the equipment and completion of erection if any part of the upgraded excitation system etc., is found defective because of workmanship or material or otherwise, the contractor shall at his own expense, furnish and install new part and materials approved by the purchaser.

The tenderer shall assume all responsibility for direct damages causing personnel injury or property damage caused by any manufacturing defects resulting in the failure of the equipment being supplied under these specifications.

- 12.3 Any defects noticed during this period shall be rectified free of cost to the TNGECL within 2 (Two) months from the intimation of defect/failure. Irrespective of number of failures and repairs, the contractors are responsible for free replacement of the defective materials till the guarantee period. If they are not rectified or replaced within this period the contractor shall pay Liquidated Damages as per Liquidated Damages clause in the contract for the delay from the date of receipt of intimation for the defects or failures.
- 12.4 The incidental expenses, insurance and freight charges for the replacement of defective materials within the guarantee period shall also be borne by the contractor.

13.0 REPLACEMENT OF DEFECTIVE/DAMAGED MATERIALS:

- 13.1 Notwithstanding anything contained in the liquidated damages clause when the whole or part of the work carried out by the successful tenderer are found to be defective/damaged or are not in conformity with the specification or template, such defects or damages in the work shall be rectified within two months from the date of intimation of such defect/damage either at the point of destination or at the successful tenderer's works, at the cost of successful tenderer, against proper security and acknowledgement. In the alternative, the defective or damaged materials shall be replaced free of cost within two months from the date of receipt of the intimation from the purchaser of such defects or damages. If the defects or damages are not rectified or replaced within this period, the successful tenderer shall pay a sum towards liquidated damages as per liquidated damages clause 10.0 above, for the delay in rectification/ replacement of the defects or damages. The above liquidated damages are in addition to the liquidated damages for the delay in delivery of materials covered in Clause – 10.0
- 13.2 In the event of supplies being received damaged or short at the destination stores, the cost of such materials with applicable taxes and other charges payable thereof will be paid only proportionate to the value of the materials received in good condition unless the damaged goods or short supplies are made good free of cost to the TNGECL by the supplier.

- 13.3 If even after such rectification or replacement of the damaged or defective part, the works executed are not giving the satisfactory performance as per the contract, then it will be open to the purchaser either to reject the goods and recover the entire cost of such goods and claim such loss sustained by the TNGECL.
- 13.4 Notwithstanding any other remedies available, the purchaser shall be entitled to dispose of the defective/damaged materials in as is where is condition without further notice, if the contractor/supplier fails to rectify the defects/damaged materials within such period as may be notified by the purchaser through notice and the sale proceeds of such disposal shall be appropriated towards the dues to the Corporation such as Liquidated Damages, ground rent etc. as may be determined by the purchaser.

14.0 FAILURE TO EXECUTE THE CONTRACT:

Successful tenderer failing to execute the works contract order placed on him to the satisfaction of the TNGECL under terms and conditions set forth therein, will be liable to make good the loss sustained by the TNGECL, consequent to the placing of fresh orders elsewhere at higher rate, i.e. the difference between the price accepted in the contract already entered into and the price at which fresh works contract order have been placed. This is without prejudice to the imposition of Liquidated Damages and forfeiture of Security Deposit cum Performance Guarantee.

15.0 NON-ASSIGNMENT:

The successful tenderer shall not assign or transfer the contract or any part thereof without the prior approval of the purchaser.

16.0 EFFECTING RECOVERIES:

Any loss, arising due to non-fulfillment of this contract or any other contract, will be recovered from the Security Deposit cum Performance Guarantee held and or any other amount due to the successful tenderer from the TNGECL from this Contract as well as from other contracts.

17.0 PATENT RIGHTS ETC:

The successful tenderer shall indemnify the purchaser against all claims, actions, suits and proceedings for the infringement or alleged infringement of any patent, design or copy right protected either in the country of origin or in India by the use of any equipment supplied by the successful tenderer other than for the purpose indicated by or reasonably to be inferred from the specification.

18.0 JURISDICTION FOR LEGAL PROCEEDINGS:

No suit or any proceedings in regard to any matter arising in any respect under this contract shall be instituted in any court, save in the appropriate Civil Court of Chennai or the Court of Small Causes at Chennai. It is agreed that no other court shall have jurisdiction to entertain any suit or proceedings, even though, part of the cause of action might arise within their jurisdiction. In case, any part of cause of action might arise within the jurisdiction of any of the courts in Tamil Nadu but not in courts at Chennai

and rest within the jurisdiction of courts outside Tamil Nadu, then it is agreed to between parties that such suits or proceedings shall be instituted in court within Tamil Nadu and no other court outside Tamil Nadu shall have jurisdiction, even though any part of the cause of action might arise within the jurisdiction of such courts. An UNDERTAKING in this regard should be furnished on receipt of Works Contract Order in a non judicial stamp paper value of Rs.500/- agreeing to be above conditions.

19.0 ARBITRATION:

The TNGECL will not accept any arbitration in case of disputes arising in any respect under this contract. Any dispute arising out of this contract shall not be subject to arbitration under the provisions of Arbitration and Conciliation Act 1996 in the event of any dispute between the parties.

20.0 DEVIATIONS FROM SPECIFICATION:

If the tenderer wish to deviate from any of the clauses of this specification, he shall list out such deviations, in the format enclosed (Schedule B & C) and submit full particulars and reasons thereof. Unless this is done, the equipment offered shall be considered to comply, fully in every respect with the terms and conditions of this specification.

21.0 TESTS AND TEST CERTIFICATES:

All relevant tests shall be carried out on the equipment as per relevant ISS. The supplier shall conduct suitable tests and performance tests on the equipment/materials to verify its desired operation as per ISS. All tests should be conducted in the presence of TNGECL's engineer. The inspection report and test reports are to be furnished to Superintending Engineer/Erode Generation Circle/Uratchikottai for approval and got approved by Superintending Engineer/Erode Generation Circle/Uratchikottai. The test certificates in triplicate for the materials furnishing the results of the tests as per latest issue of IS or any other relevant International Standard as applicable shall be forwarded and got approved before the materials are dispatched.

The materials will be rejected if the test results are not satisfactory.

In addition to the tests called for in the specification, the purchaser reserves the right of having such tests as he desires carried out at his own expenses to satisfy himself that the materials conform to the requirement of this specification. The materials may be rejected if the test results are not satisfactory.

22.0 RESPONSIBILITY:

The tenderer is responsible for satisfactory operation of the new upgradated excitation system. The tenderer should provide packing and secured protection of the materials to be supplied by them so as to avoid damages or loss in transit.

23.0 MAXIMUM WEIGHTS AND DIMENSIONS OF PACKINGS:

The successful tenderer is responsible to make sure about the facilities that exist for road and rail transport to site, the maximum packages which can be

conveyed by the railways and crane lift available at the destination railway station. The successful tenderer is also responsible for any loss or damage during transport and storage for 90 days. Each case or package should be clearly marked and should contain detailed packing list.

24.0 INSPECTION:

- 24.1 During the work carried out at site, the works shall be inspected by TNGECL's Engineers at any time during the works. In case the works are not carried out to the satisfaction of TNGECL's inspecting Engineers, further work should be proceeded only after attending the defects if any pointed out by the TNGECL's Engineers during inspection, free of cost.
- 24.2 The authorized representatives of the purchaser shall have free access to the successful tenderer's or sub-vendor's works at any time during working hours, for the purpose of inspecting the manufacture of the materials and for testing the equipment/materials covered by this specification. The successful tenderer or the sub-vendor shall provide all facilities for the above.
- 24.3 Tenderers are requested to furnish in their tenders the exact location of their factory with detailed address to enable inspection by TNGECL if considered necessary.
- 24.4 Not less than 15 days advance intimation shall be given for inspection by the TNGECL's officers. The arrangement for inspection shall be made by successful tenderer in such a way that the delivery schedule is kept up. The materials shall not be despatched without acceptance of test certificate and instruction from TNGECL.
- 24.5 In case the works are not carried out to the satisfaction of TNGECL's inspecting Engineers, further work should be proceeded only after attending the defects if any pointed out by the TNGECL's Engineers during inspection, free of cost.
- 24.6 TNGECL reserves the rights to waive the inspection if found necessary.

25.0 COMPLETENESS OF TENDER:

The tender should include all accessories even though not specifically mentioned in this specification but which are essential for the completeness of the materials/works ordered. The tenderer shall not be eligible for any extra charges in respect of such minor accessories though not included in the tender.

26.0 INTERCHANGEABILITY:

All similar parts and removable parts of similar items shall be interchangeable with each other.

27.0 CLIMATIC CONDITIONS:

The materials are for use in Tamil Nadu and should be satisfactory for operation under tropical conditions in Erode Generation area as detailed below.

The ambient temperature will be within the range of ± 2 Degree Centigrade to + 40 Degree Centigrade.

28.0 ELECTRICITY RULES :

All works shall be carried out in accordance with the latest provisions of the Indian Electricity Act/Electricity Supply Act and the Indian Electricity Rules there-under unless modified by this specification.

29.0 MATERIALS AND WORKMANSHIP:

- 29.1 All materials, equipments and spare parts thereof shall be new, unused and originally coming from manufacturer's plant to the destination stores. Those including used, rebuilt or overhauled materials/equipments will not be accepted.
- 29.2 All the materials used for the works shall be of the best class and capable of satisfactory operation in the tropics with humid atmospheric conditions without distortion or deterioration. Unless otherwise specified the equipment shall conform to the requirements of the appropriate Indian or I.E.C. or other international Standards. Where a specification covering the equipments in question has not been published, the tenderer should specify to what extent they would be in a position to accept the various provisions in the specification.
- 29.3 The workmanship shall be of the highest grade and the entire construction in accordance with the best modern practice. The whole of the work shall be of the highest class throughout well finished and of approved make. The entire design and construction shall be capable of withstanding the severest stresses likely to occur in actual service and of resisting rough handling during transport.
- 29.4 The Upgradation of excitation system in machine at Sathanur Dam Power House/Sathanur works shall be to the entire satisfaction of the field engineers.

30.0 RECOVERIES OF DUES:

The TNGECL is empowered:

- a) To recover any dues against this contract in any bills/Security Deposit cum performance guarantee/Earnest Money Deposit due to the successful tenderer either in this contract or any other contracts with TNGECL, TNPGL, TNPDL, TANTRANSCO and TNEB.
 - b) To recover any dues against any other contract of the successful tenderer with TNGECL, TNPGL, TNPDL, TANTRANSCO and TNEB, with the available amount due to the successful tenderers against this contract.
- (a) The SD forfeited will also attract GST and will be additionally collected from the tenderers.

31.0 PAST PERFORMANCE:

- 31.1 The intending tenderers shall furnish the documentary evidence with details of various orders placed on them during the last ten years as on the date of tendering in the proforma enclosed to the Tender Specification and also proof for having executed the works and for their satisfactory performance from State Electricity Board.

- 31.2 The Bidders shall furnish copies of Balance Sheet, Profit and Loss Account for the last three financial years 2022-23, 2023-24, 2024-25 certified by the Auditor.

In case Accounts for the last financial year are not finalized, the Bidders shall furnish Annual Turnover Statement for the year duly certified by Auditor.

- 31.3 The Bidders shall furnish documentary evidence for the constitution of the firm such as Memorandum and Articles of Association, Attested copy of Registered Partnership Deed with details of Name, Address, and Telephone of the manufacturing plants.
- 31.4 The details furnished by the Contractors shall be in complete shape and if it is found that any information is found omitted, suppressed, incomplete or incorrect, the same will be taken note of while dealing with the Contractors in future and will entail forfeiture of EMD.

32.0 RAW MATERIALS:

It is the responsibility of the contractor to make his own arrangement to procure the necessary raw materials required for the Upgradation of excitation system in machine at Sathanur Dam Power House/Sathanur works.

33.0 SPECIAL CONDITIONS:

- 33.1 **POWER FACILITY:** 415V, 3 phase AC supply if required for works at site will be provided by TNGECL at appropriate applicable tariff for temporary supply at the rate prevailing during the currency of contract. Necessary cables switchboard etc. shall be arranged by the contractor. In case of any power failure, the contractor shall make their own arrangement to execute the work using DG sets.
- 33.2 **TOOLS&PLANTS AND INSTRUMENTS:** All instruments and tools & plants and consumables required for the work shall be arranged by the contractor.
- 33.3 Subject to availability, unfurnished accommodation will be provided at applicable rental charges. The energy consumed in such accommodation shall be billed at appropriate domestic tariff rate. Food shall be the responsibility of the successful tenderer.
- 33.4 **MAN POWER REQUIREMENT:** Required number of skilled and unskilled man power to be arranged by the contractor.

34.0 SAFETY OF PERSONNEL:

The Tenderer is solely responsible for arranging the following for his workmen.

- a) Safety during the erection, testing and commissioning work at spot. The Tenderer's workers should wear necessary safety appliances during the work.
- b) Insurance of workman and other personnel working under him. The Tenderer should cover his employees under accident Insurance Plans of General Insurance Company of India to cater for the workmen's Compensation Act, 1023, with all later amendments.

- c) Compensation to workmen as per workman compensation act in case of accidents or injuries.

35.0 LIABILITY FOR ACCIDENTS TO PERSON:

- 35.1 The Tenderer shall indemnify and save harm to the TNGECL against all actions, suits, claims, demands, costs or exposes arising in connection with injuries suffered prior to the date when the works or plant shall have been taken over by the date when the works or plant shall have been taken over by the persons employed by the Tenderer or his sub-Tenderer, the works whether under the Central Law or under the workmen's compensation Act 1923 or any other statutory law in force at the date of the tender dealing with the question of the liability of employees for injuries suffered by employees and to have taken steps properly to insure against any claims there under.
- 35.2 On the occurrences of an accident which results in the death of the workmen employed by the Tenderer or which is due to the tender work and or so serious as to be likely to result in the death of any such workmen, the Tenderer shall within 24 hours of happening of such accident intimate in writing to the concerned Engineer and such officers required by the provision of the workmen's Compensation Act, the fact of such accident. The tenderer shall indemnify TNGECL against all loss or damage sustained by TNGECL resulting directly or indirectly from his failure to give intimation in the manner aforesaid, including the penalties or fines, if any payable by TNGECL as a consequence of TNGECL's failure to give notice under the Workmen's Compensation Act or otherwise to confirm to the provisions of the said Act in regard to such accident.
- 35.3 In the event of any claim being made, or action brought against the TNGECL involving the Tenderer and arising out of the matters referred to and in respect of which the Tenderer is liable under the clause, the Tenderer shall be immediately notified thereof and he shall with the assistance, if he so requires, of the TNGECL but at the sole expense of the Tenderer, conduct all negotiations for the settlement of the same or of any litigation that may arise there from. In such cases, the TNGECL shall at the expenses of the Tenderer, afford all available assistance for any such purpose.
- 35.4 In the event of an accident is respect of which compensation may become payable under workmen's Compensation Act VIII of 1923 and any subsequent amendment thereof whether by the tenderer or by the Government as principle, it shall be lawful for the Engineer to retain out money due and payable to the tenderer such sum or sums of money as may in the opinion of the said engineer be insufficient to meet such liability. The opinion of the engineer shall be final in this regard to all matters arising under this clause and will not be subjected to any arbitration.
- 35.5 Liability for damages or loss to third party including inspecting officers due to acts of the tenderer or his plant, or such tenderer connected with the execution of this tender shall be fully borne by the tenderer. The tenderer shall maintain such detailed records to furnish information regarding entitlement and discharge of all workmen employed under this tender as to be adequate for the timely and full settlement of claims under the Workmen

Compensation Act. All cases of accident or injuries shall be reported to the engineer with all the details required for the settlement under the Workmen Compensation Act.

- 35.6 The tenderer should report about all accidents within 24 hours to the Assistant Executive Engineer of the respective Power House of TNGECL in the preliminary accidents form. He should furnish other particulars such as Medical Certificates, Wages particulars, fitness certificate, proof for having paid the compensation fixed by the TNGECL, etc. in due course without delay.

36.0 LIABILITY FOR DAMAGE TO WORK OR PLANTS:

- 36.1 The tenderer shall during the progress of the work properly cover up and protect the work and plant from injury by exposure to the weather and shall take every reasonable proper, timely and usual precaution against accident or injury to the persons from any cause and shall be and remain answerable and liable for all accidents or injuries there to which until the same, be or deemed to be, taken over may arise or be occasioned by the Acts or omissions of the tenderer or his workmen or his sub-tenderers and all losses and damages to the works or plant arising from such injuries as aforesaid shall be made good in the most complete and substantial manner by and at the sole cost of the tenderer and to the reasonable satisfaction of the TNGECL Engineer, should such loss or damage happen to units of works, plant or materials falling outside the scope of this tender and the tenderer due to these shall be placed or compensated for by the tenderer to the satisfaction of the engineer.
- 36.2 In the case of losses or damage to any portion of the work occasioned by other causes, the same shall, if required by the TNGECL be made good by the tenderer in like manner but at the cost of the TNGECL, at a price to be agreed between the tenderer and the TNGECL or in default of agreement settled by Arbitration and the TNGECL shall pay to the tenderer the tender value of the portion of the work so lost or damages or any balance of such tender value remaining unpaid as the case may be.
- 36.3 Until the work shall be or deemed to be taken over as aforesaid the tenderer shall also be liable for and shall indemnify the TNGECL in respect of all damage or injury to any person or to any property of the TNGECL or of others occasioned by the act of tenderer, his workmen or his sub-tenderers or by the defective design, or materials and not due to cause beyond his control. If due to tenderer's carelessness, negligence or non-observance of safety precautions, damage to generating machineries of TNGECL should occur, the full cost will be recovered from the tenderer.

37.0 PROTECTION OF EQUIPMENT AND SAFETY:

The tenderer shall take all reasonable care to protect the materials handed over to him. Wherever necessary, suitable temporary fencing and listing shall have to be provided by the tenderer as a safety measure against accident and damage of property of TNGECL. Suitable caution notices shall be displayed where access to any part may be deemed to be unsafe and hazardous.

38.0 SECURITY ARRANGEMENTS:

The tenderer shall provide sufficient number of Security Personnel/ Watchmen to ensure that the equipments, tools and consumables under his charge are not lost due to theft.

In adequate provision in this regard will result in TNGECL's Engineer making similar arrangements at tenderer's cost.

39.0 TENDERER'S REPRESENTATIVE AND WORKMEN:

39.1 The tenderer shall employ at least one competent representative whose name or names shall be communicated in writing to the TNGECL's Engineer and is to be given full responsibility as representative of the tenderer to enter into negotiations at site in regard to execution of tender. The said representative or if more than one shall be always present at site during working hours and any written orders or instruction which the TNGECL's Engineer may give to the said representative of the tenderer shall be deemed to have been given to the tenderer. The name, address, qualification of Engineer and other technical staff shall be given.

39.2 The tenderer shall provide skilled, semi-skilled and unskilled workers for the execution of work. The TNGECL's Engineer shall be at liberty to object to any representative or person employed by the tenderer in the execution or otherwise about the works who in the Engineer's opinion shall misconduct himself or by incompetent objected to forthwith, upon receipt of notice from the Engineer requiring him to do so.

40.0 DEATH, BANKRUPTCY ETC.:

In case of death or committing any act of Bankruptcy or being a corporation commence to be wound up except for reconstruction purposes or carry on its Business under a receiver, the executors, successors or other representative in law of the estate of the tenderer or any such receiver, liquidator or any person in whom the tender may become vested, shall forthwith given notice thereof in writing to the TNGECL and shall given for one month, during which, he shall take all reasonable steps to prevent stoppage of the works, have the option of carrying out this tender subject to his/or their providing such guarantees as may be required by the TNGECL but not exceeding the value of the work for the time being remaining unexecuted. In the event of stoppage of the works the period of option under the clause be fourteen days only. Provided that, should the above option be not exercised, the tender may be terminated by the TNGECL by notice in writing to the tenderer. And the same power and provisions reserved to the TNGECL on the taking of the work out of the tenderer's hands shall immediately become operative.

41.0 REPAIRS/REPLACEMENT:

Any loss or damage during erection and testing of the equipments shall be replaced/repared free of cost by the contractor.

42.0 SUBLETTING:

No part of the contract shall be sublet without prior written permission of the Chief Engineer nor shall transfer to make by power of attorney authorizing others, to receive payment on contractor's behalf.

In case of the contractor engaging contract laborers with the prior approval mentioned above in writing, the following should be strictly adhered to.

- a) The contractor should fulfill strictly all the conditions as stipulated in the contract laborer (Regulation and abolition) Act, 1970 and the rules made there under.
- b) The contractor should take out a license at his cost, under section 12 of the above said act within the specified period as mentioned by the management/Principal employees at the time of awarding the contract.
- c) The contract laborer engaged by the contractor have no right to claim employment or any other benefit from TNGECL.

43.0 GENERAL:

Notwithstanding anything contained in any of the above terms and conditions, the TNGECL shall have the right to relax waive any of the conditions of the contract wherever deemed necessary in the interest of the TNGECL.

44.0 SIGNATURE OF TENDERERS:

The tender must contain the name, residence and place of business of the person or persons making the tender and must be signed and sealed by tenderer with his usual signature.

A tender by a partnership concern must furnish the full names of all partners. It should be signed by one of members of the partnership or by an authorized representative followed by the name and designation of the person or persons signing.

Tenders by corporations/companies must be signed with the legal names of the corporations/companies by the President, Secretary or any other person or persons authorized to bind the corporation/company in the matter.

45.0 SPECIFICATION AND CLARIFICATIONS:

The tenderer shall study carefully the specification and conditions that are contained in this specification before tendering.

If the tenderer has any doubt as to the meaning of any portion of this specification, he could refer to the Superintending Engineer/Hydro (Electrical)/5th Floor, Eastern Wing, N.P.K.R.R.MAALIGAI/TNGECL, 144, Anna Salai, Chennai-2 (Ph: 044 - 28521416), in writing and obtain the clarification well in advance.

46.0 DEPARTURE FROM THIS SPECIFICATION CLAUSE:

If the tenderer wishes to depart from the specification clauses in any respect he shall draw the attention to support points of departure explaining fully

the reasons thereof. Unless, this is done the requirement of this specification clause will be deemed to have been accepted in every respect.

47.0 TENDERER'S UNDERSTANDING OF TENDER/DOCUMENT:

The tenderer shall carefully examine the tender documents and fully inform himself as to all the condition and matters which may be in any way affect the work or the cost thereof. Should a tenderer find discrepancies in, or omissions from the specification or documents, or should be in doubt as to their meaning, he should at once notify the Superintending Engineer/Hydro (Electrical)/5thFloor, Eastern Wing, N.P.K.R.R.MAALIGAI/TNGECL, 144, Anna Salai, Chennai-2 (Ph: 044 - 28521416) and obtain clarification in writing prior to submitting the tender.

SECTION-VI

GENERAL CONDITIONS (STATUTORY COMPLIANCES)

1) The Contractor shall employ labour in sufficient numbers to maintain the required rate of progress and of quality to ensure workmanship of the degree specified in the Contract and to the satisfaction of the Engineer-in-Charge. The Contractor shall not employ in connection with the Works any person who has not completed his eighteen years of age.

2) The Contractor shall pay to labour employed by him either directly or through digital transfer. The wages should not be less than fair wages as defined in the current PWD Schedule rates (or) Minimum Wages Act (if applicable).

3) The Contractor shall in respect of labour employed by him comply with or cause to be complied with the Contract Labour Regulations in regard to all matters provided therein.

4) The Contractor shall comply with the provisions of the payment of Wages Act, 1936, Minimum Wages Act, 1948, Employers' Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefit Act, 1961, Employees Provident Fund & Miscellaneous Provisions Act, 1952, Employees State Insurance Act, 1948, Payment of Bonus Act, 1965 and Mines Act, 1952, Contract Labour Regulation & Abolition Act, 1970 or any modifications thereof or any other law relating thereto and rules made there under from time to time.

5) The Engineer-in-Charge shall on a report having been made by an Inspecting Officer as defined in the Contractors Labour Regulations have the power to deduct from the moneys due to the Contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfillment of the Conditions of the Contract for the benefit of workers, non- payment of wages or of deductions made from his or their wages which are not justified by the terms of the Contract or non-observance of the said Contractors Labour Regulations.

6) The Contractor shall indemnify the Corporation against any payments to be made under and for observance of the Regulations afore said without prejudice to his right to claim indemnity from his sub- contractors. (if permitted)

7) In the event of the Contractor committing a default or breach of any of the provisions of the aforesaid Contractors Labour Regulations as amended from time to time or furnishing any information or submitting or filling any Form/ Register/Slip under the provisions of these Regulations which is materially incorrect then on the Report of the Inspecting Officers as defined in the Contractors Labour Regulations the Contractor shall without prejudice to any other liability pay to the Corporation a sum not exceeding Rs. 50.00 as liquidated damages for every default, breach or furnishing, making, submitting, filling materially incorrect statement as may be fixed by the Engineer-in-Charge and in the event of the Contractor's default continuing in this respect, the liquidated damages may be enhanced to Rs. 50.00 per day for each day of default subject to a maximum of ten percent of the estimated cost of the

Works put to tender. The Engineer-in-Charge shall deduct such amount from bills or security deposit of the Contractor and credit the same to the Welfare Fund constituted under Regulations. The decision of the Engineer-in-Charge in this respect shall be final and binding.

8) The contractors executing the works contract/contract in which labours are engaged should provide an accidental insurance scheme for Rs.2,00,000/- additionally under Pradhan Mantri suraksha Bima Yojana (PMSBY) scheme through the Bank/Post Office for a premium of Rs'20/- per annum per person, to all the labours engaged by them for the works in TNGECL.

1.0 CONTRACT LABOUR REGULATIONS:

(i) Notice of commencement: The Contractor shall, within SEVEN days of commencement of the work, furnish in writing to the Inspecting Officer of the area concerned the following information :

(a) Name and situation of the work.

(b) Contractor's name and address.

(c) Particulars of the Department for which the work is undertaken,

(d) Name and address of sub-contractors as and when they are appointed.

(e) Commencement and probable duration of the work.

(f) Number of workers employed and likely to be employed.

(g) 'fair wages' for different categories of workers.

(h) Number of hours of work which shall constitute a normal working day:-

(i) The number of hours which shall constitute a normal working day for an adult shall be NINE hours. The working day of an adult worker shall be so arranged that inclusive of intervals, if any, for rest it shall not spread over more than twelve hours on any day, when an adult worker is made to work for more than NINE hours on any day or for more than FORTY EIGHT hours in any week he shall, in respect of overtime work, be paid wages at double the ordinary rate of wages.

(ii) Weekly day of rest : Every worker shall be given a weekly day of rest which shall be fixed and notified at least TEN days in advance. A worker shall not be required or allowed to work on the weekly rest day unless he has or will have a substituted rest day, on one of the five days immediately before or after the rest day. Provided that no substitution shall be made which will result in the worker working for more than ten days consecutively without a rest day for a whole day.

(a) Where in accordance with the foregoing provisions a worker works on the rest day and has been given a substituted rest day he shall be paid wages for the work done on the weekly rest day at the overtime rate of wages.

(b) Note: The expression 'ordinary rate of wages' means the

fair wage the worker is entitled to.

(c) Display of notice regarding Wages, Weekly Day of Rest etc. The Contractor shall before he commences his work on contract, display and correctly maintain and continue to display and correctly maintain in a clean and legible condition in conspicuous places on the works, notice in English and in the local Indian Language, spoken by majority of workers, giving the rate of fair wages, the hours of work for which such wages are payable, the weekly rest days workers are entitled to and name and address of the Inspecting Officer. The Contractor shall send a copy each of such notices to the Inspecting Officers.

(iii) Register of Workmen: A register of workmen shall be maintained in the Form appended to these regulations and kept at the work site or as near to it as possible, and the relevant particulars of every workman shall be entered therein within THREE days of his employment.

(iv) Employment Card : The contractor shall issue an employment card in the Form appended to these regulations to each worker on the day of work or entry into his employment. If a worker already has any such card with him issued by the previous employer, the contractor shall merely endorse that Employment Card with relevant entries. On termination of employment the Employment Card shall again be endorsed by the Contractor and returned to the worker.

(v) Register of Wages etc. : A Register of Wages-Cum-Muster Roll in the Form appended to these regulations shall be maintained and kept at the work site or as near to it as possible.

(vi) Fines and deductions: Wages of a worker shall be paid to him without any deductions of any kind except the deduction for damage to or loss of goods expressly entrusted to the employed person for custody, or for loss of money which he is required to account for, where such damage or loss is directly attributable to his neglect or default;

(a) No fine shall be imposed on a worker and no deductions for damage or loss shall be made from his wages until the worker has been given an opportunity of showing cause against such fines or deductions.

(b) The Contractor shall maintain a register of fines and the register of deductions for damage or loss in the Forms appended to these regulations which should be kept at the place of work.

(vii) Register of Accidents : The Contractor shall maintain a register of accidents in such form as may be convenient at the work place but the same shall include the following particulars:--

- (a) Full particulars of the labourers who met with accident.
- (b) Rate of Wages.
- (c) Sex.
- (d) Age.

- (e) EPF UAN number.
- (f) ESI number.
- (g) Aadhaar number.
- (h) Nature of accident and cause of accident
- (i) Time and date of accident.
- (j) Date and time when admitted in hospital.
- (k) Date of discharge from the hospital.
- (l) Period of treatment and result of treatment.
- (m) Percentage of loss of earning capacity and disability as assessed by Medical Officer.
- (n) Claim required to be paid under Workmen's Compensation Act.
- (o) Date of payment of compensation.
- (p) Amount paid with details of the person to whom the same was paid.
- (q) Authority by whom the compensation was assessed.
- (r) Remarks.

[Note: k,l,m,n for the workmen not covered under the ESI provisions]

(viii) Preservation of Registers : The Register of workmen and the Register of Wages-cum-Muster Roll required to be maintained under these Regulations shall be preserved for 3 years after the date on which the last entry is made therein.

(ix) Enforcement: The Inspecting Officer shall either on his own motion or on a complaint received by him carry out investigations, and send a report to the Engineer-in-Charge specifying the amounts representing Workers' dues and amount of penalty to be imposed on the Contractor for breach of these Regulations, that have to be recovered from the Contractor, indicating full details of the recoveries proposed and the reasons there for. It shall be obligatory on the part of the Engineer-in-Charge on receipt of such a report to deduct such amounts from payments due to the Contractor.

(x) Disposal of amounts recovered from the Contractor : The Engineer-in-Charge shall arrange payment to workers concerned within FORTY FIVE days from receipt of a report from the Inspecting Officer except in cases where the Contractor had made an appeal under Regulation 16 of these Regulations. In cases where there is an appeal, payment of workers dues would be arranged by the Engineer-in-Charge, wherever such payments arise, within THIRTY days from the date of receipt of the decision of the competent authority.

(xi) Welfare Fund: All moneys that are recovered by the Engineer-in-Charge by way of workers dues which could not be disbursed to workers within the time limit prescribed above, due to reasons such as whereabouts of workers not being known, death of a worker etc. and also amounts recovered as penalty, shall be credited to a Fund to be kept under the

custody of the Corporation for such benefit and welfare of workmen employed by Contractors.

(xii) Appeal against decision of Inspecting Officer: Any person aggrieved by a decision of the Inspecting Officer may appeal against such decision to the competent authority concerned within THIRTY days time stipulated from the date of the decision, forwarding simultaneously a copy of his appeal to the Engineer-in-Charge. The decision of the competent authority shall be final and binding upon the Contractor and the workmen.

(xiii) Inspection of Books and other Documents: The Contractor shall allow inspection of the Registers and other documents prescribed under these Regulations by Inspecting Officers and the Engineer-in-Charge or his authorized representative at any time and by the worker or his agent on receipt of due notice at a convenient time.

(xiv) Interpretation, etc.: On any question as to the application interpretation or effect of these Regulations, the decision of the Commissioner of Labour (or) Director/ Industrial Safety and Health shall be final and binding.

(xv) Amendments: Government may, from time to time, add to or amend these Regulation and issue such directions as it may consider necessary for the proper implementation of these Regulations or for the purpose of removing any difficulty which may arise in the administration thereof.

2.0 Compliance of EPF & MP Act, 1952:

(a) The Contractor who take up works contract for TNGECL is required to comply with all the relevant provisions stipulated in the EPF & MP Act;

(b) The Contractor should have a separate EPF main codenumber.

(c) The Contractor should be responsible for the payment of necessary EPF contributions both Employer's and Employee's contribution as per the provisions of the EPF Act in respect of the actual workers engaged for the specified works.

(d) The contractor should submit necessary returns to EPF Organisation within the stipulated time as required under the said EPF & MP Act.

(e) The Contractor should produce the proof of payment of contribution – both Employer's and Employee's contributions made to EPF Organisation in order to claim the Bills for the respective works.

(f) The contractor should be fully liable to meet and fulfill all the relevant provisions of the EPF act in the respect of the execution of the Tendered work.

(g) In case the Contractor fails to fulfill any of the statutory provisions of the EPF & MP Act and consequently it happens that TNGECL Ltd has to meet such requirements of the said Act or Statutory provisions in the capacity of Principal Employer, TNGECL shall make good such requirements out of the money due and payable to the said Contractor and further the performance of the said Contractor in this regard will be noted for all future Contracts of TNGECL.

1.1 In respect of the category of employee for whom the wages are fixed at the rate of Rs.500/- and above in the current PWD Schedule rates (or) say the monthly wages of Rs.15,000/- above. The EPF employer contribution will be restricted upto Rs.15,000/- only.

3.0 Compliance of ESI Act 1948 :

(a) The contractor who take up the works contract for TNGECL is required to comply with all the provisions stipulated to ESI Act 1948.

(b) The contractor should have a separate ESI main codenumber.

(c) The contractor should be responsible for the payment of necessary ESI contributions – both Employer's and Employee's contributions as per the provisions of the ESI Act in respect of the actual workers engaged for the specified works.

(d) The contractor should submit necessary returns to the ESI Organization within the stipulated time as required under the said ESI Act.

(e) The contractor should produce the proof of payment of contributions - both Employer's and Employee's contributions made to ESI Organization in order to claim the Bills for the respective work.

(f) The contractor should be fully liable to meet and fulfill all the relevant provisions of the ESI Act in respect of the execution of the Tendered work.

(g) In case the Contractor fails to fulfill any of the statutory provisions of the ESI Act and consequently it happens that TNGECL has to meet such requirements of the said Act or Statutory provisions in the capacity of Principal Employer, TNGECL shall make good such requirements out of money due and payable to the said Contractor and further the performance of the said Contractor in this regard will be noted for all future Contracts of TNGECL.

(h) (i) The contractor who claims exemption under the ESI Act should produce the exemption order obtained from the Government/ESI organization.

(ii) The contractor who claims exemption for those areas that are not covered under the purview of the ESI Act, necessary evidences should be submitted by the contractor to ensure that the revenue village where the work is being carried out has not been covered under the implemented area of ESI.

(iii) The category of employees (Technical Assistant II Grade) and above for whom the wages are fixed at the rate of Rs. 700/- and above in the PWD Schedule rates (or) the monthly wages of Rs.21,000/- above. Such employees will not be covered under the ESI Act. In all such conditions, the Contractor has "to ensure the medical benefits for the Workers engaged by the Contractors for the works and has to take relevant group insurance policies with the applicability for giving compensation to the workers" under the Employee's Compensation Act.

4.0 The Building and Other construction Workers Act:-

(other than the circle/station registered under the Factories Act)

(a) The contractor should obtain the Registration certificate under the Building and Other construction Workers (Regulation of Employment

and Condition of Service) Act, 1996 from the Competent Authority (the Joint Director/Industrial Safety and Health (BOCW)).

- (b) The contractor should comply all the provisions of the Building and Other construction Workers (Regulation of Employment and Condition of Service) Act, 1996.

5.0 The Contract Labour (Regulation & Abolition) Act 1970 & Rules 1975 and Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979 & Rules 1983.

(a) The Contractor who take up works contract for TNGECL should deploy sufficient number of workmen for the work and the contractor should deploy 20 or more workmen on a day of emergency (or) in necessity.

(b) The Contractors should comply with all the provisions of the Contract Labour (Regulation & Abolition) Act, 1970 and Tamilnadu Contract Labour (Regulation & Abolition) Rules 1975 as modified from time to time and shall also indemnify TNGECL from all and against any claims under the aforesaid Act and the Rules. The contractors should also submit the copy of the labour licence before executing the works.

(c) The Contractors who desires to engage the migrant workmen (workmen from other states) for the works contracts of TNGECL is required to comply with all the provisions of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979 and Tamilnadu rules, 1983 as modified from time to time and shall also indemnify TNGECL from all and against any claims under the aforesaid Act and the Rules. The contractors should also submit the copy of the migrant labour licence before executing the works.

(d) The contractors should maintain the following records as per section 78 of Contract Labour (Regulation & Abolition) central rules 1971.

(i) Muster Roll in Form – XVI.

(ii) Register of Wages in Form – XVII.

(iii) Register of overtime in Form – XVIII.

(iv) The contractor shall issue an photo identity card to his employees.

6.0 Wages:-

(a) The contractor should pay the wages before the expiry of seventh day as per section 65 and shall issue wage slip in Form – XXVIII to the workmen as per section 78(b) of The Tamil Nadu Contract Labour Rules, 1973. The copies of the wage slip so issued to the workmen should be maintained by the contractor and produced as when called for.

(b) The contractor should pay the wages before the expiry of seventh day as per section 65 and shall issue wage slip in Form – XXVIII to the workmen as per section 78(b) of The Tamil Nadu Contract Labour Rules, 1973. The copies of the wage slip so issued to the workmen should be maintained by the contractor and produced as when called for.

7.0 EPF Documents to be Produced for Claiming Bills:-

(a) The EPF contribution should be remitted separately (by separate Challan) for each and every work. The acceptance order/ formal order reference number should be entered in the remarks column of the ECR Challan (Electronic Challan Cum Return) and the same should be submitted.

(b) The payment confirmation receipt should be submitted (the payment confirmation date is mandatory).

(c) The combined Challan of Account No. 1,2,10,21 & 22 should be submitted.

(d) All the documents should duly signed with seal by the contractor.

8.0 ESI Documents for While Claiming Bills:-

(a) The Monthly Contribution Challan Form should be submitted (Transaction status field – completed successfully is mandatory).

(b) The contribution history of the respective months should be submitted.

(c) The month wise statement should be submitted showing the details of the employees utilized by the contractors for the specific work and the contribution remitted as per the below format.

S.No	IP.No	IP.Name	No. of days	Wages	IP Contributions
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(d) All the documents should duly signed with seal by the contractor.

9.0 Tamil Nadu Rationlisation of Forms and Reports under Certain Labour Laws Rules, 2020.

The contractor should comply/ maintain the applicable new combined forms introduced vide the following Acts/ Rules.

- (a) The Tamil Nadu Contract Labour (Regulation and Abolition) Rules, 1975.
- (b) The Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) (Tamil Nadu) Rules, 1983.
- (c) The Tamil Nadu Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Rules, 2006.

New Forms:

FORM I	Certificate of Registration of Principal Employer/Employer (under 3 Rules)
FORM II	Application for Licence/ Renewal of Licence (under CLRA and ISMW Rules)
FORM III	Form of Certificate by Principal Employer (under CLRA and ISMW Rules)
FORM IV	Certificate of Initial and Periodical Test and Examination of Various Appliances (under BOCW Rules)
FORM V	Application for Adjustment of Security Deposit (under CLRA and

	ISMW Rules)
FORM VI	Licence and Renewal (under CLRA and ISMW Rules)
FORM VII	Notice of commencement/ completion of work (under CLRA and BOCW Rules)
FORM VIII	Service Certificate (under 3 Rules)
FORM IX	Certificate of Medical Examination (under BOCW Rules)
FORM X	Report on recruitment and employment of migrant workmen and cessation of employment of migrant workmen (under ISMW Rules)
FORM XI	Report of Poisoning or Occupational Notifiable Diseases/ Accidents and Dangerous Occurrences (under BOCW Rules)
FORM XII	Application for Registration of Establishments Employing Contract Labour or Migrant Workmen or Building Workers (under 3 Rules)

10.0 Agreement and Undertaking to be furnished by the contractors in respect of the Statutory Provisions:-

(a) An undertaking as specified in Annexure should also be obtained from the contractors to ensure the remittance of EPF & ESI, Employee and Employer contribution for the respective works while claiming the bills.

(b) The TNEB (TNGECL/TNPDCL/TNPGCL/TANTRANSCO) registered contractor, who wants to execute the works in a circle shall be instructed to execute an agreement [Annexure-VII] with respective Superintending Engineer's of the circle.

11.0 SAFETY CONDITION:-

(i) All the relevant personal protective equipments like safety helmets, safety shoes, safety belt, goggles, nose mask, face mask, dust respirator, asbestos suit, apron, leg guards, rubber gloves, face shield hand sleeves, ear plug, ear muff, fiber helmet, fall net etc., should be supplied by the contractors to their workmen and ensure for proper usage by their workers without fail.

(ii) Proper welding machines with accessories, good and sound construction of hand tools, power tools such as grinding machines, cutting machines, chipping tools, scaffolding materials, etc., should be used. Proper earthing to be provided wherever necessary.

(iii) The contractor shall not allow his workmen to wear loose garments, like lingoes, dhotis, watches, loose jewels and bangles, etc., while at work and smoke cigarettes, beedies etc., inside the power house premises.

(iv) The contractor shall ensure that his workmen to wear tight full or half pant while at work inside the powerhouse premises.

(v) Technically skilled and also safety-oriented supervisor should supervise the work at all time.

(vi) If any accident occurs, it should be informed to the concerned

officer of TNGECL in writing by the concerned contractor immediately.

(vii) For any safety violation and non-compliance of the statutory provisions and rules the contractor is sole responsible and the contractor is liable for any prosecution and imposition of penalty as per the rules in force.

(a) Every opening in floor of a building or in a working platform shall be provided with suitable means to prevent fall of persons or materials by providing suitable fencing or railing with a minimum height of 1 meter.

(b) All practical steps shall be taken to prevent danger to persons employed, from risk of fire or explosion, or flooding. No floor, roof, or other part of a building shall be so overloaded with debris or materials as to render it unsafe.

All necessary personal safety equipment as considered adequate by the Engineer-in-Charge shall be available for use of persons employed on the Site and maintained in a condition suitable for immediate use; and the Contractor shall take adequate steps to ensure proper use of equipment by those concerned.

(i) When workers are employed in sewers and manholes, which are in use the Contractor shall ensure that manhole covers are opened and manholes are ventilated at least for an hour before workers are allowed to get into them. Manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to public.

(a) No paint containing lead or lead products shall be used except in the form of paste or readymade paint.

(b) Suitable face masks shall be supplied for use by workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scrapped.

(ii) Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following :-

(a) These shall be of good mechanical construction, sound material and adequate strength and free from patent defects and shall be kept in good working order and properly maintained.

(b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.

(iii) The Contractor shall at his own expense arrange for the safety provisions as appended to these conditions or as required by the Engineer-in-Charge, in respect of all labour directly employed for performance of the works and shall provide all facilities in connection therewith. In case the Contractor fails to make arrangements and provide necessary facilities as aforesaid, the Engineer-in-Charge shall be entitled to do so and recover the cost thereof from the Contractor.

- (iv) Failure to comply with Safety Code shall make the Contractor liable to pay to the Corporation as liquidated damages an amount not exceeding Rs. 50.00 for each default or materially incorrect statement. The decision of the Engineer-in-Charge in such matters based on reports from the Inspecting Officers as defined in the Contract Labour Regulation as appended to these conditions shall be final and binding and deductions for recovery of such liquidated damages may be made from any amount payable to the Contractor.
 - (a) All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in a safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities shall be provided at or near places of work.
 - (b) These safety provisions shall be brought to the notice of all concerned by display on a notice board at a prominent place at the work spot. Persons responsible for ensuring compliance with the Safety Code shall be named therein by the Contractor.
 - (c) To ensure effective enforcement of the rules and regulations relating to safety precautions, arrangements made by the Contractor shall be open to inspection by the Engineer-in-Charge or his representatives and the Inspecting Officers as defined in the Acts/Rules applicable.
 - (d) The Contractor is not exempted from the operation of any other Act or Rule in force.

SECTION-VII

TECHNICAL

1.0 SCOPE:

This specification covers Upgradation of excitation system including design, Engineering, Manufacturing, supply, erection, testing and commissioning suitable to the existing Hydraulic system and Digital Governor Cum Auto Sequencer Panel(DGASP) at Sathanur Dam Power House/ Sathanur, Erode Generation Circle as per the technical specifications.

2.0 TECHNICAL SPECIFICATIONS:

This specification covers the technical requirements for replacement of existing excitation system of Sathanur Dam Hydro Power House(SDPH) Unit, the design, manufacture, supply, shop assembly, shop testing, inspection, packing, warranty, delivery and training of Power House's Engineers as defined in the detailed technical specification of respective portion of this document.

a. The main scope of work shall be as follows

1. Dismantling of the equipment's of existing excitation systems of SDPH Generator Unit.
2. Supply of new Excitation system with associated accessories
3. Existing Excitation transformer with associated accessories to be reused
4. Existing Power and control cables for complete integration system
5. Installation of all the above supplied equipment's
6. Commissioning of above supplied complete system.
7. Training of plant operators for regular maintenance and operation.
8. All documentation needs to be submitted in English in both electronic format (CD or Memory stick or email) and signed hard copy.

I. Standards and Regulations applicable:

- a. The design, manufacture, testing, etc. of equipment and accessories covered under this specification shall, in general, comply with the latest issue of acceptable standards and codes of practices published by bureau of Indian standards.
1. Central board of irrigation and power
 2. Indian electricity act.
 3. Central electricity authority
 4. Indian electricity rules.
 5. IEEE For Excitation

II. Environmental Conditions

- a. The environmental conditions at the powerhouse site under which the equipment is required to operate satisfactory are as follows:
1. Maximum ambient temperature (°C) : 50°C
 2. Minimum ambient temperature (°C) : 10 °C
 3. Maximum relative humidity (%) : > 80 %

4. Maximum water temperature (°C) : 20
5. Minimum water temperature (°C) : 4
6. Seismic zone : II
7. Average Annual rain fall : 2690 mm
8. Number of months with monsoon conditions :5(August-December)

III. **Existing Synchronous Generator & Excitation Data:**

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

GENERATOR DATA:				
Symbol	Description	Value	Unit	Remark
Make	Generator Make	SKODA		
Type	Designation	HV 732 530/18		Hydro Gen
	Protection class	IP 31		
	Cooling	IC W37 A81		
	Machine Frame	IM 8427		
RPM	Generator Rated Speed	333.33	RPM	
	Runaway speed	1010	RPM	
S_n	Rated apparent power	8333	KVA	
	Maximum continuous power at $\cos \Phi = 0.9$	9166	KVA	
	Rated Active Power	7.5	MW	
U_n	Rated stator voltage	11.0	kV	
	Voltage Range	90 ÷ 110	%	
F_n	Rated frequency	50	Hz	
	Frequency Range	48.5 ÷ 51.5	Hz	
p.f.	Rated power factor	0.9 lag	-	
	Rated stator current	437	Amps	
	Stator peak current	481	Amps	
I_{fn}	Rated man field current	275	A DC	
I_{fo}	No-load field current	158	A DC	
U_{fn}	Rated field voltage	155	V DC	
U_{test}	Rotor test voltage	2.5	KV AC	
R_{fN}	Field resistance	0.5636	Ohm	Calculated value
	Generator outlet connection	wye		
	Number of connected outlets	3 f + 3 n		
	Moment of inertia	50	tm ²	
X_d	Direct axis synchronous reactance	1.0	p.u.	
X_d'	Direct axis transient reactance (unsat.)	0.275	p.u.	
X_d''	Direct axis sub-transient reactance (unsat.)	0.195	p.u.	
X_q	Quadrature axis synchronous reactance (unsat.)	58	%	

$T_{d'}$	Direct axis short circuit transient time constant	0.86	s	
$T_{d''}$	Direct axis short circuit sub-transient time constant	0.03	s	
$T_{do'}$	Direct axis open circuit transient time constant	3.3	s	
T_a	Armature time constant	0.08	s	

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

PT Details

PT Ratio : 11KV/110V
 Phases : 3 Phases
 Vector Connection : Y/Y
 Burden : 5 VA/Each Phase
 Accuracy : 0.2 Class
 Quantity : 1Set available

CT Details

CT Ratio : 500 A/1-1-1 A
 Quantity : One CT for each phase
 Vector Connection : Y (With star point grounded)
 Burden : 5 VA/Each Phase
 Accuracy : 0.2 Class
 Quantity : 1 Set available

Switchyard Equipment Details:

In addition to the above, Synchronization is done at 33 KV grid voltage and the list of switchyard equipment details is mentioned below.

Power transformer Rating: 8/10 MVA with 33 KV / 11 KV voltage ratio.

Switchyard CT Details: 200/1 A.

Switchyard PT Details: 33 KV/110 V.

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 supply required for electronic boards/relays

- AC 415Volts 3 phase 50Hz wit neutral with tolerance of $\pm 10\%$
- DC 110V Grounded/Ungrounded with tolerance of $\pm 10\%$

IV. Complete Excitation Equipment

Complete Excitation system should contain following main equipment's but not limited to these for satisfactory operation and for any items which are not mentioned here under, vendor should consider as per standard.

Main excitation system should have Two Digital Regulator Channels, one acts as main and another one is standby, Two thyristors bridges for controlling the field power in which one acts as main and another one is

standby along with above said regulator channels, Field Breaker for disconnecting machine from excitation source, Field discharge resistor to discharge stored energy in the field, Excitation transformer connected generator terminals to step-down the machine voltage to meet excitation voltage and isolation and anti-parallel thyristors crowbar arrangement to provide overvoltage and/or discharge and other indication/alarm and protection accessories.

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

V. Regulator (DVR/AVR)

Digital Excitation System (Normally called as Digital Voltage Regulator (DVR) or Digital Automatic Voltage Regulator (AVR)).

- a. Excitation system should contain mainly two identical channels/controller including all its accessories to constitute 100% redundant control system.
- b. 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:
- c. 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 generator.
- d. 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.
- e. 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 conditions 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.
- f. Each excitation controller/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
- g. 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 make smooth bump less whenever operator initiate the changeover during entire range of Generator Operation or whenever any problem in the active controller.

- h. There should be follow-up between both the Controller/DVR channels for smooth bump less transfer between them from active to stand by and vice versa and follow-up should make smooth bump less whenever operator initiate the changeover during entire range of generator Operation or during any problem in the active controller.
- i. There should not be any hardware scaling/settings in any of the electronic boards like resistor, capacitor, jumpers & dip Switches for easy maintenance and trouble shooting and to avoid confusion during replacement of spares wherever required test the spares or to replacement during failure.
- 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 mounted HMI in case anyone supplies 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 DVRs.
- 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 1Amps 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 trip automatically or whenever operator initiates.
- i. Each Controller/DVR Disturbance recorder should have following minimum signal for analyzation/trouble shooting purpose but not limited.

1. Active Power	6) Reactive Power	11) Field Current
2. Field Voltage	7) Control Voltage	12) Control Voltage
3. Breaker Status	8) Machine frequency	13) DVR Control Mode

- | | | |
|-------------------------|----------------------|-----------------------|
| 4. Bridge Input Voltage | 9) Generator Voltage | 14) Generator Current |
| 5. PSS Out Signal | 10) Load Angle | 15) Machine frequency |

- ii. It should be possible to set and view post and pre trip trends duration of above signals which should help trouble shooting.
- iii. Each controller/DVR's should have at least 5 above mentioned previous trip disturbance recorders stored in the system for view and upload 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)
- 3. Under Excitation Limiter
 - PQ/Load angle limiter to match with capability curve of generator to avoid pullout of generator.

Reactive Stator Current limiter (Led)

Minimum Excitation current limiter (For salient pole synchronous machine)

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

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.

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

In the event if all above-mentioned limiters fail 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 doesn't require trip function.

The above-mentioned protection (Trip) should be wide range of settings to meet the plant requirement, and settings should be in terms of per unit value of their base value.

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

Each DVR channel Should have followed limiter function in **FCR Mode**(Field Current Regulator) of operation

Maximum field current limiter

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.

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

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

Each Controller/DVR channel should have independent PSS function for damping active power oscillations

PSS should be off IEEE type 2A/2B type.

Vendor should commission the PSS to the satisfaction of user and vendor should demonstrate PSS behavior during commissioning by step test method and difference between PSS OFF and PSS OFF should be demonstrated through signal trends.

It should be possible to switch ON or OFF PSS from panel as and when required for operator.

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 be able to take over the operation if operate initiates.

All the components of the 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.

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

Each controller/DVR should be designed considering following operation conditions

Isolated operating mode (Feeding independent load)

Parallel operating with Grid

Parallel operation along with other generator (Plant bus operation)

Technical Data

Voltage regulation should be $\leq 0.25\%$

Generator voltage adjustment range setting should be 90 to 110% of nominal value.

Reactive power compensation range of adjustment $< \pm 20\%$

All limiters setting range of adjustment 0 to 110% of nominal

Response time should be $< 20\text{ms}$

Cross current compensation for parallel operation

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

Excitation system shall be suitable for various local and remote operation as mentioned below

All the operations modes like Auto/Manual/PF/VAr/Channel-1/Channel-2 should be selectable from panel mounted HMI locally. There should be indication on panel for above mode status.

All the operations modes like Auto/Manual/PF/VAr/Channel-1/Channel-2 should be selectable from remote unit control room. There should be indication locally at remote unit control room for all the above status along with Field voltage/field current.

In addition, above excitation system should have port to integrate with plant DCS for above operation and monitoring through Modbus or Profibus communication.

AVR shall be suitable to hook up with auto synchronization relay for synchronization.

4. Field breaker, Field discharge, Field over voltage & Field earth fault protection.

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.

field breaker for field isolation.

Field breaker should be of minimum 400Amps, 610 Volts continuous DC Rating

Field breaker should isolate both poles of the field.

Field breaker should have minimum breaking current of 50KA

Field breaker should have both closing and tripping coils

Field breaker should be of mechanical latch type.

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. The magnetic field energy in such a case shall be dissipated through a linear field discharge resistor, which shall get connected across the field during such operation. A suitable rating linear resistor should be provided for quick discharge and however a minimum 90KW rating should be provided.

Field over voltage protection.

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

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

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

De-excitation shall be provided using DC field breaker combined with either anti-parallel Thyristor crowbar silicon-controlled rectifier shunting circuit or 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).

Field energy should be discharge through [linear](#) discharge resistor which should get connected on receipt of OFF or Trip signal.

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

Insulation monitoring to detect & avoid main field earth fault.

Excitation System should be included with field insulation monitor relay for detection, monitoring and protection against insulation weakening. This relay should have two levels of detection. Alarm for level-1 and Alarm or Trip for level-2. Relay should have facility such that 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 in terms of Ohm's. This relay should able to display insulation on its display in Ohm's and also in excitation system controller in local system HMI in Ohm's.

This protection may be separate relay or integral part of the excitation system but level-1 and level-2 events of insulation/earth fault should be synchronized with main excitation system events along with time-stamp for easy maintenance, troubleshooting and fault analysis purpose.

5. Thyristor Converter Bridges.

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

PIV voltage of thyristors should not be less the [2.75](#) times the actual voltage PIV appeared at thyristors and the rectifier shall have a minimum PIV-Rating of not less than 1800V.

Each Thyristor bridge should be designed such that it should able to provide [ceiling voltage 1.6](#) times the nominal field voltage.

Each Thyristor bridge should be designed such that it should be able to provide [ceiling current 1.6](#) times the nominal current [for 10 Seconds](#) minimum.

The thyristor bridge shall be designed to withstand 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.

Thyristor Bridge should have capability of 1PU Positive and 0.9PU Negative field forcing as per excitation ceiling data.

There should be [two thyristors'](#) bridges of which one will be active with 100% rating to meet all the required operation including ceiling condition of machine and another one will be standby with 100% reserve capacity in the system.

System should be designed to satisfy [twin](#) Condition,

Always one Thyristor bridge should be in operation to satisfy all the full load condition such that meeting [continuous and ceiling current](#) and voltage of the system and other one will be standby.

Failure/stop of active Thyristor Bridge should initiate bump-less transfer to standby bridge with its DVR to take over the operation with alarm to operator without trip.

Failure/stop of both Active and standby Thyristor Bridge should initiate trip the system.

During entire machine operating range operator should be able to initiate active thyristor bridge to stand by thyristor bridge with its controller or vice versa and this should be bump-less transfer.

Both 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.

Local panel mounted HMI digital display unit at for both the channels/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

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

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.

Both thyristor bridges should have manually operated isolators on AC and DC side of Thyristor Bridge for bridge [on-line maintenance](#) purpose.

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

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

Rating of the isolators should be coordinated with respect to the field current and isolator should be of minimum [400 amps](#) rating.

Isolators should be group operated and there should be two groups one for AC and another one for DC of respective bridge.

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

All thyristor bridges should be off modular design should have possibility of remove/replacement of complete thyristor bridge if required.

Thyristor Cooling

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

Thyristor cooling fan motor should be supplied from two sources one from plant auxiliary supply and one from thyristor bridge input supply through appropriate transformer, Out of two supply one will be active at time and in case 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.

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.

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 circulated within excitation cubical to avoid hotspot temperature. Each Thyristor bridge should have individual snubber (RC Circuit) circuit for protection of thyristor against di/dt and dv/dt ,

6. Excitation Transformer:

Excitation power for field is obtained through a three-phase dry type converter duty excitation transformer connected to generator terminals. The transformer shall be designed and manufactured in accordance with latest standard of transformers. As the existing excitation transformer is in healthy condition hence vendor should reuse the existing excitation transformer. Rating of existing excitation transformer is indicated below.

Existing Excitation transformer Details:

Type	:Dry Type Cast Resin
Rated apparent power	:275 KVA
No of phases	: 3 Phase
Rated primary voltage	:11 KV
No-load secondary voltage	:315 V
Rated frequency	:50 Hz
Impedance	:3.9%
Insulation	: Class F
BIL(Impulse)	:95KV
Cooling	: AN
Enclosure Protection	: IP31
Vector Group	:Dyn 5

Excitation Transformer Monitoring & Protection: Excitation system should monitor [existing](#) excitation transformer healthiness through excitation system and minimum following monitoring and protection should be provided.

Excitation Transformer over temperature monitoring and protection: Excitation Transformer over Temperature monitoring and protection should be provided from the transformer PT100 Temperature sensors installed on LV winding. 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 in terms of °C. Excitation system should able to display transformer temperature in local system HMI.

System should exist three PT100 sensor / PTC interface ports to be fed from transformer each phase LV winding for monitoring all the phase temperature.

This protection may be integral part of the system or separate relay 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.

Excitation Transformer Over Current Monitoring and Protection: Excitation Transformer over current monitoring and protection should be

provided for the **existing** transformer from three primary mounted HV CT's. Alarm for level-1 and Alarm or Trip for level-2(Instantaneous) should be provided. Alarm and trip for the respective level should be 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.

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 timestamp for easy maintenance, troubleshooting and fault analysis purpose.

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. Full rated capacity taps on the high voltage winding shall be provided to accommodate the complete range of operation. The LV terminal shall be suitable for cable connections. Single core aluminum cables shall be connected on LT side of the transformer.

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

Manufacturer should provide shield between primary and secondary winding as standard practice.

Suitable lay out plans of the excitation transformers shall be designed as per the available spaces both inside the existing indoor switch gear rooms & the outside transformer yards, taking care of the existing hindrances & technological demands. The lay out drawings developed after studying the existing conditions, shall be approved by the representatives of both the consultant & the customer

7. Panel Mounted HMI Details

The following information shall be provided on the HMI/ Display screen: Display screen shall be of minimum 15" 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 analogue 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 recording 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

5) Parameters

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

8. Technical Specification of existing ANDRITZ make Digital Governor Cum Auto Sequencing Panel (DGASP) Master Module (CP-8050)

The master module is the central processing unit. Its functionality is provided by means of a loadable and parameter-settable firmware. The master module integrates the function packages for the telecontrol function (spontaneous processing and communication) and the open-/closed-loop control function (periodical processing and peripheral functions) into one common device.

Additionally, it serves as centrally coordinating element for all system services.

Features:

1. Data node functionality.
2. Organization of the data flow from and to the communication interfaces.
 - Ethernet (TCP/IP) for LAN/WAN connections according to IEC 60870-5-104 and IEC 61850.
 - RS-232 for end-end or multi-point traffic according to IEC 60870 – 5-101 with supply for an external
 - Transmission facility
 - RS-485 for multi-point traffic according to IEC 60870-5-101 and interfacing of protective devices.
 - According to IEC 60870-5-103, at Sathanur Dam Power House, IEC-60840-5-104 has been used for Communication with touch Screen Panel.
3. Main focus in telecontrol
 - Parameter- settable communication protocols.

- Time management and time synchronization via NTP. NTP Server mode also possible.
 - Cyclical, can be set in a seconds grid, self-adapting.
 - Monitoring and simulation of process signals.
4. Automation
 - Freely programmable open-/closed loop control function.
 5. Autonomous behavior (for instance in the case of communication failure)
 6. Loadable firmware.
 7. Optional storage of application data and firmware on SD card.
 8. Watchdog- and error-relays.
 9. Secure clock function.

S.No	Description	Parameter
1	Control Unit	CP-8050 Main Processor
2	Microprocessor	Altera Cyclon V SoC 5CSEB A4 Dual Core ARM Cortex A9 MPcore Processor Core clock 800 MHz System Clock: ca. 333 MHz
3	Memory	DDR3 RAM 512 MB
4	Program Memory	QSPI Flash 64 MB – Boot Flash eMMC Flash 4 GB
5	Local NV memory	NVRAM 256kBytes
6	Changeable NV Memory	SD card up to 2 GB
7	Application Program Max. Size	3 MB
8	Memory for Online test, real time archive	512kB
9	Program Sampling	Cyclical 10ms to 65520ms
10	Standard Interfaces	2 Ethernet/LAN interfaces (X2, X3), 1 serial interface (X4) RS-485 Mode, 1 serial interface (X5) RS-232 Mode
Power Requirements		
11	Input voltage	18-70 VDC
Power consumption		
12	Control Unit	4.5 W
13	Remote I/O Module	7 W
14	Guaranteed Interruption time	50 ms
Environmental		
15	Protection Class	IEC-60529 Front IP:40 Other Sides:IP20
16	Operation Temperature	-25° C ... +70° C
17	Storage	-30° C ... +85° C

	Temperature																			
18	Relative humidity	Max. 95 % (non condensing)																		
19	Resistance to vibration	IEC 60068-2-6 (1.0g for 60-150 Hz)																		
20	Resistance to impact	IEC 60068-2-27 (10 g for 16 ms duration)																		
EMC																				
21	IEC 61000-4-2 ESD	Level 3, 6/8 kV (contact/air)																		
22	IEC 61000-4-3 EMF	Level 3, 10 V/m																		
23	IEC 61000-4-4	Burst Level 4, 4 kVs																		
24	IEC 61000-4-5	Surge Level 4, 4 kV (field I/O)																		
25	IEC 61000-4-6	Level 3, 10 V																		
26	IEC 61000-4-8 50Hz EMF	Level 4, 100 A/m																		
Dimensions (w/o DIN rail)																				
27	Control Unit (WxHxD)	30/132/142 mm																		
28	I/O Module	30/132/142 mm																		
Weight																				
29	Control Unit	Approx. 235 g																		
30	I/O-Module	Approx. 255 g																		
Remote I/O modules per CPU																				
31	Number standard:	Max 16 I/O Lines																		
32	Maximum	15 electrically																		
33	Typical I/O points	Up to 896																		
Digital I/O Modules																				
34	Galvanic insulation	250 V																		
Watchdog & Error relays Output																				
35	Watchdog & Error Relays Output	1 No. Each																		
36	Max. Operating Voltage	60 V DC																		
37	Max. Continuous Current	1 A																		
Response behavior of the watchdog/error relay:																				
<table border="1"> <thead> <tr> <th>Description</th><th>Error Relays</th><th>Watchdog Relays</th></tr> </thead> <tbody> <tr> <td>Power Off</td><td>OFF</td><td>OFF</td></tr> <tr> <td>Startup</td><td>ON</td><td>OFF</td></tr> <tr> <td>Ready (no pending error)</td><td>OFF</td><td>ON</td></tr> <tr> <td>Ready (pending error)</td><td>ON</td><td>ON</td></tr> <tr> <td>CPCI85 Firmware shut down (Ready LED flashes)</td><td>ON</td><td>OFF</td></tr> </tbody> </table>			Description	Error Relays	Watchdog Relays	Power Off	OFF	OFF	Startup	ON	OFF	Ready (no pending error)	OFF	ON	Ready (pending error)	ON	ON	CPCI85 Firmware shut down (Ready LED flashes)	ON	OFF
Description	Error Relays	Watchdog Relays																		
Power Off	OFF	OFF																		
Startup	ON	OFF																		
Ready (no pending error)	OFF	ON																		
Ready (pending error)	ON	ON																		
CPCI85 Firmware shut down (Ready LED flashes)	ON	OFF																		
ON: Relay is energized																				
OFF: Relay has dropped.																				
General Performance Data																				
38	Speed dead band	$\leq 0.02 \%$																		
39	Range of speed	1.2 – 12000 Hz																		

	measurement	
40	Resolution of speed measurement	$\leq 5 \times 10^{-5}$
41	Nonlinearity of linear position transducer	$< 0.05 \% \text{ FS}$
42	Governor dead time	$\leq 0.2 \text{ s}$
43	Speed stability index	$\leq 0.3 \%$
44	Power stability index	$\leq 0.4 \%$
Standard Parameter Adjustment		
45	Proportional gain	0 - 500
46	Integral action time	0.05 – 5000 s
47	Derivative time	0 – 10 s
48	Permanent speed droop	0- 10 %
49	Speed changer adjustment	85 / 90 – 110 %
50	Speed changer time setting	10 – 1000 s
51	Load/power changer adjustment	-5.0 – 105 %
52	Load/power changer time setting	10 – 1000 s
53	Opening gate limiter adjustment	-5.0 – 105 %
54	Opening gate limiter time setting	10 – 1000 s
Speed Acquisition Module TE – 6420 (Using TM I/O Module)		
55	Number of Channels	4 (Pulse Input)
56	Operating Voltage	24 V DC
57	Frequency Range	Period duration Monitoring for frequencies 1.2 12 kHz
58	Accuracy	0.1 %
59	Power Consumption	790 mW
REMOTE I/O COMMUNICATION INTERFACE MODULE CI-8530		
60	CI-8530	Communication with CP-8050 by Ethernet based I/O bus
61	Possible Remote I/O Rows	15 rows (each with upto 8 I/O Modules)
62	Possible Configurations	Ring, Star and Dasy-Chain
63	Power Supply	Integrated (Supply upto 8 I/O Modules)
64	Address Selection	Rotary Switch for row number selection. • Row with CP-8050 is always row-0
65	Operating Voltage	18-78 V DC
66	Output Power	7 W
67	Ports	Ethernet RJ45 (X2) – For Ethernet I/O Bus Ethernet RJ45 (X3) – For Ring redundancy of CP – 8050

		Device-A & Device-B
SICAM A8000 POWER SUPPLY		
68	PS- 8640	Power Supply Module
69	Input Voltage	18-78 V DC
70	Input Current	2.20 A
71	Output Voltage	5.15 V DC $\pm 3\%$ dynamic
72	Output Power	12 W

9. ENGINEERING AND DOCUMENTATION

All documentation needs to be submitted in English in both electronic format (CD or Memory stick or email and signed hard copy).

1) Preliminary drawing

- Equipment block diagram
- Equipment dimensional drawings

2) Final drawings

Electrical diagram including block diagram, list of internal material, connections and terminal list.

- Equipment dimensional drawings

3) Test reports

- Factory test report.
- All Commissioning Test Reports at site.

4) Sets of Manuals

Equipment hardware and software description

- Operational manual
- Maintenance manual
- Trouble shooting & Diagnostics manual

5) As built Drawings

Hard copy of documents is essential.

10. Spares List :

The following items should be provided as spares.

Sl.No	Item Description	Qty
1	Converter module	1No.
2	CIOIO module	1No.
3	ICU-Input Coupling Unit	1No.
4	Crowbar Firing Board	1No.
5	Crowbar CT	1No.
6	FieldBreaker400A	1No.
7	PowerSupply10A	1No.

11.0 Erection & Commissioning

- The Dismantling of the existing excitation system and allied Equipment, Erection, Testing and commissioning of new excitation system and allied Equipment is in the scope of the bidder. Dismantling and ETC of the existing equipment, to be replaced shall be carried out by the supplier in co-ordination with the Purchaser.
- While submitting the tender, following points shall be kept in view:-
 - No transportation facility shall be provided by the purchaser.
 - The bidder shall carry out all the field acceptance tests successfully before handing over the excitation system.

12.0 INSTRUCTION BOOKLETS

The Contractor shall furnish instructions booklets containing technical literature regarding detailed description of excitation system, erection, operation and maintenance and troubleshooting of new system and other associated equipment's.

13.0 GUARANTEE

- The contractor shall ensure minimum of two years Guarantee period for the new excitation systems with all associated accessories equipments supplied by them from the date of successful commissioning.
- The contractor shall ensure technical support up to 15 years period for the new excitation systems with all associated accessories equipments supplied by them on chargeable basis after expiry of the Guarantee period.
- Technical support shall involve rectification/replacement for the new excitation system.
- The contractor shall ensure to rectify the technical problems/issues regarding the new excitation system commissioned by them within 10 days from the written/email communication.

14.0 Training

Necessary onsite training shall be provided to the field engineers

3.0 GENERAL SPECIFICATIONS:

- 3.1 The tenderer can inspect the Sathanur Dam Power House/Sathanur Dam in Erode Generation Circle before quoting the rates, in order to have an overall idea of the existing excitation System.
- 3.2 Where the contract specifications does not indicate all the standard specifications applicable, or where it has been left partly or wholly to the discretion of the inspector, the standard specifications to be applied on the job shall be decided in consultation with the TNGECL.
- 3.3 The work shall be done during the non irrigation period.

- 3.4 Any modification (or) alteration required in the existing arrangement should be at contractor scope.
- 3.5 Cost of transport of materials, lead & lift, scaffolding tools, machineries required for carrying out the work in complete shape is in the scope of the contractor.
- 3.6 The contractor should employ skilled laboures.
- 3.7 All T&P's and consumables required for the work should be provided by the contractor at his scope.
- 3.9 The work should be carried out as per the specification and instruction of the Engineer in charge by engaging adequate skilled & suitable labourers to complete the entire work in time.
- 3.10 During the course of execution of work if other persons meet with an accident, the contractor alone is responsible to compensate the individual for loss.
- 3.11 No damage should be caused to TNGECL's property and equipment. In the event of any damage caused, the same should be set right by the contractor at his cost.
- 3.12 The contract is liable for termination at any time during the period of contract without assigning any reasons thereof.
- 3.13 All the workers and supervisory staffs should be insured as per Workman Compensation Act. The TNGECL will not be responsible for any compensation in the event of any loss due to accident. The same has to be borne by the contractor. Any direct or indirect loss due to accident has to be made good by the contractor.
- 3.14 If the contract does not carry out the work to the entire satisfaction of the Engineer in charge, the contract will be liable for termination without any reasons therefore.
- 3.15 The contractor should take care and ensure that law and rules are not violated in doing the work either by himself or by his personnel's.
- 3.16 The works should be done carefully and without hindrance to other works carried out by TNGECL in that area.
- 3.17 The workers shall confine themselves, within the areas for which the works contract has been awarded as specified by the Engineer.
- 3.18 The contractor should provide adequate safety appliance to his employee for which no claim from TNGECL can be made.
- 3.19 All the workers should be insured against accident. The TNGECL will not be responsible for any compensation in the event of accident s etc.,

- 3.20 Risk and Insurance Policy before commencement of work, the contractor is to take accident risk Insurance policy for the workman covering the entire period of work and produce the same to the site Engineer for verification.
- 3.21 During flood conditions or such kind of any other unavoidable circumstances, the work may have to be stopped as per the instructions of Engineer in charge.
- 3.22 The work should be carried out as per the specification and instruction of the Engineer in charge by engaging adequate skilled & suitable labourers to complete the entire work in time.
- 3.23 The contractor should take over the site and commence the work within 5 days from receipt of intimation from the Superintending Engineer/Erode Generation Circle regarding readiness of the gates for handing over.
- 3.24 The contractors executing the works contract/contract in which labours are engaged should provide an accidental insurance scheme for Rs.2,00,000/- additionally under Pradhan Mantri suraksha Bima Yojana (PMSBY) scheme through the Bank/Post Office for a premium of Rs'20/- per annum per person, to all the labours engaged by them for the works in TNGECL.

4.0 ELECTRICITY RULES :

All works shall be carried out in accordance with the latest provisions of the Indian Electricity Act and the rules there under unless modified by this specification.

5.0 TECHNICAL CLARIFICATION:

Any technical clarification and drawing regarding this tender may be obtained from Superintending Engineer/Erode Generation Circle/ Uratchikottai. (04256-235343).

SD/-

CHIEF ENGINEER/HYDRO

SECTION – VIII – FORMATS
SPECIFICATION NO.HE-2526
SCHEDULE - `A'- PRICE SCHEDULE
(To be filled ONLINE by the Tenderer)

Name of the work: Upgradation of excitation system including design, Engineering, Manufacturing, supply, erection, testing and commissioning suitable to the existing Hydraulic system and Digital Governor Cum Auto Sequencer Panel(DGASP) at Sathanur Dam Power House/ Sathanur, Erode Generation Circle.

SCHEDULE OF RATES:**Prices in Rupees**

SL. No.	Description of Work	Quantity	Amount
1.	Dual Channel Static Excitation panel based UNITROL 6000 (UNITROL AGT01-/D3T1-D400) for 1*8.33 MVA (7.5 MW) synchronous generator static Excitation system	1 No.	To be filled online only.
2.	Spares including 1 no. converter module, 1 no. CIO IO module, 1 no. ICU – Input Coupling unit, 1 no. Crowbar Firing Board, 1 no. Crowbar Current Transformer, 1 no. Field Breaker 400 A & 1 no. power Supply 10 A.	1 set.	To be filled online only.
3.	Erection and Commissioning Charges	LS	To be filled online only.
	Sub_total (Sl.No.1+2+3)		
	IGST/(SGST+CGST) in %		
	Grand Total (all inclusive)		

* For the bidders inside TN - GST is (CGST + SGST)

For the bidders outside TN – GST is IGST

Note: The intending bidders are requested to inspect the site before submitting the offer so as to make sure of the requirements. The contractor will alone be responsible for ignoring site visit before tendering and TNGECL will in no way be liable for this lapse on the part of the bidder. While quoting the rates the bidder shall indicate the HSN code and SAC for all the tendered items as per GST Act.

COMPANY SEAL
DATE

SIGNATURE
DESIGNATION
COMPANY NAME

NOTE:

** F & I : Freight and Insurance

P & F : Packing and Forwarding.

: For supply at the destination stores.

SD/-
CHIEF ENGINEER/HYDRO

Schedule- B**SPECIFICATION NO.HE -2526****DEVIATION FROM TECHNICAL SPECIFICATION**

All technical deviations from the specification shall be filled in by the Tenderer, clause by clause, in the Schedule.

SECTION NO.	CLAUSE NO.	DEVIATION

The Tenderer hereby certifies that the above-mentioned are the only deviations from the Technical Specification and the tender conforms to the specification in all other respects.

COMPANY SEAL:

SIGNATURE :

DATE:

DESIGNATION :

COMPANY :

SCHEDULE – C
SPECIFICATION NO.HE -2526
DEVIATION FROM COMMERCIAL SPECIFICATION

All Commercial deviations from the specification shall be filled in by the tenderer, clause by clause, in the Schedule.

SECTION NO	CLAUSE NO	DEVIATION

The tenderer hereby confirms that the above mentioned are the only deviations from the Commercial Specification and the tender conforms to the specification in all other respects.

COMPANY SEAL

DATE

SIGNATURE

DESIGNATION

COMPANY NAME

SCHEDULE –D
SPECIFICATION NO.HE -2526
STATEMENT OF WORK ORDERS EXECUTED/UNDER EXECUTION DURING
THE PAST TEN YEARS AS ON DATE OF TENDR OPENING

Sl No	Name & Address of the Organization incl. other SEBs	Name of the material/works	P.O./ WCT No. & Date	Qty	Value of order in Rs. Lakhs FOR (D) Price **	Schedule date of completion of Order	Actual date of Completion of Order	Whether PO Copy is Enclosed (Yes/ No)	Whether End User Certificate Copy is Enclosed (Yes/ No)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		
** Split up details such as Ex-works Price, F&I and GST FOR (D) per each may be enclosed separately.									

NOTE:

1) Copies of orders received shall be enclosed.

COMPANY SEAL

DATE

SIGNATURE

DESIGNATION

COMPANY NAME

SCHEDULE – E
TAMIL NADU GREEN ENERGY CORPORATION LIMITED
DECLARATION FORM
SPECIFICATION NO.HE-2526

To
 The Chief Engineer/Hydro,
 TNGECL,
 5th Floor, Eastern Wing,
 NPKRR Maaligai, Electricity Avenue,
 144, Anna Salai,
 Chennai – 600 002.

Dear Sir,

1. Having examined the above specification together with the accompanying schedules etc., we hereby offer to supply the equipment covered in this specification at the rates entered in the attached schedule of prices.

2. We hereby guarantee the particulars entered in the schedules attached to the specification.

3. In accordance with security deposit cum performance guarantee clause, Section-V, of the specification we agree to furnish security deposit cum performance guarantee to the extent of 5% of the total value of the contract/ retain 5% payment till the expiry of guarantee period.

4. Our company is not a potentially Sick Industrial Company or a Sick Industrial Company in terms of Section-23 or Section-15 of the Sick Industrial Companies (Special Provisions) Act, 1985.

Yours faithfully,

PLACE :
 DATE :
 COMPANY SEAL :

SIGNATURE :
 DESIGNATION :
 COMPANY :

SCHEDULE-F
SPECIFICATION NO.HE -2526
DECLARATION FORM

To be signed with company seal on letter head and uploaded in the technical Bid

TENDER ACCEPTANCE LETTER

(To be given on Company Letter Head) Date:

To,

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No:-----Name of Tender/Work

Dear Sir,

1. I/We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely:

As per your advertisement, given in the above mentioned website(s).

2. I/We hereby certify that I/We have read the entire terms and conditions of the tender documents from page No.----- to -----(including all documents like annexure(s), schedule(s), etc.,) which form part of the contract agreement and I/We shall abide hereby the terms / conditions / clauses contained therein.

3. The corrigendum(s) issued from time to time by your department/ organization too has also been taken into consideration, while submitting this acceptance letter.

4. I/We hereby unconditionally accept the tender conditions of above mentioned tender document(s) corrigendum(s) in its totality / entirety.

5. In case any provisions of this tender are found violated, then your department/organization shall without prejudice to any other right or remedy be at liberty to reject this tender/bid including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,
 (Signature of the bidder, with official Seal)

SCHEDULE – G
SPECIFICATION NO.HE -2526
QUESTIONNAIRE-A
CHECK LIST FOR BID QUALIFICATION
(TO BE KEPT IN THE ENVELOPE-A"COMMERCIAL AND TECHNICAL BID")

S.No.	Particulars	Bidder's Response.
01	Name and Address of the Firm/Company.	
02	Address of the Registered office, Phone Nos. etc.,	
03	Address of the Factory/Works, Phone Nos. etc.,	
04	Fax No. for correspondence and E-Mail address.	
05(a)	Confirm whether the tenderer is having previous experience in Supply, Erection and Commission of excitation system in Hydro/Thermal/Gas Turbine Power Stations. The above work should have been carried out at any State Electricity Boards or PSUs or Govt. of India or state government organization or Undertaking of Central Govt. or State Govt. during the preceding Ten years as on the date of tender opening.	Yes/No
(b)	If yes, whether attested documentary evidence is enclosed as per BQR condition.	
(c)	If so, list the documentary evidence.	
06	Whether the bidder is old supplier/contractor to TNGECL.	Yes/No
07	Whether the attested copies of orders executed to Power Utilities in State or Central Sector/Public Sector Undertakings/any Govt. Organizations/Govt. undertakings enclosed.	Yes/No
08	Whether attested copies of performance certificates from the end users enclosed.	Yes/No
09	Annual Turnover of the Bidder for the preceding three years. 2022 – 2023, 2023 – 2024, 2024 – 2025	
10(a)	Whether attested copies of the documentary evidence produced for the annual turnover.	Yes/No
(b)	If so, whether certificate from auditor furnished or copies of audited annual statement of accounts furnished, duly attested ones.	

UNDERTAKING

I , _____ Sole Proprietor / Partner of M/s. _____ give undertaking that details given in the above QUESTIONNAIRE-A are correct to the best of my knowledge and I agree to abide by all your Tender / Order terms & conditions.

Date :

Place :

SIGNATURE OF THE TENDERER
NAME
STATUS IN THE COMPANY
(AFFIX SEAL OF THE COMPANY)

QUESTIONNAIRE-B
SPECIFICATION NO.HE -2526
CHECK LIST FOR COMMERCIAL TERMS

(TO BE KEPT IN THE ENVELOPE- A"COMMERCIAL AND TECHNICAL BID")

S.No.	Particulars	Bidder's Response.
01	EARNEST MONEY DEPOSIT:	
(i)	Amount.	Rs.1,00,000/-
(ii)	Mode of payment.	NEFT/RTGS/ by way of Account transfer
(iii)	If exempted state whether the bidder is.	SSI unit of Tamil Nadu/ SSI unit registered with NSIC/Unit of Government of Tamil Nadu.
(iv)	If SSI unit state whether copy of duly attested permanent Registration Certificate enclosed.	Yes/No
(v)	Whether the material tendered is included in the certificate.	Yes/No.
(vi)	Validity of the permanent registration certificate.	Yes/No
(vii)	Whether duly attested undertaking enclosed in lieu of EMD.	Yes/No
02	Whether the offer is valid for a period of 90 (Ninety) days from the date of opening of commercial/Technical bids.	Yes/No
03	PRICE:	
i)	Whether quoted firm price valid for the entire contract period.	Yes/No
ii)	Whether the quoted price contain the following breakup price.	Yes/No
a)	Unit ex-works price.	Yes/No
b)	Unit Freight and Insurance charges, P & F Charges	Yes/No
c)	Unit GST applicable (Percentage and amount).	Yes/No
iii)	Confirm that the price quoted is after taking into account of the ITC benefit.	Yes/No
iv)	Whether the tenderer is agreeable in case of delayed delivery, the GST prevailing on the date of actual delivery or the GST applicable on the date of contractual delivery date whichever less shall only be payable.	Yes/No
v)	Confirm that Freight and Insurance charges quoted are applicable for delivery to any of the TNGECL stores in Tamil Nadu including the unloading by the supplier.	Yes/No
04	Whether the tenderer is agreeable for the following clauses specified under Section-V of the Specification.	

i)	Payment terms (Clause-6.0)	Yes/No
ii)	Security Deposit cum PG (Clause-7.0)	Yes/No
iii)	Completion Period (Clause-8.0)	Yes/No
iv)	Liquidated Damages (Clause-10.0)	Yes/No
v)	Guarantee (Clause-12.0)	Yes/No
vi)	Jurisdiction for legal proceedings (Clause-18.0)	Yes/No
05	Whether tenderers furnished their permanent Account Number (PAN) and GSTIN in their offer.	PAN No. GSTIN No.
06(i)	Whether the tenderer has accepted all the commercial terms of specification of TNGECL.	Yes/No.
(ii)	If not, give details of commercial deviation in the deviation schedule C.	

UNDERTAKING

I , Sole Proprietor / Partner of M/s. give undertaking that details given in the above QUESTIONNAIRE-B are correct to the best of my knowledge and I agree to abide by all your Tender / Order terms & conditions.

Date :

SIGNATURE OF THE TENDERER

Place :

NAME

STATUS IN THE COMPANY
(AFFIX SEAL OF THE COMPANY)

QUESTIONNAIRE-C
SPECIFICATION NO.HE -2526
CHECK LIST FOR TECHNICAL TERMS
(TO BE KEPT IN THE ENVELOPE – A “COMMERCIAL AND TECHNICAL BID”)

S.No.	Particulars	Bidder's Response.
01(i)	Whether the equipment / material offered is exactly as per technical specification of TNGECL.	Yes/No.
(ii)	If not, give details of technical deviation in the deviation schedule B.	

UNDERTAKING

I , Sole Proprietor / Partner of M/s. give undertaking that details given in the above QUESTIONNAIRE-C are correct to the best of my knowledge and I agree to abide by all your Tender / Order terms & conditions.

Date :

SIGNATURE OF THE TENDERER

Place :

NAME

STATUS IN THE COMPANY
(AFFIX SEAL OF THE COMPANY)

ANNEXURE – I**DECLARATION FORM****SPECIFICATION NO.HE -2526****DRAFT UNDERTAKING IN LIEU OF PAYMENT OF EMD**

(To be furnished in non-judicial stamp paper of value not less than Rs.500/-)

THIS UNDERTAKING executed aton this the day of.....month of Two thousand and twenty Six by M/S.a company registered under companies Act 1956, having its registered office at herein-under, called the "Tenderer" to & in favour of the TNGECL, a body corporate incorporated under Companies Act, 1956, having its office at 144, Anna Salai, Chennai- - 600 002, represented by herein after called the 'TNGECL'.

WHEREAS the contract is for the supply/erection/construction etc. in terms of the Tender Specification NO.....dated

AND WHEREAS in accordance with clause . . . of the above said tender specification, the tenderer has to furnish E.M.D. of Rs..... (Rupees only) AND WHEREAS the tenderer has requested the TNGECL to accept an undertaking in lieu of payment in cash of the E.M.D. AND WHEREAS the TNGECL has accepted the request of the tenderer subject to executing an undertaking to pay to the TNGECL not exceeding Rs..... (Rupees only) representing the E.M.D. together with costs in case of non fulfillment of the conditions stipulated in the Tender Specification/or the conditions stipulated in the contract by the tenderer.

IN CONSIDERATION OF THE TNGECL having agreed to accept an undertaking from the tenderer in lieu of payment of Earnest Money Deposit in cash, the tenderer undertakes to pay the sum of Rs..... (Rupeesonly) immediately when a demand is raised by the TNGECL against the tenderer without any demur in the event of the following :

- i) If he withdraws his tender or backs out after acceptance of the tender or fails to remit the Security Deposit.
- ii) If he revises any of terms quoted during the validity period, without specific request by the TNGECL.
- iii) If he violates any of the conditions of Tender Specification No.

NOW THE CONDITION OF THE ABOVE WRITTEN UNDERTAKING is such that if the tenderer shall duly and faithfully observe and perform the terms and conditions specified in terms of above, then the above written undertaking shall be void, otherwise the same shall remain in full force. The tenderer undertakes not to revoke this guarantee till the contract is completed under the terms of contract. The expressions, 'tenderer' and 'the TNGECL' before used hereafter shall include their respective successors and assign in office.

IN WITNESS WHEREOF Thiru for and on behalf of..... the tenderer has signed this undertaking on the day, the month and year first above written.

In the presence of

Witnesses:

1.

Signature

NAME IN BLOCK LETTERS

Signature with names and addresses.

SEAL OF THE COMPANY

All other terms and conditions remain unaltered. For complete details of the tender please visit the following websites.

(www.tangedco.gov.in)

(www.tenders.tn.gov.in)

(<https://tntenders.gov.in>)

ANNEXURE - II
SPECIFICATION NO.HE -2526

GUARANTEE IN RESPECT OF SECURITY DEPOSIT CUM PERFORMANCE OF MATERIALS/EQUIPMENTS/WORKS PAYABLE BY THE TENDERER STAMP PAPER VALUE RS.500/-

THIS DEED OF GUARANTEE MADE AT CHENNAI this daymonth of Two thousand and twenty six between the. (hereinafter called "The Bank") of the one part and the Tamil Nadu Green Energy Corporation Limited, a body corporate incorporated under Companies Act, 1956, having its registered office at 144, Anna Salai, NPKRR Maaligai, Chennai – 600002 (hereinafter called the Purchaser) of the other part:

WHEREAS (hereinafter called "the Contractor") have by virtue of the contract entered into with the Purchaser as per WCT No. agreed with the Purchaser to supply in accordance with the terms and conditions contained therein:

AND WHEREAS the Purchaser in his WCT No. . . . has directed the Contractor to pay a sum of Rs. . . . /- (Rupees only) as Security Deposit cum performance Guarantee.

AND WHEREAS the contractor has requested the Purchaser to accept the Bank guarantee in lieu of Security Deposit cum performance Guarantee in cash:

AND WHEREAS the Purchaser has agreed to accept the Bank Guarantee from a Scheduled Bank towards Security Deposit cum performance Guarantee for a sum equivalent to 5% (Five percent) of the value of the contract for the satisfactory performance of the contract:

AND WHEREAS the Bank has, at the request of the Contractor, agreed to Guarantee the payment of the said sum in case the contract is not performed in accordance with the specifications indicated in the terms and conditions contained in WCT. No.

NOW THE DEED WITNESSESS AS FOLLOWS:-

1) IN consideration of the Purchaser having agreed to accept a Bank Guarantee from a scheduled Bank towards Security Deposit cum performance Guarantee for a sum equivalent to Rs. /- (Rupees only), the Bank do hereby guarantees that if the Contractor fails to perform the contract in accordance with the specification and conditions of the contract as subsequently amended, the Bank shall pay forthwith to the purchaser such amount or amounts as per Bank may be called upon to pay by the Purchaser:

PROVIDED that the liability of the Bank under this Deed shall not at any time exceed the said Guaranteed amount of Rs.. . . . /- (Rupees only).

PROVIDED further that the Guarantee hereunder furnished shall be released as soon as the contractor has performed his part of the contract in accordance with the terms of the contract and a certificate to that effect is issued by the purchaser;

2) The Bank further undertakes to indemnify the purchaser against any loss or damage that may be caused or suffered by the Purchaser by reason of any breach of the terms and conditions in the said PO.

3) The Guarantee herein contained shall remain in force till the terms and conditions of the PO No. . . . have been fully and properly carried out by the said Contractor and in any case, the Guarantee shall not hold good after the

4) The Bank further agrees with the Purchaser that the purchaser shall have the fullest liberty (without the consent of the Bank and without affecting in any manner the obligations of the Bank hereunder) to vary any of the terms and conditions of the contract or to extend the time of performance of the contract by the said contractor from time to time or to postpone from time to time any of the powers exercisable by the purchaser against the said contractor and to forbear or to enforce any of the terms and condition relating to the said contract and the bank shall not be relieved of its liability by reason of any such variations or extensions being granted to the said contractor or by reason of any forbearance, act or omission on the part of the purchaser or any indulgence by the purchaser to the said contractor or by any such matter or thing whatsoever which under the law relating to sureties would but for these provisions have the effect of so relieving the Bank.

5) Any account settled between the Purchaser and the contractor shall be the conclusive evidence against the Bank for the amount due and shall not be questioned by the Bank.

6) The Expressions "Bank", "Purchaser" and "Contractor" herein before used shall include their respective successors and assigns:

Notwithstanding anything contained herein:

- i) Our liability under this Bank Guarantee shall not exceed Rs. /- (Rupees only)
- ii) This Bank Guarantee shall be valid upto
- iii) We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before

IN WITNESS WHEREOF Thiru. and on behalf of the bank has signed this Deed on the day, month and year first above written.

IN THE PRESENCE OF WITNESSES.

- 1.
- 2.

ANNEXURE - III**SPECIFICATION NO.HE-2526****UNDERTAKING TOWARDS JURISDICTION OF LEGAL PROCEEDINGS**

(To be furnished in non-judicial stamp paper of value not less than Rs.500/-)

This Undertaking executed at on this (date) Month Two Thousandby M/s, a company registered under Companies Act , 1956 having its registered office athereinafter called the Contractor (which expression shall where the context so admits mean and include its successors in office and assigns) with the TNGECL, a statutory authority created under the powers vested with the Electricity Act 2003, having its registered office at 144, Anna Salai, NPKRR Maaligai, Chennai-600002, hereinafter called the Purchaser (which expression shall where the context admits mean and include its successors in office and assigns).

WHEREAS the contract is for the supply of.....in terms of the W.C.T. No. date

AND WHEREAS in accordance with Clauseof the above said WCT Certain terms were stipulated for the above supply.

AND WHEREAS in accordance with clause of the above mentioned Works Contract Order the contractor has to furnish an Undertaking that no suit or any proceedings in regard to any matter arising in any respect under this contract shall be instituted in any court other than in the City Civil Court of Chennai or other Court of small causes, at Chennai.

In consideration of the TNGECL having agreed to accept the Undertaking from the contractor, undertakes that no suit or proceedings in regard to any matter arising in any respect under this contract shall be instituted in any court other than in the City Civil Court of Chennai or other Court of small causes, at Chennai.

It is also agreed that no other court shall have jurisdiction to any suit or proceedings even though part of the cause of action might arise within their jurisdiction. In case any part of the action arises within the jurisdiction of any of the courts in Chennai City, then it is agreed to between the parties that such suits or proceedings shall be instituted in court within Tamil Nadu and no other court outside Tamil Nadu shall have jurisdiction even though any part of the cause might arise within the jurisdiction of such courts.

IN WITNESS WHEREOF THIRU..... of the contractor hereby puts his hand and seal for due observance of the Undertaking in the presence of the following witnesses.

SIGNATURE WITH SEAL**WITNESSES:**

(Signature with Name and Address)

- 1.
- 2.

ANNEXURE –IV**SPECIFICATION NO.HE -2526**

ITC Undertaking to be submitted by the L1 bidder in non-judicial stamp paper of value not less than Rs.500/-

To
The Chief Engineer /Hydro,
TNGECL.

We hereby declare and confirm that we are registered vendor under GST Act having GSTIN _____ in State of _____. Our applicable GST% for the above reference job is _____ under code _____.

We hereby declare and confirm that we are registered vendor under composite scheme having GSTIN.

We are aware that as per sec 171 of CGST Act (ie.ITC benefit), any reduction in rate of tax on any supply of goods or services or the benefit of input tax credit should be passed on to TNGECL by way of commensurate reduction in prices and as such we hereby declare that we are extending Rs. _____ /- of % as rebate in my quoted price against input tax credit benefit.

We hereby declare that we do not have any input tax credit benefit on account of GST applicable against this job. If it is established that we have availed input tax credit benefit against this job, the differential tax benefit will be returned to TNGECL failing which TNGECL may take appropriate action.

Signature of bidder with Company Seal.

Note:

Bidder may strike out the para not applicable

ANNEXURE - V**SPECIFICATION NO.HE -2526****UNDERTAKING FOR PAYMENT OF DUES TO TNGECL**

(To be furnished in non-judicial stamp paper of value not less than Rs.500/-)

THIS DEED OF UNDERTAKING executed aton this the day of
Two thousand and -----

THE ----- By messers.

Hereinafter called the "TENDERER" (which expression where the context so admits mean and include their agents, Representatives, Successors- in – office and Assigns).

TO AND IN FAVOUR OF

The TNGECL is a company registered under companies Act, 1956 having its office at NPKRR Maaligai, 144, Anna salai, Electricity Avenue, Chennai- 600 002, hereinafter called the "Corporation" (which expression shall where the context so admits mean and include the successors- in- office and assigns).

WHEREAS the corporation has called for an undertaking from the Tenderer empowering the Corporation to recover the dues if any.

NOW THIS UNDERTAKING WITNESSETH the corporation is empowered to recover any dues against this contract in any bills/security deposit/E.M.D due to the Tenderer either in this contract or any other contracts with the Corporation. Further, the Tenderer hereby authorises the Corporation to recovery, any dues against any other contract of the Tenderer with the Corporation with the available amount due to the Tenderer against this contract.

IN WITNESS WHERE OF Thiru. acting for and on behalf of the
Tenderer has signed this deed on the day, month and year herein before first mentioned.

- COMPANY SEAL-

SIGNATURE OF THE TENDERER

NAME :

DESIGNATION:

ANNEXURE - VI
SPECIFICATION NO.HE -2526
GUARANTEE CERTIFICATE

We the undersigned M/S hereby guarantee the new Upgradated excitation system with all its associated accessories commissioned at Sathanur Dam Power House/Sathanur Dam shall be guaranteed for satisfactory operation and good workmanship for a period of **TWO years** from the date of commissioning of new Upgradated excitation system in all respect as per schedule.

We shall correct, at our own expense, the defects, if any, during the guarantee period. Within two years, after acceptance of the equipment and completion of erection if any part of the above said works is found defective because of workmanship or material or otherwise, we shall at our own expense, furnish and install new part and materials approved by the purchaser.

We shall assume all responsibility for direct damages causing personnel injury or property damage caused by any manufacturing defects resulting in the failure of the equipment being supplied under these specifications.

Any defects noticed during this period shall be rectified free of cost to the Corporation within 2 (Two) months from the intimation of defect/failure. Irrespective of number of failures and repairs, we are responsible for free replacement of the defective materials till the completion of guarantee period. If they are not rectified or replaced within this period we shall pay Liquidated Damages as per Liquidated Damages clause in the contract for the delay from the date of receipt of intimation for the defects or failures. The incidental expenses, insurance and freight charges for the replacement of defective materials within the guarantee period shall also be borne by us till the completion of guarantee period.

The guarantee among other things are the following:

- a. Quality and strength of the materials used.
- b. Satisfactory operation of the equipment.
- c. Safe stresses in all parts under all conditions of operations.
- d. Protection of equipments against vibration and corrosion.
- e. Workmanship

Place:

Date :

SIGNATURE WITH SEAL

ANNEXURE-VII
SPECIFICATION NO.HE -2526
DRAFT UNDERTAKING

(The undertaking should be submitted by the contractors in 500 rupees stamp paper for the respective works while claiming the part/final bills)

Declaration towards EPF & ESI remittances

Name of the contractor:

EPF Main code number:

ESI Main code number:

Nature of the work:

Contract /K2 agreement No:

1. I/We hereby state that (Name of the contractor) has been duly registered under EPF Act and ESI Act vide main code number _____ and _____ respectively.
2. I/We hereby state that the EPF & ESI employee and employer contribution has been remitted for all the workers engaged for execution of the respective contracts entered with TNGECL.
3. I/We hereby state that there are no EPF & ESI dues to be remitted in respect of the period of execution of the respective contracts and in case, if there is any shortfall of discharging the EPF & ESI obligations on our part(contractor) at later date, TNGECL shall not be responsible for the consequent Legal/Financial obligations.
4. In the event of EPF & ESI obligations are found on our part (contractor) in respect of subject contract, the same will be duly discharged by me/us to the respective authorities.

Authorised Signatory
(Contractor)
With Seal

Date :

Place :