

ASSAM POWER GENERATION CORPORATION LIMITED

Office of the Chief General Manager (Generation), APGCL

Bijulee Bhawan, 3rd Floor, Paltanbazar , Guwahati-1: Assam

CIN: U40101AS2003SGC007239

Phone /Fax no: 0361-2739546 E-mail: cgm-g@apgcl.com



Tender Notice No: APGCL/CGM (G)/LTPS/R&M/Control System/109(AG)/2
Dtd.02/01/2016

NAME OF WORK:

Up-gradation of 01 (one) no. GE Speedtronic Mark-IV Control System at Phase-II Power House of Lakwa Thermal Power Station (LTPS) along with interfacing with the DCS of Waste Heat Recovery Unit including supply, installation, Commissioning and Testing.

Serial no. :

Issued to :
.....

.....
Signature and Seal of the Issuing Officer

Cost of Tender: Rs 5,000/- (Rupees Five thousand) only

NOTICE INVITING TENDER

Tender Notice No: APGCL/CGM (G)/LTPS/R&M/Control System/109(AG)/2 dtd. 02/01/2016

The Chief General Manager (Generation), APGCL , Bijulee Bhawan , Guwahati-1 invites sealed tenders in 2 parts (Technical & Commercial) from reputed manufacturers /Manufacturer's authorized firms for the following work to be completed at Lakwa Thermal Power Station (LTPS) , Maibella-785689 , Dist : Sivasagar (Assam)

The Tender should be valid for 6 (six) months from the date of opening the Technical Bid.

Name of the work: Up-gradation of 01 (one) no. GE Speedtronic Mark-IV Control System at Phase-II Power House of LTPS including supply, installation, Commissioning and Testing.

Cost of Tender Document : Rs 5,000/- (Rupees Five thousand only) in the form of a/c payee Demand Draft/Banker's Cheque duly pledged in favour of the Dy. General Manager (F&A) , APGCL payable at Guwahati
(Non-Refundable)

Earnest Money : Rs. 10,00,000.00 (Rupees Ten Lakh) only in the shape of DD of any Scheduled Bank, duly pledged in favour of the Deputy General Manager (F&A), APGCL, Bijulee-Bhawan, Paltanbazar, Guwahati-1.

Issue of Tender Document : Up to 12-00 hrs. of 25/01/2016

Document :

Pre Bid Discussion: On 28.01.2016 at site LTPS during office hours.

Tender receiving : Up to 14-30 hrs of 04.02.2016

Tender opening : At 15-00 hrs of 04.02.2016 (Technical Bid only)

Price Bid opening: To be intimated in due course of time.

The Tender document may be obtained from the office of the Chief General Manager (Generation), APGCL , Bijulee Bhawan (3rd Floor) , Guwahati-1.

Details of the tender are available at APGCL's website : **www.apgcl.org**. The downloaded Tender document may be used , however , the cost of Tender document is to be submitted along with the Technical Bid , failing which , the bid shall be rejected outright .

Chief General Manager (Generation)

Assam Power Generation Corporation Ltd.

(A) OBJECTIVE:

Lakwa Thermal Power Station (LTPS) is a gas based Power Station consisting of three power houses (Ph-I, Ph-II & Ph-III) with total installed capacity of 157.2 MW. All the Gas and Steam Turbines run in synchronization with the National Grid.

The Phase-II Power House has 3 nos. of GE-BHEL make Frame-5 Model MS 5001 Gas Turbine Units. The generators are of 20 MW capacity each. The control system of the Gas Turbine Units is GE Speedtronic Mark-IV. There are 03 (three) nos. of Mark-IV Control Panels at Phase-II Power House of LTPS.

It is intended to up-grade 1 (one) no. Mark-IV Gas Turbine Control System with state of the art advance class Gas Turbine Control System.

(B) INTENT OF THE TENDER DOCUMENT:

The intent of this tender document is to furnish work scope for executing the Control System Up-gradation work as well as other technical and commercial requirements to be furnished or fulfilled by the bidder participating in the tender.

(C) ELIGIBILITY:

- i) Bidder: The bidder must be a manufacturer of Gas Turbine Control System or their authorized agency. Documentary evidence regarding the same must be furnished by the bidder in 'original' along with the technical bid. Bid received without the same will be rejected. In case of authorized agency of the manufacturer, all responsibility of supply, installation, testing, commissioning, after sales service and spare management will lie on the manufacturer and necessary confirmation in this regard shall have to be furnished alongwith the bid document.
- ii) Offered Product: The Control System and all other items offered by the bidder against this tender must be fully compatible with similar Gas Turbine Units (Frame V GT) of GE-BHEL make. Product Compatibility Certificate in original regarding compatibility of the offered control system with General Electric (GE) make Frame 5 Gas Turbine Unit must be furnished along with the technical bid, in the absence of which, the offered products of the bidder will not be accepted at this end and the submitted bid will be treated as cancelled.

In addition to the above, the bidder must guarantee the availability of the control system spare parts for a minimum period of 15 (fifteen) years from the time of commissioning of the new control system at LTPS site. Also, there must be the after sales technical support and service, (viz. repairing of faulty Cards and Modules, attending to technical faults in the control system whenever necessity arises and so on) from the bidder's end for the entire life span of the control system. The same shall hold true even if the supplied control system becomes obsolete and antiquated in due course of time. In this regard, the bidder will be required to submit necessary 'assurance' document(s) preferably in Stamp Paper, without which the bidder's bid may be rejected.

- iii) The bidder must satisfy the experience criteria as stipulated below.

(D) EXPERIENCE OF BIDDER:

Following experience criteria to be fulfilled by the bidder for acceptance of bid:

- The bidder must have experience of installing and commissioning of the offered Gas Turbine Control System in at least 5 (five) nos. similar GE Frame-V Gas turbine Units during last 08 (eight) years , out of which, at least 03 (three) nos. must have been supplied to Govt. departments in last (05) five years. Also, minimum 03 (three) such control systems must have completed at

least 15000 operating hours individually in last 03 (three) years and presently must be in 'operation'. Adequate documentary proof regarding all the above points must be submitted along with the technical part of bid document without which the submitted tender of the bidder will not be accepted at this end.

- In addition to the above, the bidder must furnish Certificate from their clients, in original, regarding the performance and control & protection reliability of the supplied control system. The minimum number of such document is 05 (five) and also must be of the same control system as offered in this tender.
- Documentary evidence of minimum 03 (three) nos. after sales service, for instance, supply of spares of the installed control system during last 03 (three) years shall have to be furnished along with the technical bid. Also, bidder must have sales and service centre in India and the details of such centre to be furnished along with the technical bid.

(E) SCOPE OF WORK:

- i) *The work scope for executing the Up-gradation of 01 (one) no. Speedtronic Mark-IV Gas Turbine Control System with a state of the art Gas Turbine Control System at Phase-II Power House of LTPS has been detailed in Annexure-1 of this tender. The bidder has to abide by all the clauses stipulated in the above mentioned document in full or any amendment thereafter by APGCL.*
- ii) *Supply of Mandatory Spares of the Control System for 05 (five) years period.*

(F) TERMS & CONDITIONS:

The bidder must adhere to all the below mentioned clauses of this tender document and also, the tender must be submitted as per instructions given in clause G(3) below, in the absence of which the submitted tender of the bidder may not be considered for evaluation at this end. However, in case of deviation of any tender document clause by the bidder, the same must be stated clearly as per the format given below:

EXCEPTION AND DEVIATION PROFORMA

Sl.No.	Ref of Bid Document		Subject	Deviations
	<i>Page No.</i>	<i>Clause No.</i>		

In case the bidder fails to state the deviation(s) clearly as per the above format, it will be presumed that the bidder has accepted all terms and conditions of this tender document. Also, acceptance/rejection of bidder's deviation(s) shall be at sole discretion of the Undersigned/APGCL.

The clauses under the head-'Terms & Conditions' are given below:

1. Firm Price:

The basic price(s) quoted by the bidder shall be firm without any variation in any way till completion of the work in full. The bidder must state all the present taxes & duties, freight, etc., as applicable, clearly in the Price-Bid of the submitted tender which may change from time to time as per Govt. norms.

2. Terms of Payment:

- a) Supply Part: 70% payment (including all taxes & duties) shall be made by APGCL through Letter of Credit subject to fulfillment of Performance Bank Guarantee Clause of this tender. APGCL shall open an irrevocable and confirmed LOC in favour of

bidder/contractor through nationalized bank immediately on order acceptance by contractor/bidder and subject to receipt of Performance Bank Guarantee from the bidder/contractor. Balance 30% payment shall be released after 60 (sixty) days of commissioning of the control system with operation of the GT Unit subject to fulfillment of the penalty clause 'F-6' as stated below.

b) Work Part: 90% payment with all taxes & duties shall be released after successful installation, testing & commissioning of the supplied Control System and other equipments as per the Clause E-(Scope of Work) of this tender. Balance 10% payment shall be released along with the supply part after fulfilling the penalty clause ('F-6') as stated below.

3. Guarantee:

The Control System along with all/any other additional item(s) supplied by the bidder shall be guaranteed for a period of 12 months from the date of installation or 18 months from the date of receipt whichever is earlier. Free replacement of the materials shall have to be made for any defect/improper functioning that may develop under normal use during the guarantee period. The free replacement should be made within a reasonable time period as determined and directed by the APGCL authority.

4. Delivery Period and Commissioning Time:

The delivery period of the ordered materials is **180 days** from the date of issue of formal work order. The materials shall be delivered at LTPS site. Liquidated damage due to delay in delivery shall be levied as per the Liquidated Damage Clause of this tender.

For installation and commissioning work of the supplied control system and other equipments supplied along with the control system, APGCL and the Contractor/Bidder shall mutually decide on the start date of the work. The scheduled major overhauling period of 25 days will be availed preferably for erection and commission of the new control system. The entire installation and commissioning work shall have to be completed within a period of 14 (fourteen) days from the start of the work. However, commissioning of the control system shall have to be matched with completion of major overhauling of the GT Unit. For the above purpose, bidder shall submit a detailed work schedule for carrying out of the job which must include day wise break-up of the jobs to be executed for the work.

5. Performance Assurance:

The bidder is to furnish compatibility and performance assurance of the control system with the existing Frame-V GE Gas Turbine Unit as also stipulated in clauses C & D of this tender. Malfunctioning or problem, if any, of the new control system will be corrected by the successful bidder within the scheduled completion period. Failure in proper performance of the control system will attract penalty clause as stated below. So, bidder is requested to go through the existing control system (total combined cycle operation) before submission of bid.

6. Penalty Clause:

Balance 30% payment against supply part shall be retained by APGCL for 60 (sixty) days of operation from the date of commissioning with the new control system. In case of failure in achieving proper performance during the stipulated commissioning period, an amount of Rs. 10.0 Lakh per day subject to the maximum of Rs 100.0 Lakh will be deducted from the retained amount of 30% payment.

7. Performance Bank Guarantee:

On receipt of the formal work order, the successful bidder shall have to furnish a Performance Bank Guarantee for an amount equivalent to 10% of the total order value including taxes and duties before opening of L.C. as per Clause No. 'F2'.

The BG shall be released after expiry of the Guarantee period as mentioned in Clause 'F3'.

8. Liquidated Damage:

In case of delay in supply of ordered materials beyond the delivery period as mentioned in clause 'F4', a penalty @1% (one percent) of the total value of the undelivered materials or materials delivered late per week delay subjected to maximum of 10% (ten percent) of the total value of the undelivered material will be imposed upon the bidder/contractor. This is, however, subject to Force Majeure clause as given in "General Condition for Supply & Erection of APGCL". The payment of liquidated damage shall not in any way relieve the Bidder/Contractor from any of its obligation to complete the supply work or from any other obligation and liabilities of the Bidder/Contractor.

9. Validity of the Offer:

The Offer shall be valid for a period of 180 (one hundred eighty days) from the date of opening of the technical bid.

10. Transit Insurance:

Bidder/Contractor is to dispatch the materials duly insured up to the destination against loss/ damage in transit at their cost. APGCL will discharge the consignee's responsibility only. Any transit damage / loss/ pilferage/ non-delivery by the carriers etc. will be bidder's responsibility and will have to be made good by the bidder/contractor within 30 days of intimation by the consignee without waiting for settlement of claim with their underwriters.

11. Packing:

The dispatched materials shall be packed suitably by the Bidder/Contractor to withstand any rough handling during transit. Considering the tropical atmosphere at LTPS site, the successful bidder/contractor is to take all necessary steps for proper packing of the electronic system including cards and modules during transit and storage at site.

12. Mandatory documents:

The bidder must furnish the following documents along with the technical bid without which the submitted tender may not be considered for evaluation at this end:

- a. Duly signed & sealed copy of APGCL Tender Document.
- b. Copy of PAN Card.
- c. Copy of valid Sales Tax Registration Certificate and Service Tax Registration Certificate of the bidder's Firm.
- d. Documents related to bidder's eligibility and past experience as per clauses C & D of this document.
- e. Documents related to bidder's Firm: Certificate of registration of the Firm (in case of Solo Proprietor)/ Partnership Deed (in case of LLP)/ Certificate of Incorporation' together with Memorandum / Articles of Association (in case of Company), whichever is applicable.

13. Clarification and Additional Information:

During evaluation, APGCL may request bidder for any clarification on the submitted bid and/or documents related to the tender. Bidder shall submit the sought clarifications and/or document(s) within stipulated time period as determined by the undersigned. However, seeking clarification and document(s) during post-bid evaluation shall be on sole discretion of APGCL.

14. Tender fee & Earnest Money Deposit (EMD):

For the downloaded Tender document from APGCL's website, the bidder must submit the requisite **tender fee and EMD alongwith the Technical Bid**. Bid received without requisite tender fee and EMD will be rejected. EMD of Rs. 10,00,000/- (Rupees ten Lakh only) in the shape of Demand Draft in original of

any Nationalized or Scheduled Bank of RBI shall be submitted as Earnest Money, duly pledged in favour of the Deputy General Manager (F&A), APGCL, Guwahati-1. APGCL will refund the Earnest Money of the unsuccessful bidders directly to the bidders within a reasonable period of time without any interest.

15. Technical Literature:

The bidder shall furnish technical literature of their offered product along with the technical bid. The technical literature/manual must contain detailed technical specifications and description of the offered product(s). Bid received without technical literature/manual are liable for rejection.

16. Drawing and Documents:

Successful bidder is to submit 02 (two) sets of detail technical documents of the control system within 20 (twenty) days from the date of issue of the LOI or the Order for approval from APGCL. The technical documents/manuals should include the following as minimum:

- a. HMI screens.
- b. Device summary.
- c. Control specifications
- d. Loop wiring drawings.
- e. Site configuration data.
- f. Six copies of operation and maintenance manuals for the new systems and data sheets for all supplies for GPD approval.

17. Factory acceptance test:

Factory acceptance test shall be carried out at vendor's works. Bidder shall submit the FAT procedure on placement of Order. The FAT for the control system will be intended to review all the aspects of the control system operation and design, testing shall include all hardware and system software. Expenditures like travel, accommodation and local transportation are to be incurred by the bidder.

18. Test Certificate:

Manufacturer's Test Certificate of the supplied items must be submitted along with the materials.

19. Training:

The successful bidder shall arrange and provide training to at least 05 (five) personnel of APGCL at vendor's works regarding the operation and maintenance of the offered control system. The training program shall be conducted immediately after placement of 'confirmed work order' from APGCL and shall be fully at bidder's expense. APGCL shall not bear any additional charge in regards to this training.

20. OWNER'S RIGHT TO ACCEPT OR REJECT A BID:

APGCL reserves the right to accept a bid other than the lowest and to accept or reject any bid in whole or part, or to reject all bids with or without notice or reasons. Such decisions by APGCL shall bear no liability whatsoever consequence upon such decisions.

21. Award of Supply:

- a) The bidder whose bid is accepted by APGCL shall be issued Confirmed Order/Letter of Intent prior to expiry of bid validity. Bidder shall confirm acceptance by returning a signed copy of the Order within 15 (fifteen) days from the date of issue of Confirmed order.
- b) APGCL shall not be obliged to furnish any information / clarification / explanation to the unsuccessful bidders as regards of non-acceptance of their bids. Except for refund of EMD (without interest) to unsuccessful bidder, APGCL shall correspond only with the successful bidder.

22. Arbitration Clause:

All disputes and differences whatsoever shall arise between the Purchaser and the Contractor/Bidder out of or relating to the work shall be settled by arbitration as per "General Conditions of Supply and erection of APGCL". The venue of arbitration shall be at Guwahati, Assam.

(G) GENERAL INSTRUCTIONS TO BIDDER:

1. One set of Bidding document (Tender document) will be issued to intending bidder on submission of Rs. 5000/- (Rupees Five thousand only) in the shape of Demand Draft/ Banker's Cheque duly pledged in favour of the **Deputy General Manager (F&A), APGCL, Guwahati-1**. The Tender document may also be downloaded from the APGCL's website (www.apgcl.org) in which case the Tender fee has to be submitted along with the Technical Bid in the shape of Demand Draft / Banker's Cheque duly pledged in favour of the **Deputy General Manager (F&A), APGCL, Guwahati-1**.

2. The bid shall be completed in two bid system as detailed below:

Technical & un-priced commercial part – Technical bid.

Priced commercial part – Price bid.

a. **Technical and Un-priced Part – Technical Bid:**

This part shall contain technical and commercial (Un-priced) bid and shall have to contain the following as mentioned below:

- Signed and sealed copy of Tender document and Earnest Money Deposit (EMD) in original and its details.
- Power of Attorney in favor of authorized signatory of the Bidding document.
- Technical and Commercial part of bidder's Offer. Page no., bidder's sign & seal must be provided on each page of the bidder's offer.
- All requisite documents as per Clause 'F' of this tender document.
- Any other relevant document as required for this tender.

Techno-commercial bid disclosing price shall be summarily rejected.

b. **Priced Commercial Part – Price Bid:**

Priced commercial part shall contain "Offered Price" dully filled in two copies i.e. one ORIGINAL COPY and one DUPLICATE COPY, shall be submitted. Priced part shall have to include all taxes and duties. No stipulation, deviation, terms and conditions, presumption, etc shall be stipulated in Priced part of bid. APGCL shall not take cognizance of any such statement and may at their discretion reject such price bids. **Also, price quoted by the bidder must be in INR.** Page no., bidder's sign & seal must be provided on each page of the bidder's offer.

3. **Submission of Bid:**

Technical & Un-priced and Priced part must be submitted in **two separate sealed envelopes**. The two sealed envelopes of both un-priced and priced parts shall have to be put to an outer cover which is also to be sealed. The outer cover should duly bear the Tender Number, date and time of opening of the bid along with address of the office.

Part-I: Technical and un-priced part:

The envelope shall have following information clearly written on the outside of the envelope, failing which APGCL will assume no responsibility for the misplacement or premature opening of the bid.

(Part – I: Sealed Technical and un-priced part – Technical Bid)

Tender Name:

Bid No:

Due date & time of opening:

From (Name & address of Bidder):

Note: Original Earnest Money Deposit (EMD) shall be enclosed in this part.

Part-II: Priced Part:

This part of the bid shall contain the Price bid with Offered Price of the item filled in all respects and other information specially requested for submission of price

part. The following information shall have to be clearly written on outside of the envelope, failing which APGCL will assume no responsibility for the misplacement or premature opening of the bid.

(Part-II: Priced Part – Price Bid)

Name of Tender:

Bid No:

From (Name & address of Bidder):

Note: This part of Bid will be submitted in original plus one copy in duplicate.

4. Date, Time & Place of Submission:

- i) Bid must be submitted by the due date and time mentioned in the Notice Inviting Tender or any extension thereof as duly notified in writing by APGCL at the following address. Address to which bids are to be sent (by Speed Post/Courier/Regd. Post/By Hand, etc):

**The Chief General Manager (Gen), APGCL, Bijulee Bhawan,
3rd Floor, Paltan Bazar, Guwahati – 1**

- ii) **Bid received after the time and date fixed for receipt of bid is liable for rejection.**

Pre-Bid Discussion: During pre bid discussion, Techno-commercial discretions with bidder shall be arranged. If needed, bidder shall depute authorized representative(s) for attending the discussion. The representative(s) attending the discussions shall produce authorization from the organization to attend the discussions and sign the minutes on behalf of the organization. The authorized representative(s) must be competent and empowered to settle all technical and commercial issues. On the basis of pre bid discussion, specification(s) may be changed which will be intimated to all the participating bidders.

The pre-bid discussion shall be held in the office of the General Manager, LTPS, APGCL, Maibella.

BID Opening:

a) Opening of Techno-commercial & Un-priced Part of Bid:

- i) On the date and time mentioned in 'Notice Inviting Tender', the Technical and Un-priced Commercial Part will be opened in the office of the Chief General Manager (Gen), APGCL, Bijulee Bhawan, 3rd Floor, Paltan Bazar, Guwahati – 1
- ii) In the event the specified date of bid opening is declared a holiday for APGCL, the bid shall be opened on the next working day at the specified time and location.
- iii) Bid of the bidder who submits the required EMD shall be taken up for detailed evaluation.

b) Opening of Priced part of the Bid:

Price Part of submitted will be opened of only those bidders whose bids are considered **Techno-commercially acceptable**.

5. BID Evaluation Criteria:

a) Techno-commercial Part:

- i) The Techno-commercial Part of bid shall be evaluated as per bid evaluation criteria (BEC). The bid must be accompanied with EMD as specified in the tender.
- ii) Bidders must ensure that complete bid along with all details as sought are submitted as per requirements of this tender document.
- iii) If any of the clauses of the Bid Rejection Criteria/ Bid Evaluation Criteria (BEC/BRC) contradict the clauses of the General Terms And Conditions for Tender of APGCL elsewhere, those in the BEC/BRC shall prevail.

b) Price Part:

The 'Offered Price' and its break up quoted by the bidder shall be taken up for evaluation on overall basis. Price bids containing additional qualifications not mentioned in Techno-commercial Part of the bid shall be summarily rejected.

6. Bidder must fill-up and submit the 'Annexure-A' attached with this tender document along with the signed copy of the tender document in the technical part of the submitted bid.
7. Consignee:

The General Manager,
Lakwa Thermal Power Station,
Assam Power Generation Corporation Ltd,
Maibella, P.O. Suffry-785 689,
Dist. Sivasagar, Assam,
Email: gm-ltps@apgcl.com

The undersigned reserves the right to accept or reject any or all of the bids without assigning any reason thereof. He is not bound to accept the lowest rate also.

Encl. Annexure-A & 1.

-Sd-
Chief General Manager (Gen),
APGCL, Guwahati

ANNEXURE – A

TECHNICAL BID

The bidders are requested to ensure that the following points/aspects in particular have been compiled within their offer failing which the offer is liable to be rejected.

1. Please tick (✓) the box, whichever is applicable, and cross (X) the box(es), whichever is/are not applicable (NA).
2. Please sign on each sheet.
3. This "Bid Information Sheets" duly filled in must be submitted along with the offer.

(A) COMMERCIAL

1.0 Whether requisite tender fee has been paid?

YES	NO	NA
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2.0 If so, furnish the following

- i) Demand Draft no. & date:.....
- ii) Name of the Bank:
- iii) Value:
- iv) Period of Validity:

3.0 Earnest Money Deposit (EMD):

i) Whether requisite EMD has been enclosed?

YES	NO	NA
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ii) If yes, furnish the following

- a) Name of the Bank:
- b) Value:
- c) Name:
- d) Date of Issue:
- e) Period of Validity:

4.0 Whether the period of validity of the offer is as required in the tender document?

YES	NO
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5.0 If not, mention the extent of variation:

(You can use extra sheet also)

Extent of variation

6.0 Has the bidder given the details of parties to whom the bidder has supplied materials in past:

YES	NO	NA
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7.0 Is the offer being sent by Regd. Post, Courier Services or proposed to be dropped in Tender Box?

Sent by Regd. Post

YES	NO
-----	----

YES	NO
-----	----

Sent by Courier Services

Dropped in Tender Box

YES	NO
-----	----

8.0 Has it been ensured that there is no overwriting in the tender? Have corrections been properly attested by the person signing the tender?

YES	NO
-----	----

9.0 Has the tender been prepared in sufficient details clearly so as to avoid post tender opening clarifications?

YES	NO
-----	----

10.0 Acceptance of the following clauses in to:

i) Guarantee clause:

YES	NO
-----	----

ii) Performance Bank Guarantee clause:

YES	NO
-----	----

iii) Terms of Payment clause:

YES	NO
-----	----

iv) Delivery Period including Liquidated damage clause:

YES	NO
-----	----

v) Arbitration clause:

YES	NO
-----	----

(B) TECHNICAL

1.0 Whether necessary technical literature/catalogue has been attached with the offer?

YES	NO
-----	----

2.0 Whether the product(s) quoted bear(s) 'ISI' or equivalent quality monogram?

YES	NO
-----	----

3.0 Whether the materials being offered fully conform to the tender technical specifications?

YES	NO
-----	----

4.0 If not, specify the extent of deviation and how it is suitable to APGCL's requirement:
(Use separate sheet to explain)

YES	NO	NA
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(C) BIDDER'S PAST SUPPLIES PROFORMA

Sl. No.	NAME AND ADDRESS OF CLIENT(S)	BRIEF DESCRIPTION OF SUPPLIES	ORDER VALUE	REMARKS
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NOTE: Relevant documents from client to be enclosed along with the above proforma.

(D) BIDDER'S INFORMATION PROFORMA

1.0 Status of the Bidder:

Manufacture	Distributor	Re-seller
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.....
Signature and Seal of the Bidder

PRICE BID

1. Tender No.:
2. Tender Name:
3. Due Date:
4. Validity of the Bid:
5. Delivery Period:
6. Payment Terms:

(A) Supply of Materials Part:

Sl. no.	Particulars	Rate (INR)	Amount (INR)	Remarks
1.	Quoted Price of the new control system:			
2.	Quoted Price of other equipments/instruments or field devices			
2.	Taxes & Duties (if any):			
3.	Other Charges (if any):			

(B) Work Part

Sl. no.	Particulars	Rate (INR)	Amount (INR)	Remarks
1.	Total Quoted Price of installation & commissioning of the new control system.			
2.	Taxes & Duties (if any):			
3.	Other Charges (if any):			

NOTE:

1. The above prices shall be firm without any variation in any way till completion of the work in full.
2. Statutory charges/taxes & duties, freight, etc. which will not be borne by the bidder must specifically be indicated in the above format, failing which the bidder shall bear the same and APGCL will not be liable for payment of such charges.
3. Use additional sheets if required.

.....
Signature and Seal of the Bidder

Price Break-up of Supply Part

Sl. no.	Particulars	Rate (INR)	Amount (INR)	Remarks
1.	Price break-up of individual items of the control system and other equipments/devices			
2.	Taxes & Duties (if any):			
3.	Other Charges (if any):			

N.B. Use separate sheet if required.

List of mandatory spares:

Sl. No.	Mandatory Spares

Note: Price of the mandatory spares must be the same as that stipulated in the price break-up section given above.

.....
Signature and Seal of the Bidder

Annexure-1

Scope of work for Up-gradation of 01 (one) no. GE Speedtronic Mark-IV Control System at Phase-II Power House of LTPS along with interfacing with the DCS of STG Unit

A. General:

1. Control system Up-gradation work shall be a turnkey job and shall include design, supply, installation and commissioning of new gas turbine control system along with other equipments as per this tender.
2. The new gas turbine control system must be a state of the art control system and have to be apposite for monitoring, controlling and protection of Frame-V Gas Turbine Units of GE/BHEL make.
3. The new control system will replace the existing Speedtronic Mark-IV Control System of GT Unit no. 5 at Phase-II Power House of LTPS.
4. The new system shall include all the control, sequencing and protection functionalities such as startup control, acceleration control, speed control, temperature control, fuel control, startup and shutdown control and all the protection controls.
5. The control panel of the new control system will be located in the phase-II control room after replacing the existing control panel of GT Unit no. 5.
6. HMI consisting of desktop PCs and other essential peripherals has to be provided along with the new control system for operator interface as well as for maintenance work.
7. The control system must be a networked control system (NCS).

B. Bidder's Scope of Supply and Work:

Sl. no.	Description	Qty
1.	Design, supply, installation and commissioning of 01 (one) no. state of the art Gas Turbine Control System along with HMI and networking devices for GE/BHEL make Frame-5 Gas Turbine Unit no. 5 at LTPS, APGCL, Maibella. Model of the Gas Turbine Unit: MS 5001. The new control system will be used to replace the existing GE Speedtronic Mark-IV control system of the respective GT Unit.	01 lot
2.	Field Instruments (if any) that might be required to replace the existing field instrument (s) for the purpose of up-gradation and performance enhancement. <i>However, APGCL may or may not go for procurement of these field instruments and the decision shall be at sole discretion of APGCL.</i>	As per requirement

3.	Removal of the existing Mark-IV Control System panel from its present location at Phase-II Power House of LTPS. Note: All field wirings inside the existing Mark-IV panel shall be disconnected by the commissioning personnel of bidder. Placement of new control panel at Phase-II Power House Control Room.	As per requirement
4.	Installation, configuration of the new control system with the specific design configuration of Frame-V specific gas turbine unit of LTPS along with testing, and commissioning of the control system, HMI, networking equipments and field instruments (if any).	1 lot
5.	Connection of all existing field instruments and devices (pressure switches & transducers, temperature switches, thermocouples, solenoids, vibration & speed pick-ups, etc) to the new control system.	As per scheme
6.	Commissioning spares shall have to be included in the offer and list of the commissioning spares to be furnished to APGCL for their record or the same may be taken back by the bidder after completion of the entire work.	As submitted by bidder
7.	Mandatory spares of the new control system for a period of <u>05 (five) years</u> . Note: For price evaluation these mandatory spares as offered by bidder shall not be considered.	As submitted by bidder

Note:

1. In the 'Supply Part' of the Price Bid, the bidder must include the total prices of supplied items as well as the 'price break-up' of all the individual items/equipments of the control system (for instance-cards, modules, auxiliary relays, and so on), HMI (eg., desktop PCs and all the peripherals), field instruments and any other requisite item/device.
2. *The above stated price break-up of individual items/equipments is mandatory.*
3. The mandatory spare list of the new control system as furnished by bidder for 05 years must include all the vital items/equipments (i.e., Cards, Modules, etc.) that must be maintained as spare for uninterrupted and reliable operation of the control system. These mandatory spares shall not be included in price bidding. Also, the price of these spares shall remain 'Firm' for a period of minimum 03 (three) years from

date of price bid opening and shall be exactly same as that quoted in 'price break-up' section of the control system equipments/items.

4. APGCL may go for procurement of all or some of these mandatory spares along with the control system.

Important Notes

The bidder must strictly adhere to the below mentioned points and any deviation on part of the bidder shall not be accepted by APGCL, unless prior approval has been obtained from APGCL.

C. Supply Part:

1. Gas Turbine Control System Panel consisting of all requisite electronic hardware i.e., Cards, Modules, etc. in complete to execute/carry out all necessary operations and functions related to monitoring, control and protection of the gas turbine unit and must conform to the specific GE Frame-V Gas Turbine architecture at LTPS
2. The new control system must be loaded with all requisite control & protection and system software.
3. **The gas turbine "control and protection architecture" in the new control system has to be preferably similar to that in the existing Mark-IV control system. Any deviation, up-gradation & modification from the same have to be approved by APGCL prior to implementation.**
4. For the above purpose as stipulated in clause no. B (3), the bidder might be required to obtain the necessary details of the existing control & protection schemes/architecture of GT Unit no. 5 from BHEL (OEM of Gas Turbine) and APGCL. **Also, bidder should visit LTPS site prior to submission of tender to examine the existing configuration and to supply suitable configuration of new system so as to retain the existing functionality of the turbine control system along with added features of the new system. The site visit is also required to find out the size & dimension of the existing control panel, distance between the control panel and other panels like GTMCC panel, Generator Control Panel, AVR Panel and so on. During the site visit the bidder and APGCL shall jointly determine the requirement of replacement of field cables, shifting of JB (JB-1 &2) locations and other necessary works.**
5. Any deviation in the "control and protection architecture" from that in the existing Mark-IV Control System has to be approved by APGCL prior to implementation. This is to note that it is desired to maintain the Control Logics (for instance-Speed control loop, temperature control loop, and so on) in the new control system as those in Mark-IV Control System of the concerned GT Unit. The vendor is to ensure compliance of the configuration of their offered control system with the control architecture of the Mark-IV control system with incorporation of the upgradation by their own.

This may be noted here that in case of 'major' deviation up-gradation & modification in the "control and protection architecture" from that in the existing Mark-IV Control System for GE Frame-V Gas Turbine Unit, the offered product i.e., the new control system **must fully confirm the criteria** as stipulated in Clause C (i) of the tender under the heading-"Eligibility of Offered Product". Also, in such case of technical deviations, mere fulfillment of the above stated eligibility criteria may not qualify the offered control system as 'technically acceptable'. The entire matter shall be at sole discretion of APGCL.

6. The new control system must have existing GE Speedtronic Mark-IV type capabilities, features, input/output capabilities as well as the additional requirements as specified to be implemented in the new control system.
7. The new control system must be accompanied with HMI which will be installed in the same control room as the control panel. The HMI shall consist of Desktop PCs loaded with its Operating System, HMI software, and peripherals that will be required for its implementation and functioning. The interface must consist of both Operator Workstation and Maintenance Workstation and must have facilities and scope for viewing real time logic diagrams and diagnosing of alarms and faults.
8. The basic minimum system requirement on HMI part shall be as follows:
 - a. One engineering workstation with HMI functionality.
 - b. Two operating work stations.
 - c. One high resolution colour laser jet printer.
 - d. High speed dot-matrix printer for alarm printing.
 - e. The new GT HMIs, EWS shall be supplied with 21" colour LED monitor and shall be table-top console based.
 - f. The new HMI must have all the required hardware and software.
 - g. All the HMIs should have proper trending, alarming and logging facility.
 - h. All the HMIs are to be designed for multi-unit operation.
 - i. All the control processors and HMIs are to be hooked up into same unit data highway and should communicate each other. Required hardware for networking to be considered by bidder to implement.
9. The existing 02 nos. of transducers in the gas turbine unit are voltage transducers and may be replaced with 4-20 mA transmitters. The existing voltage transducers are used for: 1. Axial Air Compressor Discharge Pressure Measurement, 2. Inter-Valve gas pressure measurement.
10. Apart from the above, all other existing field devices/Instruments shall be reutilized. Bidder to confirm that all the existing field

devices shall be compatible with the new system. Any non-compatibility issue raised during site visit/commissioning shall be taken care by bidder at no additional cost. Also, the bidder may propose any replacement of other field devices with up-gradation, if any, for improving the operational reliability of the GT unit. However, APGCL may or may not go for replacement of those field instruments and the same shall be decided in due course of time.

11. All equipments for providing Networking functionalities and facilities are to be included in the supply.
12. Natural Gas Flow (fuel) monitoring facility must be available in the new control system.
13. Interlinking with the DCS of the STG Unit will be required. This will include monitoring of requisite parameters of STG Unit, for instance, status of diverter damper & gallotin gate of the HRSG, MW and so on. In addition, few parameters of GT must be available to the DCS, for instance, GT load, exhaust temperatures, and so on and hence the new control system must be capable of interfacing with the DCS of WHRP.
14. Any other items not mentioned above but will be required for successful installation and commissioning of the new control system shall be at bidder's scope.

D. Work Part:

1. Complete testing, installation and commissioning of the new control system shall be at bidder's scope. For this purpose, competent commissioning personnel/engineer has to be deputed by the bidder at site.
2. Additional man-power comprising of skilled and unskilled labourer may be provided by APGCL upon bidder's request and shall be on chargeable basis. However, it is always preferred to bring particularly skilled labourer by the bidder.
3. The new control system panel will be installed at the same location as the existing control panel. APGCL may provide manpower on chargeable basis to remove the existing control panel at bidder's request. The placement of the new control panel in its location shall be at bidder's scope.
4. All connection works i.e., connecting the field device cables to the control system unit, control system internal connections, Generator Control Panel, AVR and so on shall fully be at bidder's scope. Also, proper wire ferruling and cable tagging to be carried out by bidder.
5. The installation and commissioning of the Workstation i.e., HMI shall be done by bidder in full.
6. Existing field cables shall be retained if found in order. The status of the field wiring shall be accessed by the APGCL and bidder jointly.

7. Installation and commissioning of any upgraded field device as supplied by the bidder shall be done by the bidder.
8. Testing of all major control and protection functionalities of the GT Unit has to be done by bidder in presence of APGCL personnel. In case any of the functionalities fails during testing, the same has to be rectified immediately by the bidder.
9. Hardwired interfacing with the existing Exciter Panel, Generator Control Panel and MCC Panels shall be at bidder's scope. Requisite drawings and details of these panels will be provided by APGCL.
10. The existing GT fire protection system shall have to be interfaced with the new control system and shall be entirely on bidder's scope.
11. All Networking related works shall be at bidder's scope.
12. Interfacing of the new control system with the DCS of STG shall be at bidder's scope. The interfacing work shall include monitoring of requisite GT parameters on DCS and also monitoring of essential STG parameters on the new control system.
- 13. The bidder shall commission the complete system and ensure smooth trouble free operation of the Gas Turbine for 72 hrs. with the newly commissioned control system before handing over to APGCL.**
- 14. Any other work not mentioned above but will be required for successful installation and commissioning of the new control system shall be done by the bidder with no additional cost.**
