

CHHATTISGARH STATE POWER GENERATION COMPANY LIMITED
(A Govt. of C.G. Undertaking)

NO. 03-09/134

Raipur. Dtd 28/02/2026

To,

**The Secretary,
Chhattisgarh State Electricity Regulatory Commission
New Shanti Nagar, Raipur.**

Sub: Additional submission in respect of Petition no. 02 of 2026.

Ref: CSERC's letter no. P No. 02 of 2026/377 dtd 17.02.2026.

Sir,

The desired additional information in respect of Petition no. 02 of 2026, vide captioned letter, is submitted herewith for kind consideration of the Hon'ble Commission please.

Encl: As above.

**CHIEF ENGINEER (C&RA)
CSPGCL, Raipur**

SUBMISSION OF ADDITIONAL INFORMATION

(W.r.t. letter no. P. No 02 of 2026/377, Raipur, Date: 17/02/2026)

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Data Gaps in respect of Petition No. 02 of 2026

1. CSPGCL should provide further details and justification in respect of capital expenditure of INR 21 Crore per unit for the ABVTPS plant pertaining to flexible operation.

CSPGCL SUBMISSION:

CSPGCL very humbly submits that the prayer for this scheme in the instant petition is under “In-principle” approval and the cost mentioned in the write-up portion i.e. 21 Cr/unit is as per the budgetary offer received from the OEM M/s BHEL.

It is further submitted that, as already submitted in the petition (Para no. 89, Page no. 36) that this cost does not involve the additional changes which will have to be incorporated on and the consequential effect on capex due to thermal stresses. Therefore, at this stage, looking to the national scenario and industry trend, neither the complete details are available nor the time frame can be confirmed because all major suppliers capacities are already tied up for new projects. Hence, though principally work is to be done but it is not possible to predict the cost or time at this stage.

In the above context, The copy of budgetary offer and technical offer received from M/s BHEL is submitted as **Annexure-I** and **Annexure- II** respectively.

It is further submitted that, as per the technical offer submitted by M/s BHEL the following works as detailed below are not included within the scope of M/s BHEL:-

- Interfacing of APC (Advance Process Control) with the existing DCS and existing control loop modification and Necessary provisions for signal exchange between existing DCS and APC to be taken care by CSPGCL under guidance of BHEL.
- Associated cabling for APC.
- Laying of network interlinking cable supplied by BHEL.
- Procurement and Erection & Commissioning of certain pressure and DP transmitters and RTD as may be specified by BHEL.
- Procurement and Erection & Commissioning of Thermocouple along with associated cables and accessories.
- **Replacement of BFP recirculation valve would be required.** These are to be procured, erected and commissioned by CSPGCL along with requisite materials.



- Similarly, supply of other accessories like cable, JB's etc, are also not in the scope of M/s BHEL.
- For implementing Switching logic for APC, BHEL will provide modification scheme to accept remote command from APC and the same has to be implemented by CSPGCL in existing DCS.

All these costs will be in addition to the offered cost of Rs 21 Cr / unit.

Additionally, it is submitted that, the installation of remote mounted smart positioner for SADC damper in Boiler area is also required to achieve minimum stable load and recommended ramp rate for flexible operation. The estimated cost for Supply and installation of SADC remote mounted smart positioner is Rs. 2.25 Cr/unit as per the budgetary offer submitted by Cyrus automation India limited (Authorised channel partner of OEM ABB India Ltd). Copy submitted as **Annexure III**. Hence, the above mentioned work is not within the scope of M/s BHEL. Therefore, the expenditure towards the work will also be part of the cost of "Flexible Operation".

As the costs of the above mentioned works are yet to be finalized, CSPGCL is presently not in position to ascertain and submit the firm cost of the complete scheme. From the information available upto this point, it appears that the final cost may be more than Rs 30 Cr per unit, excluding the opportunity cost.

Meanwhile it may be appreciated that the expenditure towards the Techno-feasibility and Economic study is being borne separately by the CSPGCL and does not form part of the cost estimated for the said scheme. The LoI for the study has already been awarded to M/s Steag Energy Services which is costing about Rs. 87.32 Lakhs. Copy is submitted as **Annexure – IV**.

Submitted for kind consideration of the Hon'ble Commission please.

M.Gmail

Annexure-D (72)

Executive Engineer Cnl <eeied1567@gmail.com>

Fwd: Regarding Budgetary Offer for Implementation (supply, Installation & commissioning) of Flexible Operation load in Unit#2 of 2x500MW, ABVTPS, CSPGCL Marwa

SEC&I ABVTPS <secniabvtps@gmail.com>
To: eeied1567@gmail.com

Thu, Feb 27, 2025 at 11:34 AM

Thanks & Regards:**Superintending Engineer (C&I)**

O/o Addl.C.E.(O&M),

2X500 MW, ABVTPS, CSPGCL Marwa.

----- Forwarded message -----

From: Gurpreet Singh Summan <gurpreet@bhel.in>

Date: Wed, Feb 26, 2025 at 5:28 PM

Subject: RE: Regarding Budgetary Offer for Implementation (supply, Installation & commissioning) of Flexible Operation load in Unit#2 of 2x500MW, ABVTPS, CSPGCL Marwa

To: SEC&I ABVTPS <secniabvtps@gmail.com>

Cc: H N Kosaria <chiefengineeramarwa@gmail.com>, aceonm abvtps <aceonm.abvtps@gmail.com>, <pavanim@bhel.in>

Dear Sir,

In reference to the trailing mail our revised budgetary offer including the auto tuning (provided by CSPGCL) for one unit of ABVTPS is as below;

SL	Scope	Description	Price (Ex-works)
1	MANDATORY PART	Adaptive Process Control	INR 14,08,00,000/-
		Low flow operation package for Axial Fans	
		BFP Low Flow operation package. BHEL will furnish the specification for the replacement/Modification of recirculation valve. Supply and installation by CSPGCL.	
		Primary frequency control capability (up to 5% of operating load)	
		En-Rich burners for all 10 elevations. (40 Burners)	
		E&C services	
		Auto tuning of additional loops	
2	OPTIONAL PART	Boiler Stress Monitoring System (BOSMON)	INR 3,95,00,000/-
		Turbine Stress Monitoring System (TSCMON)	

[Quoted text hidden]

As per trailing mail and today's telephonic discussion, a list of control loops which require modification/tuning is attached herewith, please consider a loop which is not covered in flexible operation budgetary offer and provide a revised budgetary offer for flexible operation along

with modification/tuning of attached auto loops.

Thanks & Regards:

Superintending Engineer (C&I)

O/o Addl. C.E. (O&M),

2X500 MW, ABVTPS, CSPGCL Marwa.

Technical offer

Implementation

of

Flexible Operation Solutions

At

1X 500 MW ABVTPS, Marwa

December 2024

Ref No.:BHEL/PS-SSBG/R&M/FOS/FY24



BHARAT HEAVY ELECTRICALS LIMITED

Spares & Services Business Group (SSBG)

(A single window facility for spares, services, retrofits and R&M/LE)

7th Floor, BHEL New Building, Plot 25, Sector-16A, Noida - 201301 (U.P.)

1.0 Background

The increased share of feed-in grid from fluctuating renewable energies- mainly wind and solar- results in complex challenges for the energy system. In addition to other options such as grid and demand side management, flexible conventional power generation plays a key role for ensuring adequate system stability. Therefore, existing coal-fired power plants need to adapt to a completely new operating scenario.

Flexible power plant operation comprises three aspects: Minimum stable low load, recommended ramp rates and frequent load cycling. Most measures for flexibility enhancement aim at Minimum low load operation and high ramp rates. This is very important for provision of residual load and in times of low demand, it is more economical than shutting down the whole plant. The transformation from base-load to flexible operation is a change process. There is no generic concept or single implementation plan for power plants, as each plant has its own specifics, technology requirements and site conditions.

CEA has mandated all thermal utilities to prepare for this new operating flexi regime to achieve this national objective. CEA has also directed BHEL to assess unit flexibility on sample units from its supply of the existing fleet.

BHEL need to carry out detail study of present operating practices and parameters, analyze it and formulate implementation plan to deliver deliverable as mentioned in this offer. To achieve desirable deliverable, BHEL had to engineer and implement necessary measures by additional hardware, required process and control loop tuning, supervise erection and commissioning of hardware, guide and modify operating procedure and practices to achieve desirable deliverable.

2.0 OBJECTIVE

The main objectives of this Flexibility solutions are as below;

- Optimum ramp rate (Maximum & stable) for the unit in the control load range keeping the deviation limits of operating parameters within allowable range (as per Table-I). The trials will be conducted up to 2-3%/minute ramp up/down rate per minute.
- Optimum ramp rate (Maximum & stable) for the unit beyond control load range keeping the deviation limits of operating parameters within allowable range (as per Table-I). The trials will be conducted up to 1%/minute ramp up/down rate.
- Optimum stable low load level up to 40% TMCR with focused supervision of operator.
- Reduction in throttling losses and further enhancing frequency response by implementation of primary frequency control package.
- Stable operation at full & part loads (100%, 80%, 60%, 50%) for collection of process parameters for heat rate assessment
- Online monitoring of life consumption for Steam generator and Turbine.

3.0 KEY DELIVERABLES

Following are the key deliverables to be demonstrated with in operating range of parameters mentioned below for continuous, sustainable and repeatable operation.

PART A

- Ramp up and down rate at 3% / minute (within 70% to 100% TMCR operating range) with operator intervention for mills cut in/out (Minimum 5 min duration in one ramp).
- Ramp up and down rate at 2% / minute (within 55% to 70% TMCR operating range) with operator intervention for mills cut in/out (Minimum 5 min duration in one ramp).
- Ramp up and down rate at 1% / Minute (with 40% to 55% range) with operator intervention for mills cut in/out (Minimum 5 min duration in one ramp).
- Achieving 40% TMCR on sustainable continuous basis, with Focused Supervision of operator, capability improvement of operator, guide for updating SOP and procedure.
- Primary frequency control capability of up to 5% TMCR in control load range.
- Enabling stable & reliable operation of axial fans during low load (no stalling condition at low load).

Ramps can be demonstrated in a certain minimum load range and not to be measured instantaneous. The actual load ramp rate will be limited to available Turbine stress evaluator margin.

Allowable excursion range of operating parameters in operating control load range will be limited to the values as mentioned in Table-1.

Table - I	
Parameter	Variation Limit (Standard deviation)
Steam Temperature	15°C
Drum Level	50 mm
Furnace Pressure	30 mmWC

The deviation limits are to be measured in standard deviation only and set points are to be considered for respective operating condition. The standard deviation limits are applicable in control load range only.

4.0 BHEL APPROACH / METHODOLOGY

Following approach shall be adopted for the implementation;

1. Assessment Test Trials

- Customer to conduct the unit ramp trials, primary response and technical minimum load trial as per BHEL requirement in full auto mode of operation BHEL will provide SOP and Guideline for testing for conducting above mentioned test. The above trials may be required to be repeated to confirm the performance of machine for given conditions of ramping and low load. Tests like Load Ramp up and ramp down test, Low Load Trial & Primary Frequency response can be conducted for unit assessment.
- Team BHEL will witness the above mentioned tests. Further, the trend and required data will be provided to BHEL by customer for analysis and identifying the constraints.
- While initial trials are being conducted in full auto mode and all the existing limitations will be recorded and indicated to the customer. BHEL will advise corrective and remedial actions for equipment and same shall be taken up/implemented by customer.

INPUTS required from Customer;

- A. Historical Operational Data from the utility for Steam Generator & Steam Turbine
 - a) Number of Cold start, warm start & Hot start till date.
 - b) Total Operating hours of the plant.
 - c) Any replacement/repair/modification of critical components during the operation period.
 - d) Metal Temperature and process parameters for each start-up case
- B. Latest uploaded configuration files from DCS.

2. Shutdown Works

- Customer to implement the corrective actions suggested by BHEL in the unit.
- Installation of APC, thermocouples, MTM and other materials required.
- Conductance for short RLA/Replica test for evaluating the base values for BOSMON.

3. Re assessment test/trials

Tests shall be carried out after completing the above activities as mentioned in point 2 above.

4. Demonstration test

- BHEL will commission solutions to meet the required deliverables as per the above scope and fine tune it.
- For the fine-tuning activity, ramp trials in different load range for different set of conditions as per BHEL requirement to be operated. (BHEL to carry out tests with help of CSPGCL)
- After fine tuning activities, final ramp trials will be conducted as per BHEL requirement in the load range of 100% TMCR and technical minimum load operation at Benson point+5%.
- The start of the final trials shall be considered as the effective date of the contract.
- All operating data comparison will be in deviation format from respective set points (design value/operating value).
- Further, these trials will be conducted with a maximum load change of 3% per minute for 5 minutes in a single ramp test due to manual addition and removal of mills. Sufficient stabilization time will be provided between each ramp trials. No addition and withdrawal of mills should be attempted during ramps.
- Final report submission.

5.0 BHEL SCOPE OF SUPPLY & SERVICES

The broad activities would be covered are highlighted as below:

1. Assessment Test Trials. BHEL will depute the engineer at site. However, test trials to be conducted by CSPGCL as per BHEL requirement in the control load range in full auto mode operations.
2. Advisory, guidance and supervision can be given for Trial tests and implementation of solutions
3. Supply of Advance Process Control (APC) server: suitable Panels with Server (Workstation) to be installed in the plant control room. — *within scope is there?*
4. The network interlinking cable between existing DCS and APC will be supplied by BHEL. — *termination?*
5. Low flow operation package for Axial Fans. All the field instruments for this will be supplied by BHEL. (per fan : PT-04n nos., DPT-02 nos., RTD PT 100-02 nos.) Supply of other accessories like cable, JB's etc. shall be in CSPGCL scope.
6. Modified burners (en RICH) for flame stability at low load operation at all the elevations. BHEL will supply the burners for GCV range of 2800-3000 KCAL/KG. *low NOx?*
7. Boiler Stress Monitoring System (BOSMON) – All the TC's along with pads and other instruments and associated drawings shall be supplied by BHEL. – **Optional.**
8. Turbine stress Monitoring System (TSCMON) - **Optional** *existing?*
9. Estimation of baseline life consumed based on historical data & replica studies (Refer Annex 3)
10. BFP Low Flow operation package, if required, BHEL will furnish the specification for the replacement/Modification of recirculation valve. BHEL will furnish the specifications to CSPGCL. Procurement, erection & commissioning shall be in CSPGCL scope. However, supervision shall be provided by BHEL.
11. Primary frequency control capability of up to 5% of operating load. Complete scope is with BHEL.
12. Final Report Submission.
13. Supervision and Monitoring of main DCS parameters for any excursion - All parameters should be within permissible range. Excursion to be noted – e.g. Metal temp & its rate of rise-down/min, MSP rate of rise/down/min etc.
14. O&M guidelines for flexible operations.
15. Maintenance Schedules
16. Complete erection and commissioning of the supplied items/equipment's.
17. CSPGCL to note that the installation of the En-RICH burners will be done through AOH/COH. Scaffolding scope shall be in CSPGCL scope.

COMMISSIONING ACTIVITIES:

- Provision of necessary software to facilitate the building of APC logics.
- Implementation of Advance process logic.
- Mapping of field data and suggesting switching logic.
- Demonstration of logics.
- Remote access for implementing & tuning of solutions.
- Tuning of required system and major control loops.

NOTE:

There shall not be any deputation of BHEL representative for Tuning/ Supervision/guidance/Suggestion outside the scope of this offer. Further, customer will conduct ramp trials as per BHEL requirement and in case of non-availability of trials due to customer's constraint the redeployment charges shall be applicable.

EXCLUSIONS:

- The Existing control loop modification/tuning.
- Servicing of existing DCS & field equipment.
- Any supply, installation & servicing for modification of BFP recirculation valves.
- Preparatory Works by customer, Tools and Consumables for Replica study.

6.0 Customers Scope of work

- Customer will conduct ramp trials as per BHEL requirement in the control load range in full auto mode of operation. Technical minimum load operation at 40% TMCR operation, Primary response trial, etc. It should be under BHEL Supervision/guidance/suggestion.
- Consistency in coal quality should be ensured during load ramp or low load trials. Coal used should be within the design limits.
- Procurement and E&C of pressure & DP transmitters and temperature transmitters required for conducting the tests. BHEL shall provide all details for specification of pressure/temperature/DP transmitters. BHEL shall provide accuracy level/location of transmitter along with nos. of transmitter required. E&C shall be done under supervision of BHEL.
- Interfacing of APC with existing DCS and Existing control loop modification as per guidance of BHEL. Necessary provisions for signal exchange between existing DCS & APC to be taken care by Customer under guidance of BHEL. Signal exchange list will be provided by BHEL. BHEL shall provide only supervision/guidance/suggestion during entire activity.
- UPS power supply to DCS Panel /workstation/server will be from unit power supply to be arranged by Customer. The cable and accessory required for same shall be provided by Customer and sizing details will be shared by BHEL during detailed engineering.
- For APC: Associated cabling work to be taken care by Customer under commissioning supervision by BHEL.
- Laying of network interlinking cable supplied by BHEL under erection supervision by BHEL.
- Local transportation (movement within plant and between accommodation and plant), accommodation at site to be provided by customer to BHEL officials free of any cost.
- Assisting manpower with required T&P's should be provided by Customer during commissioning activities free of any cost.
- In order to build on the logics and carry out trial of Axial Fans for the low load performance checking, certain pressure & DP transmitters and RTD would be required. The details of the transmitters and RTD will be specified by BHEL & these are to be procured, erected & commissioned by customer along with the requisite materials like cables and other accessories as required.
- Thermocouples along with associated cables and accessories will be required to be installed and hooked to existing DCS for monitoring the stress at Boiler Headers. Nos and details of the same will be provided by BHEL which will be procured, installed and commissioned by customer.
- Support and chemical requirement for short RLA as per Annexure to be provided free of any cost.
- In order to build on the logics and carry out trial of BFP for the low load performance checking, replacement of BFP recirculation valve internals along with actuator or entire valve along with actuator would be required. These are to be procured, erected & commissioned by customer along with the requisite materials.
- During all the trials data collected and coal & flue gas analysis to be shared with BHEL.
- Coal fineness data of various coal mills during the trial as per requirement to be shared with BHEL.

- Interfacing capabilities with existing DCS through Logic modification to accept remote command from APC (switching logic). For implementing Switching logic for APC, BHEL will provide modification scheme to accept remote command from APC and the same has to be implemented by customer in existing DCS under supervision & guidance of BHEL experts.
- Provision for reliable internet connectivity for remote access to APC shall also be provided free of any charges.
- Any kind of servicing of field equipment, DCS and its instrumentation are in the scope of Customer.
- Any other supply or services which is not covered under BHEL scope.

NOTE:

The information contained regarding the trials is proprietary to Bharat Heavy Electrical Limited and may not be used, reproduced or disclosed to others except as specifically permitted in writing by Bharat Heavy Electrical Limited. The recipient of this document, by its retention and use, agrees to protect the same and the information contained therein from loss or theft".

COMMERCIAL TERMS

1. Duration of the overall execution

- Supply completion for APC = **16 weeks**
- Services pertaining to installation assistance and test conductance = **08 weeks**
- Submission of report = **08 weeks** from the date of receipt of all requisite inputs from customer.
- All the above activities shall be completed as per the required schedule of **8 months** from date of confirmed order from customer.
- Report is submitted after the scheduled overall period of **08 months**.
- Supply of En-Rich Burners : **12 Months from PO**
- Supply and implementation of BOSMON/TSCMON: **12 Months from PO.**

2. Terms of payment are as below;

A. Supply Portion;

- 10 % interest free advance.
- 75% of supply contract price component of the contract price for each identified equipment shall be paid on pro-rata basis upon dispatch of material/equipment from manufacturers works.
- 10 % of supply contract price to be paid on pro- rata basis on completion of facilities including all associated auxiliaries and ancillary works.
- 5% of supply contract price to be paid on pro rata basis on confirmation of guaranteed parameters

B. Service Portion;

- 50% shall be paid on establishing APC network, Powering UP of APC Panel, Servers & OPC PCs & establishing communication between APC & existing DCS through Firewall.
- 20% shall be paid on pro rata basis upon establishment of load ramps.
- 10% shall be paid on running the unit at TML as mentioned in the offer without oil supports.
- 10% on erection of Enrich Burners.
- 5% on pro rata basis on confirmation of guaranteed parameters

6/28/24, 4:49 PM

Gmail - Regarding budgetary offer for remote mount smart positioners for SADC dampers

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Executive Engineer Cnl <eeied1567@gmail.com>

Regarding budgetary offer for remote mount smart positioners for SADC dampers

Executive Engineer(C&I) <eeied1567@gmail.com>

Sat, May 4, 2024 at 1:26 PM

To: Debdatta Mondal <debdatta@incyrus.com>

Dear sir,

ap per your visit on dtd. 30.04.2024 at marwa site and observations made for feasibility for installation of remote mount smart positioner in SADC system please provide revised budgetary offer ASAP. Your early response is highly appreciated.

Thanks & Regards

Executive Engineer(C&I)

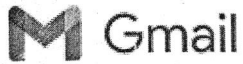
O/o The S. E. (C&I)

2x500 MW, ABVTPS

Chhattisgarh State Power Generation Company Limited

Janjgir-Champa, Chhattisgarh, India-495671

[Quoted text hidden]



Executive Engineer Cnl <eeied1567@gmail.com>

Regarding budgetary offer for remote mount smart positioners for SADC dampers

Debdatta Mondal <debdatta@incyrus.com>

Wed, Jun 12, 2024 at 3:56 PM

To: "Executive Engineer(C&I)" <eeied1567@gmail.com>

Cc: Arup Ratan Bose <arup@incyrus.com>, secniabvtps@gmail.com

Dear Sir,

Thank you very much for the kind courtesy extended to us during our corresponding site visit at your plant on 30.04.2024 and based on our corresponding technical discussion with you & your team, we understand the exact requirement. We have incorporated all the changes in our revised offer. You are requested to please consider the attached offer for your further evaluation process.

Meanwhile, kindly revert in case of any further clarification/ confirmations required on this.

We aim to continuously provide a fast and efficient service.

With Regards,

Debdatta Mondal

Cyrus Automation India Limited

15 N/C, Block-A, Humayun Kabir Sarani, New Alipore,

Kolkata-700 053, West Bengal; INDIA

Phone: +91 33 3544 1099/ 1098/ 1100

Mobile: +91 99039 67190

E-Mail: debdatta@incyrus.com; Web: www.incyrus.com

CIN: U45400WB2010PLC154268

CYRUS

(An ISO 9001:2015 Company)

[Quoted text hidden]

2 attachments

 **R1_Budgetary Offer_430_SADC Remote Positioner System_ABVTPS_20240612.pdf**
684K

 **GA Drawing_Remote Positioner Cabinet.pdf**
459K



An ISO 9001:2015 Company

Customer: CSPGCL_ABVTPS_Marwa
RFQ No.: E-mail Dated 01.09.2023
Offer No.: CAIL/2324/DM/0430/R1
Page: Dated 12.06.2024
1 of 11

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To

The Executive Engineer-C&I

O/o The S.E. (C&I)- 2*500MW

Chhattisgarh State Power Generation Company Ltd.

Atal Bihari Vajpayee Thermal Power Station

Janjgir-Champa, Chhattisgarh, PIN-495 671

Budgetary Offer

Cc:

Mr. Lochan Singh Sidar (SE-C&I)

CSPGCL, ABVTPS

E-mail: secniabvtps@gmail.com

Your RFQ Reference

E-mail

E-mail

Date

01.09.2023

04.05.2024

Our Reference

CAIL/2324/DM/0430/R0

CAIL/2324/DM/0430/R1

Date

14.10.2023

12.06.2024

For the attention of

Mr. D.R. Bakhla

E-mail: eeied1567@gmail.com

Hand phone: +91 88892 44215

Dealt with by

Debdatta Mondal

E-Mail: debdatta@incyrus.com

Hand phone: +91 99039 67190

Sub: Rev.1 Budgetary Proposal towards Modification Project towards Dismantling of Existing Integral Positioning System and Supply, Installation, Construction, Testing & Commissioning of Newly Supplied SMART Remote Positioners of SADC Application at 2*500MW, ABVTPS of CSPGCL-Marwa.

Dear Sir,

We acknowledge with thanks the receipt of your above cited enquiry which has been routed through us by our Principle M/s ABB India Limited vide their E-mail dt. 08.09.2023.

Thank you very much for the kind courtesy extended to us during our corresponding site visit at your plant on 30.04.2024 and based on our corresponding technical discussion with you & your team, we understand the exact requirement. Referring to the same, we are pleased to submit our revised budgetary offer for Modification Project towards Dismantling of Existing Integral Positioning System and Supply, Installation, Construction, Testing & Commissioning of Newly Supplied SMART Remote Positioners at SADC of 2*500MW at your Atal Bihari Vajpayee Thermal Power Station of CSPGCL on behalf of ABB.

The following documents are submitted herewith for your perusal.

- 1) Annexure- I: Technical Consideration
- 2) Annexure- II: The detail terms & conditions
- 3) Annexure-III: Price Schedule

We hope, our offer is in line with your requirement and wish to receive your most valuable purchase order at the earliest. Meanwhile, please revert back in case you require any further clarification/ confirmations on our offer.

Thanking you and assuring our best services at all times.

Yours faithfully

For **Cyrus Automation India Limited**

Debdatta Mondal

(Team Lead-Sales & Services)



Cyrus Automation India Limited

15N/C, Block-A, New Alipore, Kolkata- 700 053; INDIA

Phone: +91 33 3544 1098/ 1099/ 1100; E-Mail: info@incyrus.com; web: www.incyrus.com

CIN - U45400WB2010PLC154268

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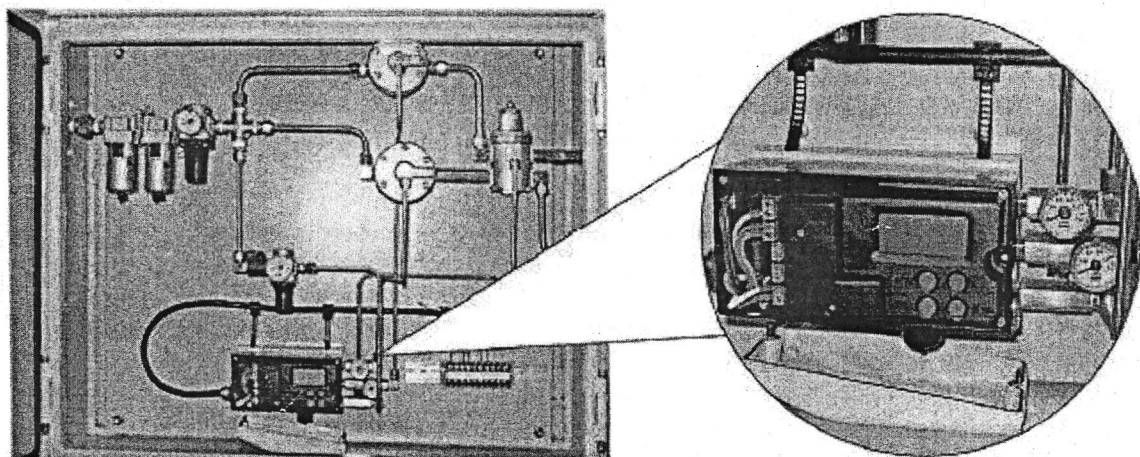
ANNEXURE-I

CYRUS RECOMMENDATION:

Pneumatic actuators are often used in windbox combustion air control & SADC applications due to the specific working environment which is very hot and dusty and with strong vibrations. The average power plant has hundreds of actuators controlling airflow and other variables to help maximize the combustion process and minimize emissions. The ABB positioner is a key part of the pneumatic actuator - it is compact, robust, easy to install and commission, resulting in more efficient boiler operation and reduced costs. The TZIDC SMART Positioner is considered to be the best option for pneumatic actuators used in damper control of the boiler. Many old power plants have old damper actuators that do not respond quickly or accurately to signals from the control system, leading to inefficient combustion. The result is poor heat-rate and undesirable emissions. Upgrading the facilities with low NOx combustion retrofit and oil-free ignition systems has become very common. Improvements like these can result in immediate fuel savings, better steam temperature control, and more efficient combustion. Targeting these application needs and based upon the established and very successful TZIDC intelligent positioner, ABB developed the positioner with remote sensor.

In such boiler plant upgrade projects, ABB recommends TZIDC positioner with remote sensor. The sensor housing is on the damper actuator, and will withstand the high temperature and high vibration of the damper/boiler, and the main control housing is mounted at the nearest control panel. The TZIDC positioner with remote sensor solves the problem of high temperature, and also solves the problem of vibration interference. After operating for more than a year, the TZIDC positioner with remote sensor impressed the customer very much. The above-mentioned problems are no longer present.

In such boiler plant upgrade projects, ABB recommends TZIDC positioner with remote sensor. The sensor housing is on the damper actuator, and will withstand the high temperature and high vibration of the damper/boiler, and the main control housing is mounted at the nearest control panel. The TZIDC positioner with remote sensor solves the problem of high temperature, and also solves the problem of vibration interference. After operating for more than a year, the TZIDC positioner with remote sensor impressed the customer very much. The above-mentioned problems are no longer present.



TZIDC Control Unit mounted in cabinet with filter and regulator

To overcome with the same situation, ABB has the solution to it in which the SMART positioner has been split into two segments, one is remote sensor and other one is Control unit. The remote sensor unit is getting installed on the control valve and the control unit needs to be installed in a remote location where there is no vibration so that control unit sense the position feedback from remote sensor and based on the command receives and feedback, the control unit sends the open/close command to the valve.

ANNEXURE - II**GENERAL TERMS AND CONDITIONS FOR SALE**Basis of Price

The quoted prices are on Ex-works Kolkata, packed basis. These prices are firm but are exclusive of all the relevant taxes & duties as indicated in the price schedule.

Terms of Payment for Supply of Equipment:

- i) Advance 20% Payment along with LOI/PO receipt.
- ii) Balance 80% payment along with full taxes (GST) shall be made against SRV. The payment shall be made after dispatch the materials at site.

Packing and Forwarding

2% Packing & Forwarding will be charged.

Freight and Insurance

Prices quoted are inclusive of freight & Transit Insurance.

Point of delivery:

The equipment will be delivered ex works duly packed as per the standard packing procedures for transport.

Delivery Schedule

The delivery schedule of the complete equipment shall be considered from the date of award of firm and techno-commercially clear purchase order. The delivery schedule will be as follows:

Completion of Supply: Within **24-28** weeks from the date of award of firm and clear purchase order i.e. manufacturing clearance or data sheet approval.

Bank Details:

Banker Name: IDBI Bank
Branch address: 50A, Prince Anwar Shah Road; Multicon Estelle, 1st Floor,
Kolkata- 700 033; India
Account type: Current
Account No.: 1676102000001014
IFSC Code: IBKL0001676
MICR Code: 700259041

Company Details:

Name of the Company	:	Cyrus Automation India Limited
Complete Address of the Company	:	15N/C, Block-A, New Alipore, Kolkata- 700 053; West Bengal, India
GST Number	:	19AAECC1692F1ZN
PAN Number	:	AAECC1692F
TAN Number	:	CALC07660C

Extra at Actual:

Applicable GST shall be charged in Extra at actual. Present rate is @18%.

Our GST No. 19AAECC1692F1ZN

Taxes and Duties

The applicable taxes and duties are indicated in the price schedule. However any other taxes and levies which are payable or may be imposed by central/state government and/or any other statutory authorities and in case we are called upon to pay the same to the state/central government or we have paid the same, such an amount will be to your account and shall be paid by you extra at actual as applicable at the time of dispatch. The documentary proof of this respect will be in the form of certificates from us to the effect that we have to pay or we have paid such a taxes or levies.

Should there be any increase in the taxes & duties other than the indicated amount due to additional budgetary levies/duties imposed till the time of delivery; the same will have to be paid extra by you.



An ISO 9001:2015 Company

Customer:	CSPGCL_ABVTPS_Marwa
RFQ No.:	E-mail Dated 01.09.2023
Offer No.:	CAIL/2324/DM/0430/R1
	Dated 12.06.2024
Page:	10 of 11

Warranty

The supplied materials shall be guaranteed for a period of 18-months from the date of supply or 12-months from the date of commissioning whichever is earlier.

Inspection

Inspection of the material can be carried out at ABVTPS stores.

Force Majure Conditions:

We shall be under no liability if performance of contract on our part is prevented or delayed further in whole or in part due to any of the causes beyond our reasonable control. Various such a clauses are Acts of God, including earthquakes, cyclone, floods, epidemics etc., and industrial disputes and any other circumstances beyond the control of the parties such as fire, war (whether declared or not), extensive military mobilization, insurrection, requisition, seizure, embargo, restrictions in the use of power and defects or delays in deliveries by sub-contractors caused by any such circumstances referred to in this Clause.

Exceptional Circumstances:

In case it becomes difficult for our personnel to continue the work due to reasons beyond their control such as strikes, lockouts, riots, war, warlike conditions, epidemics etc. our personnel shall be sent back irrespective of the state of work progress. All expenses for such a return of the person and redemption shall be to the customer's account.

Validity of Offer

The offer is valid till 60-days from bid opening date.

Price Schedule:

SL	Item Description	Total Qty.	Total Price (₹)
1	SMART Positioner, Double acting with Remote mounted position sensor and Fail freeze action with operating temperature of 80°C for SADC Application. <i>The complete positioner unit to be separated in two parts- i) Feedback Unit with 10-Mtrs remote sensing cable ii) Control Unit (Transmitter Unit).</i> Make-ABB; Offered Model No.: V18345.70.2.0.5.2.1.00.1-M5.....RS....R6	88-Nos	1,79,82,465
2	Local cabinet as indicated, Size: 1200 x 700 x 325 (H x W x D) assembled with 6 Nos. ABB make Positioner Control Unit (Transmitters) from item SL No. 1, Air Filter Regulators of approved make, fitted with necessary air ports and complete with required pneumatic tubing with 6mm-OD tubes, Needle valves and associated compression fittings of SS-316;	12-Nos	
3	Local cabinet as indicated, Size: 700 x 600 x 325 (H x W x D) assembled with 4 Nos. ABB make Positioner Control Unit (Transmitters) from item SL No. 1, Air Filter Regulators of approved make, fitted with necessary air ports and complete with required pneumatic tubing with 6mm-OD tubes, Needle valves and associated compression fittings of SS-316;	4-Nos	
4	Signal Cable (As per BOM) for Signal & Feedback signal	As Req.	
5	Cable Tray (GI Perforated) for signal cable	As Req.	
6	Signal Isolator with Local Cabinet	As Req.	
7	PVC Insulated Copper Tube (6mm OD) for pneumatic air connection	As Req.	
8	Link arrangement	1-Lot	
9	Consumables (Lugs, Ferrule, Teflon tape etc.)	1-Lot	
10	Dismantling, Installation, Commissioning, Demonstration & Training of the upgraded System	1-Lot	6,50,000
	Total Package Price (₹)	1-Lot	1,86,32,465

(Total Package Price: Rupees one crore eighty-six lakhs thirty-two thousand four hundred sixty-five only)

[Signature]



Note:- The above price is exclusive of GST.

- P&F charges @ 2%.
- The overall GST applicable @ 18%.
- Therefore, the estimated cost will be about 2.25 Cr.

[Signature]

**CHHATTISGARH STATE POWER GENERATION COMPANY
LIMITED**

(A Govt. of C.G. Undertaking)

No. 03-01/ 153

Raipur, dt. 06/02/2026

To,

M/s Steag Energy Services (I) Pvt. Ltd.,
A-29, Sector -16, Noida
Mobile : 08383955646
Email : j.singh@steag.in, rd.badsha@steag.in, nk.dwivedi@steag.in

Sub :Letter of Intent (LOI) for “ Techno-feasibility and Economic Study for flexible operation for achieving 55% and 40% Technical minimum Load with required ramp rate at TPP of CSPGCL”.

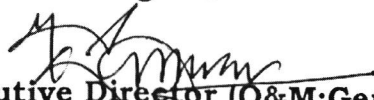
Ref : 01. T.O. Tender No. EW-311/24-25, RFx 8100039773
02. Your response through E-Bidding.
03. Any other correspondence from either sides.

Dear Sir,

With reference to above, the **Letter of Indent (LOI)** is being issued for “ Techno-feasibility and Economic Study for flexible operation for achieving 55% and 40% Technical minimum Load with required ramp rate at TPP of CSPGCL”, with total financial commitment of **Rs. 87,32,000.00 only** (Rs. Eighty Seven Lakhs Thirty Two Thousand Only) including GST @ 18%, on the terms and condition accepted in your offer.

Please note that this LOI is a formal acceptance to your offer only. The detailed order will be issued shortly from this office and execution of order will be done accordingly. Kindly convey your acceptance vide return fax / Email.

With regards


Executive Director (O&M:Gen.)
CSPGCL, Raipur

Copy to :-

- 1) The E.D. (S&P), CSPGCL, Raipur.
- 2) The E.D. (Finance), CSPGCL, Raipur.
- 3) Staff Officer to MD(Gen.), CSPGCL, Raipur.
- 4) Order file.