

TENDER DOCUMENT

TENDER SPECIFICATION No : **BAP : FES: PG TEST 2019 dated : 01 06 2019**

NAME OF WORK:

Conducting Performance Guarantee Test in Electrostatic Precipitator (ESP) at various Power Plants as per laid down procedure. The objective is to determine the collection efficiency, pressure drop and auxiliary Power consumption of Electrostatic Precipitator. The collection efficiency to be calculated based on the dust concentrations at the inlet and outlet of precipitator. The scope of this work involves (A) Measurement of parameters like flue gas flow rate, flue gas temperature, dust concentration at the inlet & outlet of electrostatic precipitator, corona / auxiliary power measurements. (B) Providing of service engineer for the above scope of work.

Issued to: M/s.

PART – I (TECHNICAL BID)



FES DEPARTMENT

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

BOILER AUXILIARIES PLANT

INDIRA GANDHI INDUSTRIAL COMPLEX

RANIPET – 632 406

BHARAT HEAVY ELECTRICALS LIMITED
BOILER AUXILIARIES PLANT
RANIPET- 632406.

FES DEPARTMENT

TENDER SPECIFICATION NO. : BAP: FES: PG TEST 2019

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BOILER AUXILIARIES PLANT, RANIPET- 632406.
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NOTICE INVITING TENDER

Sealed Tenders in TWO PARTS are invited from experienced bidders meeting Qualification Requirements (QR) for the work mentioned below. Points relevant to the tender are mentioned below and are to be complied with.

- 1 TENDER SPECIFICATION NO. : **BAP : FES: PG TEST 2019 Dated 01 06 2019**
 - 2 **NAME OF THE WORK** : Conducting Performance Guarantee Test in Electrostatic Precipitator (ESP) at various Power Plants as per laid down procedure. The objective is to determine the collection efficiency, pressure drop and auxiliary Power consumption of Electrostatic Precipitator. The collection efficiency to be calculated based on the dust concentrations at the inlet and outlet of precipitator. The scope of this work involves (A) Measurement of parameters like flue gas flow rate, flue gas temperature, dust concentration at the inlet & outlet of electrostatic precipitator, corona / auxiliary power measurements. (B) Providing of service engineer for the above scope of work.
 - 3 **EARNEST MONEY DEPOSIT** : **Rs. 1,93,500/-** (Rupees One lakh ninety three thousand and five hundred only)
 - 4 Tender specification documents : Attached.
 - 5 DUE DATE AND TIME FOR SUBMISSION OF OFFER: **24 06 2019 -14.00 Hrs.**
 - 6 DATE & TIME OF OPENING OF TECHNICAL BID : **24 06 2019 -14.30 Hrs.**
 - 7 **EARNEST MONEY DEPOSIT (EMD)** : EVERY TENDER MUST BE ACCOMPANIED BY THE PRESCRIBED AMOUNT OF EARNEST MONEY DEPOSIT.
-

a. Payment of EMD thru' Online

The steps to make online payment is detailed as below:

1. Visit
 - a. **<https://www.onlinesbi.com/prelogin/icollecthome.htm>**
2. Click 'Proceed' button
3. Select '**Tamilnadu**' in the drop down menu under 'State of Corporate/Institution *'
4. Select '**PSU-PUBLIC SECTOR UNDERTAKING**' in the next drop down menu under "Type of Corporate/Institution"
5. Click 'Go' button
6. Select '**BHEL BAP RANIPET**' in the drop down menu under "PSU-PUBLIC SECTOR UNDERTAKING"
7. Click 'Submit' Button
8. Select '**EMD**' in the drop down menu under 'Select Payment Category'
9. Now Fill in the required details and ensure correctness of data filled. Ensure that you are entering correct enquiry/tender number and other details correctly.

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10. Make payment for EMD as required in tender after entering the details and enclose copy of receipt along with tender documents. Scan and upload the receipt document in case of tender under e- Procurement mode.

(or)

- b. **EARNEST MONEY DEPOSIT (EMD) shall be remitted along with the tender in the form of Banker's Cheque or Pay order or DEMAND DRAFT drawn in favour of BHARAT HEAVY ELECTRICALS LIMITED payable at RANIPET.**

EMD in the form of bank guarantee / fixed deposit receipt or in any other form **will not be accepted**, except by cash as detailed in Cl. 1.4.1.1 (Page 24)

- 8 **Tender that is not accompanied by the requisite EMD amount is liable to be summarily rejected.**
- 9 Tenderers whose technical bids are found acceptable to BHEL shall be intimated separately about the status of their offers. Date of price bid opening shall be intimated to the qualified bidders only.
- 10 BHEL will not take any responsibility for delay/loss of documents or correspondence sent by courier/post.
- 11 BHEL reserves the right to accept or reject any or all tenders without assigning any reasons whatsoever.
- 12 All corrigenda, addenda, amendments, clarifications, change in tender opening date etc. to tender specification will be intimated hosted only in the BHEL website at least 5 days in advance from date of tender opening for compliance.
- 13 BHEL reserves the right to reject any tender on the basis of unsatisfactory performance of the bidder in any on going job or any similar job in the past.
- 14 The bidders to note that possession of provident Fund (PF) code is not a pre-condition for participation in the tender. However, the successful bidder should ensure to get the PF code for the employees engaged for this work.
- 15 **Qualification Requirements: Refer to Technical Specification for QR,** The bidder has to submit supporting documents for QR as called for in **Clause 2.10.1 (Page 13) of Commercial Terms and condition.**
- 16 **Seeking clarification on Tender Specification:** Clarifications on tender specification if any may be sought by the bidders so as to reach this office at least 3 days before the last date for tender submission. BHEL shall not be responsible for receipt of queries after the due date for seeking of clarification due to postal delay.
- 17 BHEL may decide holding a pre-bid conference (PBC) with any /all intending bidders. On such communication from BHEL, the bidder/authorized representative shall ensure participation in the same at the appointed time, date and place as may be decided by BHEL. Any clarification/query received after the pre-bid conference shall not be entertained.

- 18 All the information as called for in the various clauses and annexure of tender specification should be furnished. Please refer to the check list. The details so furnished should be complete in all respects and as per the formats prescribed in the Tender specification (Statutory requirement of Contract). The bidder may have to produce original documents for verification, if so decided by BHEL.
- 19 Offers received with any deviation or without relevant information are liable to be rejected.
- 20 Price bids received in any form other than prescribed in Part-II (PRICE BID) are liable to be rejected.
- 21 The tender offer should be kept valid for 6 Months from the date of bid opening for acceptance by BHEL. No unsolicited revision in the tender offer shall be entertained after opening of tenders and till expiry of the validity period.
- 22 **LIQUIDATED DAMAGES / Penalty:** Refer to Commercial Terms and Conditions Clause 2.5 (Page 12)
- 23 **Discrepancy in Quoted Rates :** Refer to General conditions of contract Section I - Clause 1.1.9 (Page 21)
- 24 **Reverse Action :** Will be conducted. Refer to general terms and conditions of RA (Page no : 35)
- 25 **Scope Split :** In the Ratio of 2:1 - Refer to Commercial terms and conditions clause 2.17 (Page 14)
- 26 **Contract Period :** Two Years

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BOILER AUXILIARIES PLANT
RANIPET – 632 406**

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SPECIAL INSTRUCTIONS TO TENDERER

1. This Booklet consists of the scope and bill of quantities of the entire work etc.
2. The Tenderers are requested to go through the instructions contained in the documents attached fully and then quote in the Rate Schedule attached.
3. Tenderers are advised to go through the General conditions of contract, special conditions of the contract, tender specifications etc. and fully understand the scope of work before quoting. Any doubt in the documents should be got clarified from FES Department of BHEL, Ranipet before submitting their offer.
4. Tenderers shall note that all the required Instrument (duly calibrated) will be provided by BHEL.
5. **No advance payment towards mobilization of site operation** or for any other purpose will be made by BHEL. The payment for work will be made strictly as per payment terms in the tender specification.
6. **The Tender Documents should be submitted duly signed and stamped in all the pages** of the Tender Specification, General conditions, special conditions, Annexures etc. by the Tenderer.
7. **All the resources required for completion of work has to be mobilized within 5 days from the date of intimation given by FES/BHEL through email and the scope of work in Conducting of Test is to be completed within the specified period.**
8. The undersigned is not bound to accept the lowest or any tender and will have the right to reject any or all the Tenders without assigning any reason whatsoever.
9. Approval, if any, required from statutory authorities like Labor Commissioner, Electricity Board, etc., should be obtained by the tenderer on his own cost and risk.
10. These Tender Documents are not transferable.

Tender duly addressed to the following address with all the required documents should be submitted so as to reach as per schedule given in the notice inviting tender. Tenders received (Including tenders received through Postal, Courier etc.,) after the scheduled date and time will be treated as late tender and will be returned to the bidder.

**ADDL. GENERAL MANAGER,
FES DEPARTMENT, ENGG. BUILDING,
BHARAT HEAVY ELECTRICALS LIMITED,
BOILER AUXILIARIES PLANT,
RANIPET – 632 406.**

Phone No.:04172 - 241242 / 284318

E-mail: srkrishna@bhel.in

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PROCEDURE FOR SUBMISSION OF SEALED TENDERS

THE TENDERER MUST SUBMIT THEIR TENDER IN TWO PARTS IN SEPARATE SEALED COVERS PROMINENTLY SUPERSCRIBED AS PART-I TECHNICAL BID AND PART-II PRICE BID AND ALSO INDICATING ON EACH OF THE COVERS THE TENDER SPECIFICATION NUMBER AND DUE DATE AND TIME OF SUBMISSION AS MENTIONED IN THE TENDER NOTICE..

PART-I (TECHNICAL BID) COVER-I :

Excepting Rate Schedule, all other documents , data sheets, EMD, Un-priced copy of the Price Bid and details (**duly signed on all pages with seal**) called for in the specification shall be enclosed in Part-I “Technical Bid”.

PART-II (PRICE BID) COVER-II :

All indications of price shall be given in this part-II “Price Bid” only.

Note :

Bidders are requested to submit their offers ‘in a sealed cover’ consisting of three inner sealed covers such as (1) EMD cover containing DD/Online payment receipt (or) MSME copy, (2) Part -1: Technical Bid (page no 1 to 52 of tender document) cover & (3) Part-II: Price Bid cover (Page no 53 of tender document), all super scribing the name of the work, Tender Number, Due date etc. AND SUBMITTED TO AGM/FES AT THE ADDRESS GIVEN IN “Special Instructions to Tenderers” ON OR BEFORE THE DUE DATE.

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TENDER SPECIFICATION NO. : BAP : FES: PG TEST 2019**PROJECT INFORMATION**

1	Name of The Power Plant	Projects located across India. The indicative list of projects is attached. BHEL may add /delete projects as per the requirement.
2	Place of the Power Plant	
3	Environment	Normal Thermal Power Plant conditions
4	Remarks	Before offering his/her/their tender, the Tenderer has to thoroughly acquaint with the site conditions in general in all power plants with reference to Operating procedures inside the plant, HSE rules prevailing , site interference problems etc. No compensation or revision of rates will be entertained at a later date for not having proper knowledge of the site conditions.

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TECHNICAL & COMMERCIAL TERMS AND CONDITIONS

Appendix-I **I - TECHNICAL SPECIFICATION**

Ref: BAP:FES:PGTEST:TS

Page: 01 of 11

Appendix-I

1.1 Introduction

ESP Performance guarantee test is to be conducted In Electro Static Precipitators (ESP) in various Thermal Power Plants across India. Procedure for conduct of test is approved by BHEL's customers for the respective projects. (Sample procedure is attached). The collection efficiency is calculated based on the dust concentrations at the inlet and outlet of precipitator.

The objective of the performance guarantee test is to determine the collection efficiency, pressure drop and auxiliary Power consumption of Electrostatic Precipitator as per procedure.

This work involves (A) measurement of parameters like flue gas flow rate, flue gas temperature, dust concentration at the inlet & outlet of electrostatic precipitator, corona / auxiliary power measurements. (B) Providing of service engineer for the above work and (C) Co-coordinating with the project in charges in accomplishment of the work.

1.2 Scope:

- i. Measurement of gas flow, temperature, inlet and outlet dust concentrations for computing of efficiency of ESP.
- ii. Measurement of corona / auxiliary power.

A typical 500 MW and above unit ESP consists of maximum 6 Passes (in most cases 4 passes) with each pass having 2 inlet ducts & 2 outlet ducts. Tests are normally conducted in each ESP separately with 4 sets of instruments simultaneously. (2 each at inlet and outlet).

A typical 270 MW and below unit ESP consists of maximum 2 individual passes with each pass having 2 inlet ducts & 2 outlet ducts. Tests are normally conducted in each ESP separately with 2 sets of instruments simultaneously (1 each at inlet and outlet).

Following are the brief steps involved in the performance guarantee test.

- a) Checking of ESP field data, Physical verification of rapping system in both auto and manual mode and Verification of chocking of hoppers. Providing the verified data in the prescribed format to Engr.in Charge of BHEL for corrective action. Verification and ensuring corrective action taken.
- b) Inspection of all test location for approach, cleaning of test pockets, power supply, lighting arrangements.
- c) Verification of test kit as per packing list.
- d) Cleaning and Assembling of Pitot tubes, thermocouples, sampling probes and marking of points.
- e) Testing of instruments – Vacuum pumps, manometers, thermocouples, temperature indicators, and gas meters. Check all the hose connections and arrest leakages in the instruments.
- f) Initial and final weighing of thimbles (filters) in laboratory as indicated in the procedure booklet.
- g) Measurement of velocity, pressure and temperature using Pitot, Manometer & thermocouple at each of the test location (duct). Duct is divided into grid points as shown in the attached typical drawings. Typically the measurements should be done in 36 grid points in each location of inlet and outlet. Accurate measurement is essential to arrive at gas flow. All the readings are recorded in a prescribed log sheet in the presence of customer representative. Intermediate calculation will be done during the test for arriving at isokinetic sampling rates.
- h) Measurement of dust concentration: sampling probe along with Thimble Sampling trains are used to sample flue gas at each location in approximately 36 grid points for about 3 minutes in each point. Thimbles are fixed in the sampling probe to filter the dust present in the sampled gas.
- i) The test location is located approximately at 23-25 meter elevation. The testing locations are in the ducts which are in open atmosphere.
- j) Test may be required to be done at night hours also and have to work up to 12-13 hrs., per day during the test period.
- k) Before leaving the site after completion (or) otherwise, all instruments to be properly cleaned, and accounted for all items. Also ensure proper working condition of test kit. Handing over of test kit with Packing list to BHEL Site office / Engr-in-charge of BHEL.

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l) Typical inlet parameters is given below:

Rating	Gas flow in m3/Sec.,	Flue gas temperature in Deg C.	Dust concentration in gm/Nm3.
500 MW	800-900	120 -150	35-65
600 MW	900-1000	120 -150	45-50
700 MW	1000-1100	120 -150	50-55
800 MW	1000-1200	120 -150	50-55

Ambient temperature range: 27 Deg C to 45 Deg C

m) **Test duration:**

Approximate duration is given below:

Sl.	Activity	Appx. Duration	
		270 MW & below	500 MW & above
1.	Assembly of test kits & checking, test pocket opening etc.,	2 days	2 days
2.	Preparation of thimbles, heating in oven, weighing etc.,	1 day	1 days
3.	Trial test	2 days	2 days
4.	Test	4 days	4 days
5.	Weighing of thimbles, final minutes, cleaning, testing and packing of test kits	1 day	1 days
Total		10 days	10 days

The period indicated is based on past experience only. However there may be delay or early completion possibilities depending on the site conditions like unit availability, full load operation, outages, number of PG Test in a unit as per contractual agreement with customer by BHEL (like PG Test with all fields in working condition, with (N-1) Field, two or three test etc., No additional charges will be applicable for the extended stay up to 3 days. Refer Payment terms for details.

1.3 Skills required by testing personnel

- Qualification: Service engineer (Minimum Diploma in any discipline) - 4 Service engineer for a typical 500 MW unit and above.
- Qualification: Service engineer (Minimum Diploma in any discipline) - 2 Service engineer for a typical 270MW unit and below.
- Testing team shall comprise of minimum one Mechanical and one Electrical or Electronic engineer.
- Should familiarize themselves with US EPA Method 17 Standards for emission measurement.
Link : https://www.epa.gov/sites/production/files/2017-08/documents/method_17.pdf
- Should familiarize themselves to troubleshoot the kit problems like leakages, electrical connection, display settings, vacuum pump and inspection of ESP field, rapping system, controller etc.,

1.4 BHEL Scope:

- Team leader
- Unskilled workers.
- Test instruments and its calibration.
- Consumables.
- Report preparation.

1.5 **The test procedure and readings ascertained is the property of BHEL and should not be used or divulged in any form of whatsoever in nature to anybody.**

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II COMMERCIAL TERMS AND CONDITIONS

- 2.1 Project details:** Indicative list of projects are attached. List may likely to change based on actual requirement during execution. The contractor should be in a position to depute the team to assigned site within 5 days from the date of deployment order / communication.
- 2.2 Price:** The offer shall be submitted in two parts viz. 1. Technical and 2. Commercial.
- 2.2.1 Part (a): Service charges** per person for conductance of PG test at site. The service charges quoted should also include boarding, lodging, local conveyance, Insurance and other incidentals for the testing team at site. No additional charges will be admissible.
- 2.2.2 Part (b): Tenderer should quote a fixed rate for** train / bus travel to & fro per trip per person, conveyance to reach destination, travel insurance, etc. that may be incurred by contractor irrespective of project location anywhere in India. The rate has to be considered per trip per person only.
- 2.3 Payment terms:**

Payments for the works completed shall be paid based on bills raised by the contractor as per payment terms and certified by Official-in-Charge of BHEL. Payment will be made within a period of 30 days from the date of submission of bills along with all the enclosures as called for by BHEL. Payment will be only through e-payment (through electronic fund transfer (EFT) / RTGS) only after deducting Bank charges as per BHEL terms of payment indicated below

1. 100% payment after completing the test / closing of site
2. Income tax will be recovered as per rules.
3. GST will be reimbursed on producing proof of payment of IGST./ Filing of returns as per GST Law

Documents to be submitted for processing the bills:

1. Work completion certificate by Engineer In-charge.
2. Invoice in triplicate.
3. Proof for GST Remittance.
4. Copy of GST Return filed for earlier month / Quarter as the case may be as per GST Law.
5. Proof for remittance of PF & ESI for workmen for the month.

2.4 Conditions for Payment:

No of days for completing the ESP PG test is 10 Days in normal availability of test conditions at site.

No of Service Engineers required during test is

- a. Four service engineers for ESP units of 500 MW and above plants
- b. Two service engineers for ESP Units of 270 MW and below plants.

However, number of service engineers required during the test will be as per BHEL requirement (depending on site conditions) restricted to maximum of 4 service engineers for 500MW and above and 2 service engineers for 270 MW and below.

Schedule 1 Payment: Service Charges for conducting ESP PG test.

100% of Schedule 1 Payment is admissible as below:

500 MW and above

1. **In Case the test is completed in less than 7 days**, the payment admissible = (Rate per day per service engineer X 4 (engineers)* No of days at site + (Rate per day per service engineer * 4 (engineers)* 3 days).
2. **In case of completion of the test in the time period of 7 days to 13 days**, Payment admissible is for 10 days = (Rate per day per service engineer X 4 (engineers)* 10 days).
3. **In case of completion of test and stay at site is delayed beyond 13 days**, for reasons not attributable to the contractor, the payment admissible = (Rate per day per service engineer * No of engineers * Number of days - (Rate per day per service engineer * 4 (engineers)* 3 days).

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270 MW and below:

- 1 In Case the test is completed in less than 7 days, the payment admissible = (Rate per day per service engineer X 2 (engineers)* No of days at site + (Rate per day per service engineer * 2 (engineers)* 3 days).
- 2 In case of completion of the test in the time period of 7 days to 13 days, Payment admissible is for 10 days = (Rate per day per service engineer X 2 (engineers)* 10 days).
- 3 In case of completion of test and stay at site is delayed beyond 13 days, for reasons not attributable to the contractor, the payment admissible = (Rate per day per service engineer * No of engineers * Number of days - (Rate per day per service engineer * 2(engineers)* 3 days).

Note:

- a. Addition of 3 days will be added to the total days at site restricted to maximum of 10 days is admitted as a special reward for completion of test in less than predicted 10 days. Also 3 days will be reduced from the total days restricted to minimum of 10 days in case of test is completed in 11 to 13 days.

- b. **In case of deployment is less than 4 Service engr. for 500MW and above and 2 Service Engr. for 270MW and below.**

The Service charges admissible for cases 1, 2 & 3 as above is with deduction as below:

For 500 MW and above = (4 Service Engr. – No of Service Engr. deployed) * No of Days deployed.

For 270 MW and below = (2 Service Engr. – No of Service Engr. deployed) * No of Days deployed.

Schedule 2 Payment: To & Fro Charges to site for conducting ESP PG test.

100% of Schedule-2 is admissible as below:

For 500 MW and above = (Rate per trip (To & Fro) per service engineer) * Number of Service engineer deployed restricted to maximum 4)

For 270 MW and below = (Rate per trip (To & Fro) per service engineer) * Number of Service engineer deployed restricted to maximum 2)

In case of more than one ESP unit PG test is completed in a same project / locality (approximately 100 KM range) in a single visit, the payment for one trip only under Schedule 2 is admissible.

2.5 LIQUIDATED DAMAGES & PENALTY

Intimation for mobilization will be given by BHEL 5 days in advance. In case of any delay in mobilizing the team beyond 5 days from the scheduled date BHEL has the right to claim compensation.

- a. Intimation regarding requirement of team will be communicated with notice period of 5 days through email. The contractor has to mobilize the requisite personnel at site. In case the contractor failed to mobilize it will attract a penalty of 5,000/- per day of delay
- b. Delay in completion of the work at the rate of Rs 5000/- per day of delay or part thereof (within the time frame indicated in the tender specification) if the delay is attributable to contractor.

The total amount liquidated damages (1& 2) is subject to a ceiling of 15000/- for the unit for which test is taken up.

The delay not attributable to the contractor such as: Unit not running, sudden outage, Coal shortage, heavy rains delaying the tests, any other law and order issue, and customer constraints etc., shall be certified by Engr-in Charge of BHEL. Decision of BHEL will be binding on this.

Head contract service engineer should submit the records of time sheet, Daily reports clearly mentioning the daily activities as well as constraints / delays.

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2.6 HEALTH, ENVIRONMENT AND SAFETY:

The tenderer shall acquire knowledge and adhere to prevailing rules and regulations pertaining to Health, Environment and Safety (HSE) procedures of respective power plants, project site rules, prevailing labour laws enforced by local authorities, labour regulations, movement of labour / vehicles inside the plant area, time keeping systems etc., in force and other local political conditions before submission of offer and during execution of the contract. The test team shall have their own personal safety equipment like Helmet, Safety shoes, etc.

SAFETY PRECAUTIONS TO BE TAKEN BY THE CONTRACTORS

1. The Contractor must inspect the area of work to decide the safety precautions necessary for executing this contract.
2. Whenever people work at height more than six feet, platform shall be provided or the workers shall wear safety belt to avoid fall from the height.
3. Wherever any area declared as dangerous, the workers shall not be allowed to work till a written clearance is obtained from appropriate authorities.
4. No material of any kind shall be dropped or allowed to be dropped from any height.
5. Defective ladders shall not be used at all.
6. Inflammable materials shall not be stored near places where the sparks are likely to occur.
7. The necessary safety equipment such as gloves, boots, helmets etc. must be issued to the workmen and strictly to be used while carrying out the work.
8. If the contractor's workmen are found to be violating the safety precautions, punitive action will be taken by withholding a sum of Rs.500/- to Rs.1000/- from the contractor's bill for each violation.
9. The working area shall be kept clean and free from all obstructions.
10. All temporary electrical connections shall be properly earthed, insulated and periodically checked.
11. The contractor should arrange WORKMEN COMPENSATION/ INSURANCE POLICY covered for all his/her workmen. A copy of the policy has to be submitted before commencement of work.
12. All safety precautions are to be taken by the contractor at his cost.
13. These safety measures shall be deemed to form an integral part of the Work Order/ Agreement.

2.7 The contractor shall comply with all State/Central Laws, Statutory Rules, Regulations etc. inclusive of those regarding Labour and Industrial Laws which are applicable from time to time and shall comply with the provision of the same Labour Legislation, Rules and Regulations framed under the provision of Employees' Provident Fund and Miscellaneous Provision Act 1952, ESI registration, Labour License etc.

2.8 The tenderer shall specify the Provident Fund Code / ESI Number allotted to their firm by the Provident Fund authorities for engagement of labour for this tendered work or otherwise shall obtain PF Code/ESI No. from respective Authorities before finalization of the tender.

2.9 The contractor also has to ensure that their personnel are adhering to all plant regulations of respective project and do not cause any harm to the plant.

2.10 Qualification requirement (QR):

The bidders must satisfy the following Qualification criteria for participating in the tender:

Work Experience:

- Contractor should have experience in successfully executing the works / Service contract for more than one year in any industry manufacturing sector / service sector / Thermal power plants etc.(Copy of contract / Work execution certificate to be attached)
- Confirmation that Qualified engineers (Minimum Diploma of any discipline) shall be deployed to carry out the work specified. (Minimum of one Mechanical and one Electrical / Electronic
- Confirmation that minimum 10 service engr. will be listed and will ensure deployment of service engineers to conduct PG test at three different projects at a time. Testing team will have minimum one Mechanical and one Electrical or Electronic engineer.

Value of work:

- One works / Service contract costing not less than the amount equal to Rs : 4.0 Lakhs.
(OR)
- Two works / Service contract costing not less than the amount equal to Rs:2.5 Lakhs
(OR)
- Three works / Service contract costing not less than the amount equal to Rs:2.0 lakhs

Important Note: Tenderer shall not be involved in design, manufacture and supply of ESP and should give undertaking for the same. BHEL has the right to reject such firms.

2.10.1 Supporting Documents for meeting qualification requirement:

- The copy of the PO bagged (within 7 Years) for the scope of work covered in clause 2.10 above
- Certificate/ Proof like protocol, MOM etc., for successful completion contract etc.

BHEL will assess the qualification requirement and has the right to reject or admit any offer from contractor after evaluation.

2.11 Validity: The parties to quote for rate Schedules with a validity of 6 Months on Firm Price basis (no escalation is allowed). BHEL reserves the right to negotiate with L1 offered. In case the Bharat Heavy Electricals Limited calls for negotiations such negotiations shall not amount to cancellation or withdrawal of the original offer, which shall be binding on the bidders.

2.12 FIRM PRICE: The Contractor has to keep his quoted rates firm for the entire contractual period including total extended period, if any, and no claim for revision of rates or price escalation is allowed under any circumstances.

2.13 VARIATION IN QUANTUM OF WORK : The Service engineer days are indicated in the rate schedule which is only approximate and is likely to vary to the extent required for the completion of the scope of work.

2.14 BID EVALUATION: The offer submitted by bidders who meet the requisite Qualifying Requirements will be evaluated in two stages, namely Technical- Bid Evaluation and Price Bid Evaluation.

2.15 Bidders whose technical bids are found acceptable to BHEL shall be intimated separately about the status of their offers. Date of price bid opening shall be intimated to the qualified bidders only.

2.16 PRICE BID EVALUATION CRITERIA: The successful bid shall be based only on the total quoted value in the sealed "Price bid" or Reverse Auction, as applicable.

2.17 SPLITTING OF THE TENDER QTY:

The tendered quantity will be split among TWO bidders in the ratio of 2:1 to L1 and L2 (or other bidder, in the order of ranking, who accept to the negotiated L1-rates).

2.18 EPF registration: Bidders should furnish the EPF code and registration details along with the bid. Bidders who have not registered and do not possess EPF code, if awarded the work, should immediately register and obtain the code.

2.19 The offers of the bidders who are on the banned list as also the offer of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site “www.bhel.com” as on floating of tender (date of advertisement)

2.20 GST applicable for the tender :

Registration & GST Rate

1. Bidder should indicate GSTIN No. (Copy of GST registration to be enclosed) and PAN No. (copy of PAN to be enclosed).
 2. Tender will be considered/ accepted, if & only if the vendor has a valid GST Registration No.
 3. Central Tax/State Tax/ Integrated Tax/Union Territory tax to be quoted as extra in %.
- a. Bidders to ensure correct applicability of Central Tax/ State Tax/ Integrated Tax/ Union Territory tax based on the Inter / Intra state movement Supply of goods and provision services or both.

Invoicing & Payment

1. The Tax Invoice for supply of Goods & Services should be raised as per the provision of GST Act & Rules and must compulsorily mention the following :-
 - a. BHEL-RANIPET GSTIN: 33AAACB4146P2ZL
 - b. HSN Code or Service Accounting Code for supply of goods or services.
 - c. Name & address of supplier
 - d. GSTIN of Supplier
 - e. Consecutive Serial Number & date of issue
 - f. Description of goods or services
 - g. Total value of supply of goods or services
 - h. Taxable value of supply of goods or services
 - i. Tax Rate – Central Tax & State Tax or Integrated Tax, Cess
 - j. Amount of Tax charged
 - k. Place of supply/ Service Rendered
 - l. Address of delivery if different from place of supply
 - m. Signature of authorized signatory
2. Reimbursement of GST to the vendor is contingent upon complying with the following condition by the service provider:-
 - i. Uploading the onward GST Return (**GSTR-1**) in GSTN Network portal within the statutory time period.
 - ii. Discharging the GST tax liability to the Government.
 - iii. Submission of Tax Invoice to BHEL.
 - iv. Submission of proof of payment of GST to BHEL.
 - v. Availment of Input Tax Credit by BHEL.

Input Tax Credit

1. In case GST credit is delayed/ denied to BHEL, due to non/delayed receipt of goods and/or services and/or tax invoice or expiry of timeline prescribed in GST Law for availing such ITC, or any other reason not attributable to BHEL, GST amount shall be recoverable from Vendor along with interest & penalty levied/ leviable.
2. In case vendor delays declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from vendor/contractor along with interest & penalty levied/ leviable on BHEL.
3. In case of discrepancy in the data uploaded by supplier in the GSTN portal or in case of any incomplete work/service, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note (details to be uploaded in GSTN portal).
4. For any such delay in availing of tax credit for reasons attributable to vendor (as mentioned above), interest as per the GST Act & Rules, along with penalty, if any will be deducted for the delayed period i.e. from the month of receipt till the month tax credit is availed, from the running bills.

Penalty for Non-compliance of GST Act

1. Penalty amount so determined along with GST if applicable thereon shall be recovered from the contractor.

Other Provison

1. Any reduction in rate of Tax on any supply of goods or services or the benefit of input tax credit shall be passed on to the recipient by way of commensurate reduction in prices.
2. The agency should quote the applicable taxes and duties in the technical bid (part-A) as well as in price bid (part-B).
3. All the terms & conditions of the contract with respect to Taxes & Duties are subject to the new taxation laws introduced from time to time (e.g., GST). The terms & conditions will be modified in accordance with the provisions of new laws (e.g., GST).
4. The Prices quoted above must be inclusive of all taxes and duties and exclusive of GST, which will be payable extra as per applicable rules and subject to Submission of documentary evidence.

2.21 The tenderer has to furnish information called for in the APPENDIX-II & III attached with this booklet. The details pertaining to the Bank Accounts where proceeds will be transferred through BHEL's Banker is to be furnished.

2.22 Copies of EPF remittance challans, ESI / Insurance remittances, etc of the workers pertaining to the site of work and period applicable shall be attached to every bill submitted, failing which bills will not be processed. Copies of half yearly and annual EPF returns for the workers have also to be submitted, if required.

2.23 RIGHTS OF BHEL IN CASE OF POOR PROGRESS OF WORK: To get the work done through other agencies at the risk and cost of the contractor, in the event of contractor's poor progress or inability to execute work, persistent disregard to instructions of BHEL, assignment transfer, subletting of contract without the permission of BHEL, non-fulfillment of any contractual obligation etc., and to recover compensation for such losses from the contractor including BHEL's supervision charges and overheads from the security deposit / other dues.

2.24 The manpower provided shall be capable of carrying out the assigned work to the satisfaction of BHEL. BHEL reserves the right to decide on the suitability of the personnel deployed and insist on removal of any employee found unsuitable for the work assigned. The contractor shall forthwith arrange for replacement.

2.25 THE CONTRACTOR SHALL STRICTLY ABIDE BY THE STATE AND CENTRAL LAWS, STATUTORY RULES, REGULATIONS ETC. AS INDICATED IN THE GCC AND OTHER SECTIONS OF THE SPECIAL CONDITIONS OF CONTRACT. IN ADDITION THE CONTRACTOR SHALL HAVE TO COMPLY WITH PROFESSIONAL TAX / PF /ESI/ LABOUR LICENCE REGULATIONS FOR ALL HIS EMPLOYEES / WORKMAN AS PER THE LOCAL AUTHORITIES / GOVERNING BODIES INSTRUCTIONS.

2.26 Benefits to Micro & Small Enterprises only (MSE) : If vendor have their MSE Certificate, EMD need not to pay for this work. Guidelines of the Govt. of India shall be followed to provide benefits to MSE. MSE suppliers can avail the intended benefits only if they submit along with offer, attested copies of either EM-II certificate having deemed validity (Two years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or EM-II certificate along with CA certificate (Format enclosed as per Appendix – IV) applicable for the year, certifying quantum of investment in plant and machinery within the permissible limit as per the act for relevant status (Micro or small) where the deemed validity of EM-II is over. Date to be reckoned for determining the deemed validity will be the last date of technical bid submission. Non submission of such documents will lead to consideration of their bids at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier till the supplier submits these documents

2.27 ORDER OF PRECEDENCE: In the event of any ambiguity or conflict between the clauses / statements in Tender Documents, the order of precedence shall be in the order below.

- a. Amendments / clarifications / corrigenda / errata etc. issued.
- b. Notice Inviting Tender (NIT)
- c. Price Bid
- d. Technical Specification & scope of work
- e. Special Conditions of Contract
- f. General Conditions of Contract
- g. Forms & Procedures

2.28 In the event of any conflict between requirements of a clause/s of this specification /documents/drawings/data sheets etc. and different standards / codes specified, the same is to be brought to the notice of BHEL before submission of offer, else BHEL's interpretation shall prevail.

2.29 Typographical error/missing pages/other errors in the tender documents noticed, must be brought to the knowledge of BHEL in writing before submission of offer, else BHEL's interpretation shall prevail.

SIGNATURE OF THE
 CONTRACTOR WITH SEAL

INDICATIVE LIST OF PROJECTS

Sl. No.	Cust no.	Project	Rating	Customer	PG Test Plan	SECTOR	REGION
1	R817	GADARWARA-1 ESP	800	NTPC	19-20	PS	NR
2	R818	GADARWARA-2 ESP	800	NTPC	19-20	PS	NR
3	R802	YERAMARUS 1	800	RPCL	19-20	PS	SR
4	R802	YERAMARUS 2	800	RPCL	19-20	PS	SR
5	R824	KOTHAGUDEM-12	800	TSGENCO	19-20	PS	SR
6	R833	KRISHNAPATNAM-3	800	APGENCO	19-20	PS	SR
7	R825	NTPC-DARIPAL-1EP	800	NTPC	19-20	PS	SR
8	R826	NTPC-DARLIPALI 2 EP	800	NTPC	19-20	PS	SR
9	R819	NTPC-LARA-1 ESP	800	NTPC	19-20	PS	SR
10	R820	NTPC-LARA-2 ESP	800	NTPC	19-20	PS	SR
11	R823	WANAKBORI-8 800M	800	GSECL	19-20	PS	WR
12	R700	BELLARY 3	700	KPCL	19-20	PS	SR
13	R637	LALITPUR 3	660		19-20	PS	NR
14	R648	MAUDA-II-660EP-3	660	NTPC	19-20	PS	WR
15	R649	MAUDA-II-660EP-4	660	NTPC	19-20	PS	WR
16	R650	NTPC-SOLAPUR-1	660	NTPC	19-20	PS	WR
17	R632	PRAYAGRAJ 1	660		19-20	PS	NR
18	R633	PRAYAGRAJ 2	660		19-20	PS	NR
19	R634	PRAYAGRAJ 3	660		19-20	PS	NR
20	R631	RAYALASEEMA 6	660	APGENCO	19-20	PS	SR
21	R652	IB VALLEY TPS -3	660	OPGC	19-20	PS	ER
22	R653	IB VALLEY TPS -4	660	OPGC	19-20	PS	ER
23	R659	NABINAGAR-ESP-1	660	NTPC	19-20	PS	ER
24	R660	NABINAGAR-ESP-2	660	NTPC	19-20	PS	ER
25	R654	SURATGARH STPS-7	660	RVUNL	19-20	PS	ER
26	R623	JHABUA 600MW -1	600		19-20	PS	WR
27	R609	SHREE SINGAJI-2	600	MPGCL	19-20	PS	SR
28	R545	HNPCL-VIZAG-1	520	HNPCL	19-20	PS	ER
29	R513	VALLUR TPP 1	500	NTPC	19-20	PS	SR
30	R531	MARWA-1 500 MW	500	CSPGCL	19-20	PS	ER
31	R532	MARWA-2 500 MW	500	CSPGCL	19-20	PS	ER
32	R540	VINDHYACHAL 11	500	NTPC	19-20	PS	WR
33	R503	FARAKKA 500MW # 6	500	NTPC	19-20	PS	NR
34	R4D0	TALCHER -1, KANIHA	500	NTPC	19-20	SSBG	SR
35	R4D1	TALCHER -2, KANIHA	500	NTPC	19-20	SSBG	SR
36	R552	NBPPL-UNCHAHAHAR-6	500	NTPC	19-20	PS	NR
37	R550	NEYVELI 500 -1	500	NLC	19-20	PS	SR
38	R551	NEYVELI 500 -2	500	NLC	19-20	PS	SR
39	R4H1	NTPC SINGRAULI 6	500	NTPC	19-20	SSBG	NR
40	R4H2	NTPC SINGRAULI 7	500	NTPC	19-20	SSBG	NR
41	R553	TUTICORIN1 ST-IV	500	MEIL	19-20	PS	SR

Ref: BAP:FES:PGTEST:TS

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Appendix-I

1	R336	IEPL,BELA-1 270M	270	IEPL	19-20	PS	WR
2	R355	BHAVNAGAR 250 -2	250		19-20	PS	WR
3	R324	NABINAGAR-1 250M	250	NTPC	19-20	PS	ER
4	R325	NABINAGAR-2 250M	250	NTPC	19-20	PS	ER
5	R326	NABINAGAR-3 250M	250	NTPC	19-20	PS	ER
6	R327	NABINAGAR-4 250M	250	NTPC	19-20	PS	ER
7	R354	BHAVNAGAR 250 -1	250		19-20	PS	WR
8	R318	NTPC-BONGAIGON-1	250	NTPC	19-20	PS	ER
9	R319	NTPC-BONGAIGON-2	250	NTPC	19-20	PS	ER
10	R320	NTPC-BONGAIGON-3	250	NTPC	19-20	PS	ER
11	R368	BARAUNI 8	250		19-20	PS	ER
12	R369	BARAUNI 9	250		19-20	PS	ER
13	R4E7	IBVALLEY-EP-RM-2	210	OPGC	19-20	SSBG	SR
14	R200	OBRA R&M-UNIT-9	210	UPRVUNL	19-20	SSBG	NR
15	R4F5	KORADI R&M	210	MSPGCL	19-20	SSBG	WR
16	R4Q1	KORBA WEST RM EP	210	CSPCL	19-20	SSBG	WR
17	R4G6	NTPC SINGRAULI 1	210	NTPC	19-20	SSBG	NR
18	R4G7	NTPC SINGRAULI 2	210	NTPC	19-20	SSBG	NR
19	R4G8	NTPC SINGRAULI 3	210	NTPC	19-20	SSBG	NR
20	R4G9	NTPC SINGRAULI 4	210	NTPC	19-20	SSBG	NR
21	R4H0	NTPC SINGRAULI 5	210	NTPC	19-20	SSBG	NR
22	R4D2	VINDHYA-RM-210-1	210	NTPC	19-20	SSBG	WR
23	R4D3	VINDHYA-RM-210-2	210	NTPC	19-20	SSBG	WR
24	R4D4	VINDHYA-RM-210-3	210	NTPC	19-20	SSBG	WR
25	R4D5	VINDHYA-RM-210-4	210	NTPC	19-20	SSBG	WR
26	R4D6	VINDHYA-RM-210-5	210	NTPC	19-20	SSBG	WR
27	R4D7	VINDHYA-RM-210-6	210	NTPC	19-20	SSBG	WR
28	R203	Obra R&M-UNIT-12	210	UPRVUNL	19-20	SSBG	NR
29	R212	MUZAFARPUR-195-3	195	NTPC	19-20	PS	ER
30	R213	MUZAFARPUR-195-4	195	NTPC	19-20	PS	ER
31	R142	HINDALC ADITYA-1	150	HINDALCO	19-20	IS	SR
32	R144	HINDALCO ADITYA-3	150	HINDALCO	19-20	IS	SR
33	R155	SIPL-DHULE-1 150	150	SINTEX	19-20	IS	WR
34	R156	SIPL-DHULE-2 150	150	SINTEX	19-20	IS	WR
35	R132	SENDU,SENEGAL-1	125		19-20	IO	SR
36	R4C8	TALCHER EP-5 URM	120	NTPC	19-20	SSBG	SR
37	R4C9	TALCHER EP-6 URM	120	NTPC	19-20	SSBG	SR
38	R422	RINL-VIZAG STEEL 6	120	RINL	19-20	IS	SR
39	R4Q5	RINL VIZAG-1	120	RINL	19-20	IS	SR
40	R122	BARAUNI-6 R&M	105		19-20	SSBG	ER

SIGNATURE OF THE
CONTRACTOR WITH SEAL

TENDER DOCUMENT (TENDER SPECN No : BAP : FES: PG TEST 2019)**Un-priced-Bid** to be submitted along with Part-I ie. Technical Bid

Name Of Work: (For Detailed Scope Of Work Please Refer The Tender Specification.)

***GST percentage alone to be indicated in the in the Un-Priced-Bid**

NAME OF WORK: Service Charges for conducting Performance Guarantee Test in Electrostatic Precipitator (ESP) of 270MW and below & 500MW and above at various Power Plants as per laid down procedure. The objective is to determine the collection efficiency, pressure drop and auxiliary Power consumption of Electrostatic Precipitator. The collection efficiency to be calculated based on the dust concentrations at the inlet and outlet of precipitator. The scope of this work involves (A) Measurement of parameters like flue gas flow rate, flue gas temperature, dust concentration at the inlet & outlet of electrostatic precipitator, corona / auxiliary power measurements. (B) Providing of service engineer for the above scope of work.

EXECUTION PERIOD : Two Years from date of LOA / CONTRACT

Schedule	Description	Unit	QTY	Total
1	Service charges per engineer for preparation and conduct of ESP PG test	Number of service engineer days	2250	90.23%
2	To & Fro Conveyance for conducting ESP PG test across India per engineer.	No	225	9.77%
	Total (Sch1 + Sch2)		Total weightage->	100%
	Applicable GST _____	%	←----- To Quote GST% here	GST Value
	Total Value with Tax			Not to Quote in Un-Priced-Bid

**SIGNATURE OF THE
CONTRACTOR WITH SEAL**

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FIELD ENGG. SERVICES DEPARTMENT	GENERAL CONDITIONS OF CONTRACT ES : F : 010 Page No.: 01 of 19
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GENERAL CONDITIONS OF CONTRACT

FOR

WORKS

(SECTION – I & II)

ES : F : 010



FIELD ENGG. SERVICES DEPARTMENT
BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)
BOILER AUXILIARIES PLANT
INDIRA GANDHI INDUSTRIAL COMPLEX
RANIPET – 632 406

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FIELD ENGG. SERVICES DEPARTMENT	GENERAL CONDITIONS OF CONTRACT ES : F : 010 Page No.: 02 of 19
SECTION –I		
1. GENERAL INSTRUCTIONS TO BIDDERS 1.1. DESPATCH INSTRUCTIONS: 1.1.1. This tender specification as a whole, duly furnishing all the details required and other documents as required in the following pages, shall be duly signed and sent in a sealed cover duly super scribing the name of work as given in the tender notice. 1.1.2. The tender shall be addressed to Officer inviting tender as indicated in the tender notice. 1.1.3. Tenders submitted by post shall be sent by “REGISTERED POST WITH ACKNOWLEDGEMENT DUE” and shall be posted with the due allowance for any postal delay. The tenders received after the due date and time of opening are liable to be rejected. Telegraphic offers and offers received by telex may not be considered. 1.1.4. Tenders shall be opened by authorized officer of BHEL at his office at the time and date as specified in the tender notice in the presence of such of those bidders or their authorized representatives who may be present. 1.1.5. The Tenders shall closely pursue all the clauses, specifications and drawings indicated in the tender documents before quoting. Should the bidder have any doubt in the meanings of any portion of the tender specification or find discrepancies or omission in the drawings or the tender documents issued are in complete or shall require clarification on any of the technical aspect, scope of work etc., he shall at once contact the authority inviting the tender for clarification before the submission of the tender. 1.1.6. Before tendering, the bidders are advised to inspect the site of work and the environments and be well acquainted with the actual working and other prevalent conditions, facilities available, position of material and labour. No claim will be entertained later, on the ground of lack of knowledge. 1.1.7. Bidder must fill up all the schedules and furnish all the required information as per the instructions given in various sections of the tender specification. Each and every page of the Tender Specification must be signed and submitted along with the offers by the bidder in token of complete acceptance thereof. The information furnished shall be complete by itself. 1.1.8. The bidders shall quote the rates in English language and international numerals. These rates shall be entered in figures as well as in words. 1.1.9. Discrepancy in Quoted Rates : 1.1.9.1. If, in the price structure quoted, there is a discrepancy between the Unit rate quoted and the Total Price (which is obtained by multiplying the unit price by the quantity) due to arithmetical errors, the Unit rate quoted will be considered valid and the Total price will be corrected accordingly, unless in the opinion of BHEL there is an obvious misplacement of decimal point in the unit price. In which case the total price as quoted shall govern and the unit price corrected accordingly. 1.1.9.2. If there is an error in total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected. 1.1.9.3. If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (1.1.12.1) and (1.1.12.2) above. 1.1.9.4. If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date before which the bidder has to send their acceptance on the above lines. If the bidder does not agree to the decision of BHEL, the bid is liable to be ignored. 1.1.10. For the purpose of the tender, the metric system of units shall be used. 1.1.11. All entries in the tender shall either be typed or be written in ink. Erasers and overwriting are not permitted and may render such tenders liable to summary rejection. All cancellations and insertions shall be duly attested by the bidder. 1.2. QUALIFICATION OF BIDDERS: Only bidders who have previous experience in the work of this nature and description detailed in this tender specification are expected to quote for this work duly submitting details of experience along with the offer. Offers from bidders who do not have proven and established experience in the field are not likely to be considered.		
SIGNATURE OF THE CONTRACTOR WITH SEAL		

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FIELD ENGG. SERVICES DEPARTMENT	GENERAL CONDITIONS OF CONTRACT ES : F : 010
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SECTION –I		
1.3. DATA TO BE ENCLOSED: Full information shall be given by the bidder in respect of the following. Non- submission of these information may lead to rejection of the offer.		
1.3.1. FINANCIAL STATUS: A certificate from Scheduled Bank to prove his financial capacity to undertake the work duly indicating financial limits the bidder enjoys or solvency certificate from the concerned Government authority. Information required in Annexure A (pl.ref. Page 09 of 11 of statutory Requirement) shall be furnished by the bidder along with the offer.		
1.3.2. INCOME TAX CERTIFICATE: A certificate of Income Tax clearance (A copy of the audited Balance Sheet, Profit and Loss Account & Income Tax return -filed for the last Three years to be submitted) from the appropriate authority in the forms prescribed there for indicating annual turnover and the Sales Tax clearance certificate from the appropriate authorities as prescribed by the concerned state government, if any. These certificates shall be valid for one year from the date of issue or for the period prescribed therein for all tenders submitted during the period.		
1.3.3. PREVIOUS EXPERIENCE: A statement giving particulars duly supported by documentary evidence of the various services rendered for each similar work by the bidder indicating the particulars, value of each work, the site location, the duration, date of completion, a list of site locations and particulars and value of various services that are under progress. Information required in Annexure –BI & BII shall be furnished by the bidders along with the offer.		
1.3.4. ORGANISATION CHART: The Organisation pattern that is presently available with the bidder and that will be employed by the bidder for this work shall be furnished.		
1.3.5. An attested copy of the Power of Attorney, in case the tender is signed by an individual other than the sole proprietor, shall also be attached. (If it is a Company or Firm, etc., Director/Managing Partner as the case may be is required to sign)		
1.3.6. IN CASE OF AN INDIVIDUAL: His full name, address and place and nature of business shall be indicated.		
1.3.7. IN CASE OF PARTNERSHIP FIRMS: The names of all the partners and their addresses be furnished along with a copy of the partnership deed/instrument of partnership duly certified by Notary Public shall be enclosed.		
1.3.8. IN CASE OF COMPANIES: Date and place of registration including date of commencement certificate in case of public companies (certified copies of Memorandum and Articles of Association are also to be furnished) are to be furnished.		
1.3.9. Nature of business carried on by the Company and the provisions of the Memorandum relating there of shall be furnished.		
1.3.10 Names and particulars including addresses of the Directors and their previous experiences shall be furnished.		
1.3.11 A list of tools and tackles that the bidder is having and those that will be used on this job shall be furnished.		
1.3.12 In addition to the above, the particulars required in various annexure shall also be furnished.		
EARNEST MONEY DEPOSIT:		
1.4.1. Every tender must be accompanied by the prescribed amount of Earnest Money Deposit in any one of the following forms.		
SIGNATURE OF THE CONTRACTOR WITH SEAL		

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SECTION –I		
1.4.1.1. EMD shall be deposited in cash (as permissible under income tax act), Pay order or Demand Draft (payable at Ranipet in favour of “Bharat Heavy Electricals Ltd.,”) only. No other form of EMD remittance shall be acceptable to BHEL. 1.4.1.2. In case of payment of EMD in the form of Cash, the amount should be remitted by the bidder to the Cash Office of Bharat Heavy Electricals Limited, BAP,Ranipet-632 406 during it's working hours and cash receipt issued shall be enclosed along with the tender. 1.4.2. Tenders received without Earnest Money in full in the manner prescribed above are liable to be rejected. 1.4.3. The Earnest Money Deposit of the successful tenders may be retained towards part of Security Deposit. 1.4.4. In the case of unsuccessful bidders, the Earnest Money will be refunded to them within a reasonable time after finalisation of the tender. 1.4.5. Earnest Money Deposit by the bidder will be forfeited as per tender documents if the bidder: 1.4.5.1. Fails to communicate unqualified acceptance of Letter of Intent within 15 days of date of Letter of Intent. 1.4.5.2. Does not commence the work within the period as per LOA/Contract. In case the LOA/Contract is silent in this regard then within fifteen days after award of contract. 1.4.5.3. After opening of Tender, revokes/withdraws his tender within the validity period or revises/alters his earlier quoted rates/conditions. 1.4.5.4. Fails to submit SD as indicated in the Letter of Intent. 1.4.6. Earnest Money deposit shall not carry any interest. 1.5. AUTHORISATION AND ATTESTATION: 1.5.1. Tenders shall be signed by persons duly authorized /empowered to do so. Certified copies of such authority and relevant documents shall be submitted along with the tenders. 1.6. VALIDITY OF OFFER: The rates in the Tender shall be kept open for acceptance for a minimum period of six months from the date of opening of tenders. In case the Bharat Heavy Electricals Limited calls for negotiations such negotiations shall not amount to cancellation or withdrawal of the original offer , which shall be binding on the bidders. 1.7. EXECUTION OF CONTRACT: The successful bidder's responsibility under this contract commences from the date of issue of the Letter of Intent by Bharat Heavy Electricals Limited. The successful bidder shall be required to execute an agreement in the prescribed form (Annexure-D) with BHEL within a reasonable time after the acceptance of his tender and in any case before submitting the first bill for payment. The expenses for completion, stamping and registration of the agreement with prescribed authority, if necessary, shall be borne by the Contractor. 1.8. SECURITY DEPOSIT: 1.8.1. Upon acceptance of tender, the successful bidder within the time specified in the letter of intent must deposit the required amount of Security Deposit for satisfactory execution of work and shall not commence work under this contract before remitting security deposit except as directed by BHEL. The total amount of Security Deposit shall be 5 % of the contract value 1.8.2. The Security Deposit may be furnished in any one of the following forms:- 1. Cash (as permissible under the income tax act). 2. Local cheques of Scheduled Banks, (subject to realization) / Pay order, Demand Draft / Electronic fund transfer in favour of BHEL. 3. Securities available from Post Offices such as National saving Certificates, Kisan Vikas Patras etc. (Certificates should be held in the name of contractor furnishing the security and duly pledged in favour of BHEL and discharged on the back). SIGNATURE OF THE CONTRACTOR WITH SEAL		

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4. Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the companies act. The FDR should be in the name of the contractor, account BHEL, duly discharged on the back. 5. Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the companies act. The Bank Guarantee format should have the approval of BHEL (Annexure-E). The Bank Guarantee furnished towards Security Deposit should be kept valid by proper renewal till the expiry of 6 Months after the said work is actually completed. 1.8.2.1. Security deposit can also be recovered at the rate of 10% from the running bills. However in such cases atleast 50% of the security deposit (as Bank Guarantee or Demand Draft) should be remitted before start of the work and balance 50% may be recovered from the running bills till the full Security Deposit is made up. 1.8.2.2. EMD of the successful bidder may be converted and adjusted against the security deposit.. 1.8.2.3. Acceptance of security deposit as per clause 1.8.2 (SI no: 3&4) above will be subject to hypothecation or endorsement on the documents in favour of BHEL. However, BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith. 1.8.3. If the value of the work done at any time exceeds the accepted agreement value, the security Deposit shall be correspondingly enhanced and the extra Security Deposit shall be immediately deposited by the Contractor or recovered from payments due to him. 1.8.4. Failure to deposit the Security Deposit within the stipulated time, may lead to forfeiture of Earnest Money and cancellation of the award of work. 1.8.5 If any part of Security Deposit of the Contractor is held in the form of approved securities it shall be kept transferred in the name of Bharat Heavy Electricals Limited, Ranipet, in such a manner that the same can be realized fully without referring to the Contractor, BHEL shall not be responsible for any depreciation in the value of the Security while in BHEL's custody or for any loss of interest thereon. 1.8.6 BHEL reserves the right to forfeiture of Security Deposit in addition to the other claims and penalties in the event of the Contractor's failure to fulfill any of the Contractual obligation including liquidation or bankruptcy of the contractor, non-payment of money payable by means of arbitration award in favour of BHEL or in the event of termination of Contract as per terms and conditions of Contract. BHEL reserves the right to set off the Security Deposit, against any claims of any other contracts with BHEL. 1.8.7 RETURN OF SECURITY DEPOSIT: If the Contractor performs and completes the work in all respects to the entire satisfaction of BHEL and presents an absolute "No Demand Certificate" in the prescribed form (Annexure-F) and returns properties belonging to BHEL handed over, lent or hired by him for carrying out the said works, Security Deposit will be released to the Contractor after deducting all cost of expenses or other amounts that are to be paid to BHEL under this or other contracts entered into with the Contractor. It may be noted that in no case the Security Deposit shall be refunded/released prior to passing of final bill. 1.9. REJECTION OF TENDER AND OTHER CONDITIONS 1.9.1. The acceptance of Tender will rest solely with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever. 1.9.1.1. To reject any or all of the bidders. 1.9.1.2. To split up the work amongst two or more Bidders. 1.9.1.3. To award the work in part.		

1.9.1.4. Either of the contingencies stated in (1.9.1.2) and (1.9.1.3) above to modify the time for completion suitably.

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- 1.9.2.** Conditional and Unwitnessed tenders, tenders containing absurd or unworkable rates and amounts and tenders which are incomplete and otherwise considered defective and tenders not in accordance with the tender conditions, specifications, etc., are liable to be rejected.
- 1.9.3.** If a bidder expires after the submission of his/her tender or after the acceptance of his/her tender, BHEL may at their discretion cancel such tender. If a partner of a firm expires the submission of the tender or after the acceptance of the tender, BHEL may cancel such tender at their discretion unless the firm retains its character.
- 1.9.4.** BHEL will not be bound by any power of Attorney granted by the bidder or by changes in the composition of the firm made subsequent to the execution of the Contract. They may, however recognize such power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.
- 1.9.5.** If the bidder deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or cancel the contract, if awarded. The Earnest Money/Security Deposit /any other money due shall also be forfeited.
- 1.9.6.** Canvassing in any form in connection with the tender is strictly prohibited and the tenders submitted by the contractors who resort to canvassing in any form are liable to rejection.
- 1.9.7.** Should a bidder or contractor or in the case of a firm or company of contractors one or more of its partners/share holders/Directors have a relation or relations employed in BHEL, the authority inviting tender shall be informed of the fact along with the offer, failing this BHEL may, at its sole discretion reject the tender or cancel the contract and forfeit the Earnest Money/Security Deposit.
- 1.9.8.** The successful bidder should not sub-contract the part or complete work detailed in the tender specification undertaken by him without written permission of BHEL. The bidder is solely responsible to BHEL for the work awarded to him.
- 1.9.9.** No deviation from the tender specification shall be acceptable to BHEL. Bidders shall confirm their unqualified acceptance of the terms and conditions by giving an undertaking to this effect in a separate letter as specified by BHEL.
- 1.10. NO INTEREST shall be payable by BHEL on Earnest Money or Security Deposit, if applicable, or any money due to the Contractor by BHEL.**

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2.1. DEFINITION: The following terms shall have the meaning hereby assigned to them except where the context otherwise requires. 2.1.1. BHEL or (B.H.E.L Ltd) shall mean Bharat Heavy Electricals Limited a Company registered under Indian Companies Act 1956, with its Registered Office at BHEL House, Siri fort, New Delhi 110 049 or its Authorised Officers or its Resident Engineer or other employees authorized to deal with any matters with which these persons are concerned on its behalf. 2.1.2. “GENERAL MANAGER” shall mean the Officer in Administrative charges of contracting unit of BHEL. 2.1.3. “ENGINEER” or “ENGINEER IN CHARGE” shall mean Engineer who is in-charge for the works referred in Erection Services. The term also includes PROJECT MANAGER, “RESIDENT MANAGER” “SITE ENGINEER “ “ RESIDENT MANAGER” and “ASSISTANT SITE ENGINEER “ of BHEL at the site as well as the Officers in-charge at Head Office. 2.1.4. “SITE” shall mean the place or places at which the plants/equipments are to be erected and services are to be performed as per the specification of this contract. 2.1.5. “CLIENTS OF BHEL” or “CUSTOMER” shall mean the project authorities to whom BHEL is supplying the equipments. 2.1.6. “CONTRACTOR” shall mean the individual, firm or company who enters in to this contract with BHEL and shall include their executors, administrators, successor and permitted assignees. 2.1.7. “CONTRACT” or “CONTRACT DOCUMENT” shall mean/and include the agreement or work order, the accepted appendices of rates, schedules, quantities, if any and general conditions of contract, the special conditions of contract, instructions to the bidders, the drawings, the technical specifications, the special specifications, if any, the tender documents and the Letter of Intent/Acceptance Letter issued by BHEL. Any conditions or terms stipulated by the contractor in the tender document or subsequent letters shall not form part of the contract unless specially accepted in writing by BHEL, in the Letter of intent and incorporated in the agreement. 2.1.8. “GENERAL AND SPECIAL CONDITIONS OF CONTRACT” shall mean the “Instructions to Bidders and General and Special Conditions of Contract” pertaining to the work for which the bidders are called for. 2.1.9. “TENDER SPECIFICATIONS” shall mean the “SPECIFIC CONDITIONS, Technical specifications, appendices, site informations and drawings” pertaining to the work in which the bidders are required to submit their offer, Individual specification number will be assigned to each tender specification.. 2.1.10. “TENDER DOCUMENTS” shall mean the General and Special Conditions of Contract(2.1.8) and tender specification(2.1.9). 2.1.11. “LETTER OF INTENT” shall mean the intimation by a letter to the bidder that the tender has been accepted in accordance with provisions contained in that letter. The responsibility of the contractor commences from the date of issue of this letter and all the terms and conditions of contract are applicable from this date. 2.1.12. “COMPLETION TIME” Shall mean the period by date specified in the acceptance of tender or date mutually agreed upon for handing over of the erected equipment/plant which are found acceptable by the Engineer being of required standard and conforming to the specifications of the contract. 2.1.13. “PLANT” shall mean and cannot the entire assembly of the plant and equipments covered by the contract. 2.1.14. “EQUIPMENT” shall mean all equipments, machinery, materials, structural, Electricals and other components of the plant covered by the contract. 2.1.15. “TESTS” shall mean and include such test or tests to be carried out on the part of the contractor as are prescribed in the contract or considered necessary by BHEL in order to ascertain the quality, workmanship, performance and efficiency of the contract work or part thereof. 2.1.16. “APPROVED” “DIRECTED” or “INSTRUCTED” shall mean approved, directed or instructed by BHEL.		
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2.1.17. “WORK OR CONTRACT WORK” shall mean and include supply of all categories of labour specified consumables, tools and tackles required for complete and satisfactory site transportation handling, stocking, storing, erecting, testing, and commissioning of the equipments to the entire satisfaction of BHEL. 2.1.18. “SINGULAR AND PLURAL ETC” works carrying singular number shall also include plural and vice versa, where the context so required. Words importing the masculine gender shall be taken to include the feminine gender and words imparting persons shall include any company or association or body of individuals, whether incorporated or not. 2.1.19. “HEADINGS” The headings in these general conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or of the contract. 2.1.20. “MONTH” shall mean calendar month, unless specified otherwise in the tender. 2.1.21. “WRITING” shall include any manuscript typewritten or printed statement under the signature of BHEL. 2.2. LAW GOVERNING THE CONTRACT AND COURT JURISDICTION The contract shall be governed by the Law for the time being in force in the Republic of India, and shall be subject to the Jurisdiction of the courts having Jurisdiction over RANIPET (VELLORE Dist, Tamil Nadu). 2.3. ISSUE OF NOTICE: The Contractor shall furnish to the BHEL ENGINEER the name, designation and address of his authorized agent and all complaints, notices, communication and reference shall be deemed to have been duly given to the contractor or his authorized agent or left or posted to the address of either the contractor or of his representative and shall be deemed to have been so give in the case of posting on the day on which they would have reached such address in the ordinary course of post or on which they were so delivered of / or left. 2.4. USE OF LAND: No land belonging to BHEL or their customer under temporary possession of BHEL shall be occupied by the Contractor without the written permission of BHEL. 2.5. COMMENCEMENT OF WORKS: 2.5.1. The Contractor shall commence the works within the time indicated in the Letter of Intent from BHEL and shall proceed with the same with due expedition without delay. 2.5.2. If the successful bidder fails to start the work within the stipulated time, BHEL, at his sole discretion will have the right to cancel the contract. His earnest money and/or Security Deposit with BHEL will stand forfeited without any further reference to him without prejudice to any and all of BHEL's other rights and remedies in this regard. 2.5.3. All the works shall be carried out under the direction and to the satisfaction of BHEL. 2.5.4. The erected/constructed plant or work performed under this contract shall be taken over when it has been completed in all respects and/or satisfactorily put in to operation at site. 2.6. MODE OF PAYMENT AND MEASUREMENT OF THE WORK COMPLETED: 2.6.1. All payments due to the contract shall be paid through E-PAYMENT (EFT / RTGS) only. The contractor has to furnish acceptance for e-payment, duly indicating the bank account details in the prescribed format. 2.6.2. For Progress running bill payment: The contractor shall present detailed measurement working sheets, in quadruplicate, duly indicating all relevant details based on technical documents and connected drawings for work done during the month/period under various categories in line with terms of payment as per letter of intent. The basis of arriving at the quantities/weight shall be the relevant documents and drawings released by BHEL.		
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2.6.3. These measurement working sheets will be checked and vetted by BHEL Engineers and quantities and percentage eligible for payment under various groups shall be decided by BHEL engineers. The abstract of quantities and percentage so arrived based on the terms of payment shall be entered in Measurement Book and signed by both the parties. 2.6.4. Based on the above quantity, contractor shall prepare the bills in prescribed pro-forma and work out the financial value. These will be entered in Measurement Book and signed by both the parties and paid duly effecting recoveries due. 2.6.5. All recoveries due from the contractor for the month/period shall be effected in full from the corresponding running bills unless specific approval from the competent authorities is obtained otherwise. 2.6.6. Measurement shall be restricted to that for which it is required to ascertain the financial liability of BHEL under this contract. 2.6.7. The measurement shall be taken jointly by persons duly authorized on the part of BHEL and by the contractor. 2.6.8. The contractor shall bear the expenditure involved, if any, in making the measurement. The contractor shall, without extra charges provide all the assistance with appliances and other things necessary for measurement. 2.6.9. If, at any time due to any reason, whatsoever, it becomes necessary to re-measure the work done in full or in part, the expenses towards such re-measurements shall be borne by the contractor. 2.6.10. Passing of measurement as per bills does not amount to acceptance of the completion of the work mentioned. Any left out work has to be completed if pointed out at a later date by BHEL. 2.6.11. Final measurement bill shall be prepared in the final bill pro-forma prescribed for the purpose based on the certificate issued by BHEL Engineer that entire work as stipulated in the tender specification has been completed in all respects to the entire satisfaction of BHEL. Contractors shall give unqualified 'No Due' and 'No Demand' certificate. All the tools and tackles loaned to them should be returned in condition satisfactory to BHEL. Quantities/Weight erected shall be prepared and paid, within a reasonable time after completion of work. After payment of final bill, only guarantee obligation percentage shall remain unpaid which shall be released in accordance with clause 2.13. The final bill quantities and financial value shall also be entered in Measurement Book and signed by both the parties to the contract. 2.7 RIGHTS OF BHEL BHEL reserves the following rights in respect of this contract without entitling the contractor for any compensation. 2.7.1. To get the work done through other agency at the risk and cost of the Contractor, in the event of Contractor's poor progress, or inability to progress the work, persistent disregard in instruction of BHEL, assignment transfer, subletting of the contract without permission of BHEL, non fulfillment of any contractual obligation etc., and to recover compensation for such losses from the contractor including BHEL's supervision charges and overheads from Security Deposit / other dues. 2.7.2. To withdraw any portion of work and/or to restrict/alter quantum of work as indicated and get it done through other agency and/or with departmental labor to suit BHEL's commitment to its customer or in case BHEL decides to advance the date of completion due to other emergency reasons/BHEL's obligation to its customer. 2.7.3. To terminate the contract after due notice to cause forfeiting of Security Deposit and recover the loss sustained in getting the balance work done through other agencies in addition to liquidated damages in the event of : 2.7.3.1. Contractor's continued poor progress. 2.7.3.2. Withdrawal from or abandonment of the work before completion of the work.		
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2.7.3.3. Corrupt act of contractor. 2.7.3.4. Insolvency of the contractor. 2.7.3.5. Persistent disregards to the instructions of BHEL. 2.7.3.6. Assignment transfer, sub-letting of the contract without BHEL's permission. 2.7.3.7. Non-fulfillment of any contractual obligations. 2.7.4. To recover any money due from the contractor from any money due to the contractor under this contract or any other contract or from the Security Deposit. 2.7.5. To claim compensation for losses sustained including BHEL's supervision charges and overheads for completion on termination of contract and to impose penalty for delay in completion of the work at the rate of ½% of the contract value per week of delay or part thereof subject to a ceiling of 10% of contract value. 2.7.6. To terminate the contract or to restrict the quantum of work and pay for the portion of work executed in case BHEL's contracts with their customers are terminated for any reason. 2.7.7. To effect recovery from any amount due to the contractor under this or any other contractor in any other form the moneys BHEL is forced to pay to anybody, due to contractor's failure to fulfill any of his obligation. 2.7.8. To restrict or increase the quantity and nature of work to suit the site requirements since the tender specification is based on preliminary documents and quantities furnished there in are indicative and approximate and the rates quoted shall not be subject to revision. 2.7.9. To deploy BHEL's fitters, welders, operators and technicians in case of emergency/poor progress/deficiency in skill on the part of employees of contractor and to recover the expenditure on account of the same from contractor's bills. 2.7.10. While every endeavor will be made by BHEL they cannot guarantee un-interrupted work to the contractor due to conditions beyond their control. Contractor will not be entitled for any compensation extra payment on his account. 2.7.11. In the event of any dispute of any nature, the decision of BHEL shall be final and binding on the contractor. 2.7.12. Cancellation of contract in part or full for contractor's default: If the contractor: a) Makes default in commencing the work within a reasonable time from the date of handing over of the site and continue in that state after a reasonable notice from Engineer-in-charge. OR b) in the opinion of the Engineer-in-charge at any time whether before or after the date / extended date for completion, make default in proceeding with the work, with due diligence and continue in that state after a notice of seven days from Engineer-in-charge OR c) fails to comply with any of the terms and conditions of the contract or after 7 days notice in writing with orders properly issued there under OR d) fails to complete the work order and items of work as per individual dates for completion and clear the site on or before the date of completion or fails to achieve the progress set out in accordance with the provisions of contract.		
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The Accepting Officer may, without prejudice to any other right or remedy which shall have accrued or shall accrue to BHEL, cancel the contract as a whole or in part thereof or only such work order items of work in default from the contract. Whenever the Accepting officer exercises his authority to cancel the contract as a whole or in part under this condition he may complete the work at the contractor's risk and cost, provided always that in the event of the cost of completion (as certified by Engineer-in-charge, which is final and conclusive) being less than the contract cost the advantage shall accrue to the BHEL. If the cost of completion exceeds, the money due to the contractor under this contract the contractor shall either pay the excess amount ordered by General Manager or the same shall be recovered from the contractor by other means. Engineer-in-charge will have power to take possession of site and materials, constructional plant, implements, stores etc there on. In case BHEL completes the work or any part thereof under the provisions of the contract conditions, then such completion is to be taken in to account in determining the excess cost to be charged to the contractor under this condition and shall consist of the cost of materials purchased and / or labour provided by BHEL, with an addition of such percentage to cover superintendence and establishment charges as may be decided by the General Manager, whose decision shall be final and conclusive.		
2.7.13. If the contractor fails to pay the excess sum within a period of 30 days the Engineer-in-charge shall have the right to sell any or of the contractor's unused materials, construction plant, implements, temporary buildings etc., and apply the proceeds of sale thereof towards the satisfaction of any sum due from the contractor under the contract and if there after be any balance out standing from the contractor, it shall be recovered in accordance with the provisions of the contract.		
2.7.14. BHEL shall have the right to recover any money due from the contractor from any money due to the contractor under this contract or any other contract or from the Security Deposit.		
2.8. RESPONSIBILITIES OF THE CONTRACTOR IN RESPECT OF LOCAL LAWS, EMPLOYMENT OF WORKERS Etc. The following are the responsibilities of the Contractor in respect of observation of local laws, employment of personnel, payment of taxes etc.		
2.8.1. As far as possible unskilled workers shall be engaged from the local areas in which the work is being executed.		
2.8.2. The contractor at all times during the continuance of this contract shall, in all his dealings with local labour for the time being employed on or in connection with the work, have due regard to all local festivals, religious and other customs.		
2.8.3. The contractor shall comply with all state and Centrals Laws, Statutory Rules, Regulations etc., inclusive of those regarding labour and industrial laws which are applicable from time to time and they shall comply with the provisions of the said labour legislations, rules and regulations framed under the provisions of Employees Provident Fund and Miscellaneous Provisions Act 1952 shall be strictly followed.		
2.8.4. The contractor shall pay all taxes, including sales Tax on works contract if any fees, license, charges, deposits duties, tool royalty commissions or other charges which may be leviable on account of any of his operations in execution of the contract in case BHEL is forced to pay any of such taxes. BHEL shall have the right to recover the same from the contractor either from his bills or other wise as deemed fit.		
2.8.5. While BHEL would pay the inspection fees, of the Boiler Inspectorate, all other arrangements for the visits periodically by Boiler Inspector to site, Inspection Certificate etc., will have to be made by the contractor. However BHEL will not make any payment to Boiler Inspector in connection with contractor's welders qualification/requalification tests etc.		
2.8.6. The contractor shall be responsible for provision of health and sanitary arrangements (more particularly described in Contract Labour Regulation & Abolition Act) safety precautions etc., as may be required for safe and satisfactory execution of the contract.		
2.8.7. The contractor shall be responsible for providing proper accommodation including adequate medical facilities for the personnel employed by him.		
2.8.8. The contractor shall be responsible for the proper behavior and observance of all regulations by the staff employed by him.		
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2.8.9. The contractor shall ensure that no damage is caused to any person/property of other parties working at site. If any such damage is caused it is the responsibility of the contractor to make good the losses or compensate for the same. 2.8.10. All the properties/equipments/components of BHEL their client loaned with or without deposit to the contractor in connection with contract shall remain the properties of BHEL/their client. The contractor shall use such properties for purpose of execution of this contract, all such properties/equipments/components shall be deemed to be in good condition when received by the Contractors unless he notifies within 48 hours to the contrary. The Contractor shall return them in good condition as and when required by BHEL/their client. In case of non-return, loss, damage, repairs etc, the cost thereof, as may be fixed by the site Engineer, will be recovered from the Contractor. 2.8.11. It is not obligatory on the part of BHEL to supply any tools and tackles or other materials other than those specifically agreed to do so by BHEL. However, depending upon the availability/possibility BHEL's customer's handing equipment and other plants may be made available to the contractor on payment of the hire charges/free of charges, as fixed subject to the conditions laid down by BHEL/Customer from time to time. Unless paid in advance such hire charges if applicable shall be recovered from contractors bills/security deposit in one installment. 2.8.12. The Contractor shall fully indemnify BHEL against all claims of whatsoever nature arising during the course of erection/construction/performing work under the contract. 2.8.13. In case the Contractor is required to undertake any work outside the scope of this contract the rate payable shall be those mutually agreed upon. 2.8.14. Any delay in completion of works/non-achievement of periodical targets, due to reasons attributable to the contractor, the same will have to be compensated by the Contractor either by increasing manpower and resources or by working extra hours and/or by working more than one shift. All these are to be carried out by the contractor at no extra cost. 2.8.15. The contractor shall arrange and co-ordinate his work in such a manner as to cause no hindrance to other agencies working in the same premises. 2.8.16. All safety rules and codes applied by the client/BHEL at site shall be observed by the contractor without exception. The contractor shall be responsible for the safety of the equipment/material and works to be performed by him and shall maintain all light, fencing guards signs etc, or other protection necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Engineer with a view prevent pilferage, accidents, fire hazards and due precautions shall be taken against fire hazards and atmospheric conditions. Suitable number of clerical staff, watch and ward, store keepers to take care of equipment, materials and construction tools and tackles shall be posted at site by the contractor till the completion of the work under this contract. The contractor shall arrange for such safety devices as are necessary for such type of work and carry out the requisite site tests of handling equipments, lifting tools, tackles, etc., as per prescribed standards and practices. 2.8.17. The contractor will be directly responsible for payment of wages (Minimum wage as per statutory requirement of government) to his workmen. A pay roll sheet giving all the type payments given to the workers and duly signed by the contractor's representative should be furnished to BHEL Site office on or before 15th of every succeeding month. 2.8.18. In case of any class of work for which there is no such specification as laid down in the contract, such work shall be carried out in accordance with the instructions and requirements of the Engineer. 2.8.19. No levy of payment or charge made or imposed shall be impeached by reason of any clerical error or by reason of any mistake in the amount levied or demanded or charged. 2.8.20. Also no idle labour charges will be admissible in the event of any stoppage caused in the work resulting contractor's labour being rendered idle due to any cause at any time. 2.8.21. The contractor shall take all reasonable care to protect the materials and work till such time the plant/equipment has been taken over by BHEL/their client. Contractor shall not stop the work or abandon the site for whatsoever reason or dispute, excepting for force major conditions. All such problems/dispute, shall be separately discussed and settled without affecting the progress of work. Such stoppage or abandonment shall be treated as breach of contract and dealt with accordingly.		
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2.9. CONSEQUENCES OF CANCELLATION: Whenever BHEL exercises its authority to terminate the contract/withdraw a portion of work under the clause 2.7 they may complete the work by any means. In the event of the cost of completion as certified by the site Engineer which is final and conclusive being less than the contract cost, the advantage shall accrue to BHEL and that if the cost of completion exceeds the moneys due to the contractor under the contract, the contractor shall either pay the excess amount ordered by BHEL or the same shall be recovered from the contractor by any other means. This will be in addition to the forfeiture of Security Deposit and recovery of liquidated damages as per the relevant clauses. 2.9.1. In case BHEL completes the work under the provision of this condition, the cost of such completion to be taken into account in determining the excess cost to be charged to the contract under this condition, shall consist of materials purchased and/or labour provided by BHEL with an addition of such percentage to cover supervision and establishment charges as may be decided by BHEL. 2.10 INSURANCE: 2.10.1. BHEL/their customer shall arrange for insuring the materials/properties of BHEL / customer covering the risks during transit, storage, erection and commissioning. 2.10.2. It is sole responsibility of the contractor to insure his workmen against accidents and injury while at work and travel from their HQ to work area and back as required by relevant Rules and to pay compensation as detailed below to workmen as per workmen's Compensation Act. The work will be carried out in a protected area and all the rules and regulations of the client/BHEL in the area of project which are in force from time to time will have to be followed by contractor. Compensation to employees: The contractor shall provide compensation to their employees against death / permanent disablement while on work as detailed below: - In the event of death or permanent disability resulting from Loss of both limbs Rs. 10,00,000/- (Rupees Ten Lakhs Only). - In the event of other permanent disability Rs. 7,00,000/- (Rupees Seven Lakhs Only). (Permanent disablement that is classified as total disablement under section 2(1) of the Employees' Compensation Act, permanent 1923.) 2.10.3. If due to negligence and/or non-observance of safety and other precautions, any accident/injury occurs to any other persons/public, the contractor shall have to pay necessary compensation and other expenses if so decided by the appropriate authorities. 2.10.4. If due to contractor's carelessness's, negligence of non-observance of safety precautions damage to BHEL's /customer's property and personnel should occur and if BHEL is unable to recover in full cost from the insurance company, the same will be recovered from the contractor. 2.10.5. It shall be the responsibility of the contractor to provide security arrangement for the equipment/ materials belonging to BHEL and handed over to the contractor for erection/transportation till the same are taken over by BHEL after erection/returned to BHEL stores. 2.11. STRIKES & LOCKOUTS: 2.11.1. The contractor will be fully responsible for the entire dispute and other issues connected with his labour. In the event of the contract labour resorting to strike or the contract resorting to lock-out and if the strike or lock-out declared is not settled within a period of one month, BHEL, shall have the right to get the erection work executed employing its won labour or through any agencies or both and the cost so incurred by BHEL be deducted from the contractor's bills. 2.11.2. For any purpose whatsoever the employees of the contractor shall not be deemed to be in the employment of BHEL. SIGNATURE OF THE CONTRACTOR WITH SEAL		

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2.12. FORCE MAJEURE:		
2.12.1 The following shall amount to FORCE MAJEURE:		
Act of God or of any Government, War, Sabotage, Riots, Civil commotion, Police action revolution, Flood, Fire, Cyclones, Earth quake and epidemic and other similar causes over which the contractor has no control.		
2.12.2. If the contractor suffers delay in the due execution of the contractual obligation due to delays caused by FORCE MAJEURE as defined above, the agreed time of completion of the job covered by this contract or the obligation of contractor shall be extended by a period of time equal to the period of delay provided that on the occurrence of any such contingency the contractor immediately reports to BHEL in writing the causes of delay and the contractor shall not be eligible for any compensation.		
2.13. GUARANTEE:		
Even though the work will be carried out under the supervision of BHEL Engineers the contractor will be responsible for the quality of the workmanship and shall guarantee the work done for a period of twelve months from the date of completion of work as certified by the Engineer for good workmanship and shall rectify free of cost all defects due to faulty erection, detected during the guarantee period starting from the date of the completion of rectification. In the event of the contractor failing to repair the defective works within the time specified by the Engineer, BHEL may proceed to undertake the repairs of such defective works at the contractor's risk and cost, without prejudice to any other rights and recover the same from Security Deposit/other dues or by other legal means.		
2.14. ARBITRATION:		
Except where otherwise provided for in the contract all questions and disputes relating to the meaning of the specifications, designs, drawings and instructions herein before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in anyway arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the work or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the sole arbitration. The parties agree that the sole arbitrator shall be appointed by BHEL.		
The cases referred to arbitration shall be other than those for which the decision of the Accepting Officer, or Engineer-in-charge as the case may be is expressed in the contract to be final and conclusive		
Subject as aforesaid the provision of the Arbitration and Conciliation Act 1996 or any statutory modification or reenactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.		
It is a term of the contract that the party involving arbitration shall specify the dispute or dispute to be referred to arbitration under this clause together with the amount or amounts claimed in respect of each such dispute.		
The arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties fixing the date of first hearing.		
The arbitrator shall give a separate award in respect of each dispute or difference referred to him.		
The place of arbitration shall be Ranipet. However the arbitrator may hold the proceedings at any venue as per discretion. The award of the Arbitrator shall be final conclusive and binding on all parties to this contracts.		
SIGNATURE OF THE CONTRACTOR WITH SEAL		

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FIELD ENGG. SERVICES DEPARTMENT	GENERAL CONDITIONS OF CONTRACT ES : F : 010
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SECTION –II		
In the event of disputes or differences arising between one public sector and a Government Department or between two public sector enterprises the above stipulations shall not apply, the provisions of BPE Office memorandum No.BPE/CL/001/76 MAN/2(1.10)76-BPE(GM-1)dated 1st January 1976 or its amendments for arbitration shall be applied.		
2.15. Suspension of Business dealings with Suppliers/contractors:		
Any supplier against whom action has been initiated under “suspension of business dealings with suppliers” are not qualified to participate in this tender. Before submitting offer, prospective bidders are advised to visit our web-site www.bhel.com / supplier registration to familiarize themselves with BHEL’s policy and procedures of Suspension of Business Dealings with Suppliers.		
Submission of offer shall be deemed to be evidence of the Bidder to have read and understood the above said policy.		
ii) Treatment of Banned / Under-performing Vendors:		
Any supplier who has been put on “Hold” or “Banned” from having business dealings with BHEL, Ranipet or any other unit of BHEL shall not submit their offer against this tender. If any such offers are received they would be summarily rejected and sent back. During the processing of tender, if any unit of BHEL puts a supplier on “Ban” then further processing of the offer will not be taken up and in case an order is placed, BHEL, Ranipet may resort at their discretion to cancel the PO either fully or partially.		
e) Fraud Prevention Policy:		
The Bidder along with its associate/ collaborators/ sub-contractors/ sub-vendors/ consultants/ service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website http://www.bhel.com and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.		
SIGNATURE OF THE CONTRACTOR WITH SEAL		

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FIELD ENGG. SERVICES DEPARTMENT	GENERAL CONDITIONS OF CONTRACT ES : F : 010
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CONTRACT AGREEMENT

AGREEMENT NO: BAP : ERN : BHE :

DATE:

Name of work :

Name of the contractor with full address :

Amount of tender accepted :

Letter of Intent No. :

Time allotted for completing the work (date of completion) :

(Officer authorized to sign the agreement)

CONTRACTOR

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FIELD ENGG. SERVICES DEPARTMENT	GENERAL CONDITIONS OF CONTRACT ES : F : 010 Page No.: 18 of 19
ANNEXURE 'E' PROFORMA FOR SECURITY DEPOSIT		
THIS DEED OF GUARANTEE made this day of _____ by Messrs. _____ (hereinafter called the Bank) in favour of Messrs. <u>BHARAT HEAVY ELECTRICALS LIMITED, RANIPET</u> having its Registered Office at New Delhi (hereinafter called the Principal) WHEREAS Messrs. _____ (hereinafter called the Contractor) has entered in to a Contract with Bharat Heavy Electricals Ltd., Ranipet arising out of Letter of Intent No. _____ Dt. _____ addressed by the Principal to the Contractor (hereinafter called the said agreement) for AND WHEREAS the said Agreement provides that the contractor shall pay a sum of Rs. _____ (Rupees _____ only) towards 50% of full Security Deposit to be made in the form and manner therein specified. AND WHEREAS the Contractor have approached the Bank and at their request and in consideration of the agreement arrived at between the said contractor and the Bank, the Bank has agreed to give such guarantee as hereinafter mentioned to the Principal. NOW, therefore, these present witness that we the Bank by the hand Mr. _____ its lawfully and duly constituted attorney, do hereby undertake to pay to the principal a sum of Rs. _____ (Rupees _____ only) without demur on demand being made by the principal and to keep the principal indemnified to the extent of Rs. _____ by virtue of this guarantee against any loss or damage caused to or suffered by the principal by reason of any breach by the aforesaid contract of any of the terms and or conditions, stipulations or undertakings of any one of them contained in the said Agreement and the tender documents attached thereto and for the payment of any money or moneys payable by the said contractor to the principal under the terms and conditions of the said Agreements (the decisions regarding the breach, loss damage or payment due being solely in the discretion of the Principal). We further undertake to pay without demur the aforesaid amount in a lump sum on demand or such part thereof as the Principal may demand from time to time irrespective of the fact whether the said contractor admits or denies such claim or questions its correctness in any Court Tribunal or Arbitration Proceedings or before any authority. The aforesaid guarantee will remain in force and we shall be liable under the same irrespective of any concession or time being granted by the principal, to the Contractor in or fulfilling the said agreement between contractor and the principal and the guarantee will remain in full force irrespective of any change of terms, conditions or stipulation or any variation in the terms of the said agreement irrespective of whether notice of such change or variation is given to us or not and claim to receive such notice of any change/and or variation of the terms and or variation of the terms and or/conditions of the said agreement is hereby specifically waived by us. Further we shall not be release from this guarantee by any forbearance of the exercise or non-exercise of any of the powers or rights under the said agreement by the principal against the contractor irrespective of whether notice of such forbearance enforcement or non-enforcement of any powers or rights, modifications or change made in the said agreement or concessions shown to contractor by the principal is given to us or not. The guarantee herein contained shall not be determined or affected by the liquidation or winding up or insolvency of or change in the constitution of the contractor but shall in all respects and for all purposes be binding and operative until all payments of all moneys due or that may hereafter become due to the principal in respect of any liability or obligations of the contractor under the said agreement. We, the Bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the principal under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till the principal certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said contractor and accordingly discharges the guarantee subject to however that the principal shall have no rights under this guarantee after the expiry of six months from the date of completion of the contract (the date of completion shall be as certified by the Principal) unless this guarantee is extended by agreement. Any claim or dispute arising under the terms of this contract shall only be enforced or settled in the Court having jurisdiction over RANIPET (VELLORE Dist, Tamil Nadu) And lastly the Bank undertakes not to revoke this guarantee during its currency except with the previous consent of the principal in writing. The bank hereby declares that it has power to issue this guarantee under that Bank's Memorandum and Articles of Association and the undersigned has power to do so on its behalf under the power of Attorney granted to him by the proper Authorities of the Bank.		
Date:		(Name of the Bank & Place)
Seal:		DESIGNATION OF THE AUTHORISED PERSON SIGNING THE GUARANTEE

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FIELD ENGG. SERVICES DEPARTMENT	GENERAL CONDITIONS OF CONTRACT ES : F : 010 Page No.: 19 of 19
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ANNEXURE –‘F’ NO DEMAND CERTIFICATE

1) Name of work :

2) Agreement Date :

3) I/We certify that

- a) I/We have completed the above work to the entire satisfaction of BHEL.
- b) I/We have handed over all the balance materials, components, tools and tackles, machinery and other equipment of BHEL.
- c) I/We have received the final payment from BHEL for the above work.
- d) I/We have no further demand whatsoever from BHEL.

I/We, therefore request you to refund to me/us the security deposit of

Rs. _____.

(Rupees _____ only)

and the Bank guarantee No.: _____ dt. _____.

Rs. _____.

After deducting all cost of expenses or other amounts that are to be paid by me/us to BHEL under this contractor other contract entered into by me/us with BHEL.

**SIGNATURE OF THE
CONTRACTOR WITH SEAL**

Place:
Date:
Witness 1)

 2)

 3)

SPECIAL CONDITIONS OF CONTRACT

FOR

PG Test

BAP:FES :SPN :PG TEST



FES DEPARTMENT

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

BOILER AUXILIARIES PLANT

INDIRA GANDHI INDUSTRIAL COMPLEX

RANIPET – 632 406

GENERAL TERMS AND CONDITIONS OF REVERSE AUCTION

BHEL reserves the right to go for reverse auctioning among the technically qualified bidders who have been sort listed after technical bid evaluation. "BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno commercial evaluation. All bidders to give their acceptance for participation in RA. **Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.**

In case BHEL decides to go for Reverse Auction, only those bidders who have given their acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit "online sealed bid" in the Reverse Auction. Non-submission of "online sealed bid" by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue."

The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid. The envelope sealed price bid of successful L1 bidder in RA shall also be opened after RA and the order will be placed on lower of the two bids.

If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid, the bidder will be issued a warning letter to this effect. However, if the bidder repeats again it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors.

TERMS & CONDITIONS OF REVERSE AUCTION:

Against these works at BHEL, Ranipet shop floors may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

- a. or the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
- b. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit "online sealed bid" in the Reverse Auction. Non-submission of "online sealed bid" by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
- c. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
- d. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
- e. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
- f. Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
- g. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, GST for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
- h. Reverse auction will be conducted on scheduled date & time.
- i. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
- j. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
- k. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.
- l. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the "Business Rules of Reverse Auction", which will be communicated before the Reverse Auction.
- m. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
- n. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
- o. In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process. In case of tie for H1 bid (identical online sealed bids), 15 minutes additional time shall be provided and all the participating bidders shall be informed by mail/ message on bidding screen to enable bidders submit revised online sealed bids so as to break the tie.
- p. BHEL reserves the right to negotiate with the L1 tenderer emerged out of Reverse Auction if the L1 amount is more than the estimated amount.

For more details, please visit our BHEL website <http://www.bhel.com> (Revision of 'Guidelines for Reverse Auction', issued on 26.09.2016.)

**SIGNATURE OF THE
CONTRACTOR WITH SEAL**

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FES DEPARTMENT	STATUTORY REQUIREMENT OF CONTRACT ES : F : 009 Page No.: 01 of 11
STATUTORY REQUIREMENT <i>OF</i> CONTRACT (FORMATS & PROCEDURES) <u>ES : F : 009</u>		
 R 05- 275 FIELD ENGG. SERVICES DEPARTMENT BHARAT HEAVY ELECTRICALS LIMITED (A Government of India Undertaking) BOILER AUXILIARIES PLANT INDIRA GANDHI INDUSTRIAL COMPLEX RANIPET – 632 406		

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FES DEPARTMENT	STATUTORY REQUIREMENT OF CONTRACT ES : F : 009 Page No.: 02 of 11
CHECK LIST		
Bidders are required to fill in the following details:		
1.a	Name of the Bidder With address, Phone No., Mobile No., Fax and e-mail.	
1.b	Nature of Firm (Whether Proprietary, Partnership, Pvt. Ltd, Others-Specify)	
2	Whether EMD submitted as per tender Specification Terms and conditions	Yes / No
3	Validity of offer (offer shall be kept valid for acceptance for a period of minimum 6 months)	Yes / No
4	Whether the following details are furnished.	
4.a	Previous Experience – Photocopies as in QR	Annexure-B-I & B-II
4.b	Present assignments	Yes / No
4.c	Organization chart of the Company	Annexure-C
4.d	Financial status of the Company	Annexure-A
4.e	In case of Company, proof of registration of the Company	Yes / No
4.f	Memorandum and Articles of Association of Company / copy of Partnership Deed.	Yes / No
4.g	Income Tax clearance Certificates	Yes / No
4.h	Solvency Certificate from a Nationalized Bank	Yes / No
4.i	Power of Attorney of the person signing the tender duly attested by a Notary Public	Yes / No
4.j	Names and addresses of Directors, Partners their Experience and qualification	Yes / No
4.k	EPF regn No. (with a copy of certificate)	
4.l	GST regn No. (with copy of cert')	
4.m	E- Payment acceptance as per appendix.	Yes / No
4.n	Rate schedule as per the schedule appended	Yes / No
5	Whether the Bidder is conversant with local labour laws and conditions	Yes / No
6	Whether the Bidder is aware of all safety Rules and codes.	Yes / No
7	Whether the declaration sheet (as per appendix enclosed) filled	Yes / No
8	Whether all the pages are read, understood and signed	
SIGNATURE OF BIDDER NOTE : The Bidders are requested to peruse the Tender Specification terms and conditions carefully and furnish the above information also in detail as required.		

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FES DEPARTMENT	STATUTORY REQUIREMENT OF CONTRACT ES : F : 009
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OFFER OF THE BIDDER
(FORMAT - To be typed written in LETTER HEAD and submitted along with offer)

To

The Addl. General Manager
FES & ES Dept,
Bharat Heavy Electricals Limited,
Boiler Auxiliaries Plant,
Indira Gandhi Industrial Complex,
RANIPET –632 406. (TAMIL NADU).

Sir,

I / We hereby offer to carry out the work detailed in the Tender Specification No. _____ issued by M/s. Bharat Heavy Electricals Limited, Boiler Auxiliaries Plant, Ranipet in accordance with the terms and conditions thereof:

I/ we have carefully pursued the following documents connected with the above work and agree to abide by the same. We herewith confirm that we have visited the site _____.

a. General terms and conditions of work (ES: F:010)
b. Statutory requirement of Contract (ES: F:009)
d. Tender Specification no. (_____.)
e. Special Instructions to Bidder
f. General terms and conditions of Reverse Auction.

I/We have deposited / forwarded herewith the Earnest Money Deposit in the form prescribed and as stipulated in Clause No.1.4. of the General Conditions of Contract for Works towards the Earnest Money Deposit for a sum of **Rs.**
(Rupees. _____, only)
vide Pay Order No. _____ Dt. _____ 2015 /
Demand Draft No. _____ Dt. _____ 2015 which shall be refunded should our offer not be accepted. Should our offer be accepted, I/We further agree to deposit such additional sum, within the stipulated time as may be indicated by BHEL, which along with the sum of **Rs.**
(Rupees. _____, only)
shall make up the Security Deposit for the work as provided for in clause 1.8.2 of the General Conditions of Contract for Works.

I/We further agree to execute all the works referred to in the said documents upon the terms and conditions contained or referred to therein and as indicated in the Annexure enclosed thereto.

SIGNATURE OF BIDDER:		
Place:		ADDRESS:
Date:		

WITNESSES WITH FULL ADDRESS

	SIGNATURE	NAME	ADDRESS
1			
2			
3			

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FES DEPARTMENT	STATUTORY REQUIREMENT OF CONTRACT ES : F : 009	
		Page No.: 04 of 11	
APPENDIX – II (To be filled by Tenderer and submitted along with Tender document)			
S.No.	PARTICULARS	YES	NO
01	GST		
a.	GST Registration No. of Tenderer (copy to be enclosed)		
b.	Issue of GST Invoice as per Rule 9 of Cen vat Credit rules2004		
c.	Whether Tenderer is taking GST Credit for their Inputs		
d.	Under which Service Head is Service provided		
e.	If GST is Exempted , furnish reasons		
f.	BHEL GSTNo. (To indicate in your Invoice) : GSTIN: 33AAACB4146P2ZL		
02	INCOME TAX		
a.	PAN No. of Tenderer		
b.	If Exempted , furnish exemption Certificate		
c.	PAN No. of BHEL : AAACB/4146/P		
03			
a.			
b.			
c.			
d.	If Exempted , furnish Reasons		
	NOTE :		
	1. Rates Quoted shall be clearly indicated that they are INCLUSIVE of all Taxes & Duties except GST. The Contractor has to issue invoice accordingly. Also refer clause 15.0 of Tender specification regarding Taxes & Duties		
	2. Payment will be made <u>only through e-payment</u> to your account. Payment through Cheque / DD payment will not be made by BHEL.		
Tenderer has to submit Banker's Certificate as per format specified in APPENDIX- IV.			
Agreed to the Above Conditions			
Signature of the Tenderer :			

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FES DEPARTMENT	STATUTORY REQUIREMENT OF CONTRACT ES : F : 009
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APPENDIX - III**ACCEPTANCE FOR ELECTRONIC FUND TRANSFER / RTGS TRANSFER**

01	NAME & ADDRESS OF THE SUPPLIER / VENDOR MOBILE, PHONE NO. WITH STD CODE																
	PAN NO.																
02	VENDOR CODE (as in Purchase Order)																
03	Details of Bank Account:																
A)	NAME & ADDRESS OF THE BANK (WITH PIN CODE)																
B)	BANK TELEPHONE NUMBER (WITH STD CODE)																
C)	BANK BRANCH CODE																
D)	MICR CODE																
E)	ACCOUNT NUMBER																
F)	TYPE OF ACCOUNT	CURRENT A/C / OD / CASH CREDIT															
G)	Vendor name as per Bank records																
H)	BANK BRANCH RTGS IFSC CODE																
I)	BANK BRANCH NEFT IFSC CODE																
J)	VENDOR'S EMAIL ID (give two ids)																
1																	
2																	
K)	NAME OF AUTHORISED SIGNATORY																

CERTIFICATE

I / We hereby agree to receive the payments due from BHARAT HEAVY ELECTRICALS LIMITED, RANIPET by the National Electronic Funds Transfer and/or RTGS Transfer mode by credit to my / our above mentioned Bank Account. I / We also agree that payments made to the above mentioned Account is a valid discharge of the liability of Bharat Heavy Electricals Limited, Ranipet. I / We also agree to bear the applicable Bank Charges for the above mode of transfer.

AUTHORISED SIGNATORY OF VENDOR WITH SEAL**Banker's Certification**

We confirm that we are enabled for receiving RTGS and NEFT credits and we further confirm that the account number of _____ (name of account holder), the signature of the authorized signatory and the MICR and IFSC codes of our Branch mentioned above are correct.

PLACE:

DATE:

(Manager / Officer's signature Under Bank stamp)
 Authorization No. _____.

Note: This EFT Form is to be submitted duly filled in manually in all fields and duly signed by Authorised Signatory and certified by Banker.

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FES DEPARTMENT	STATUTORY REQUIREMENT OF CONTRACT ES : F : 009
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APPENDIX – IV

Certified by Chartered Accountant on letter head

This is certify that M/s,
(hereinafter referred to as ‘company’) having its registered office at
..... is registered under MSMED Act 2006, (Entrepreneur
Memorandum No (part-II) dtd. :.....
Category:.....(Micro/Small)).(Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as on date
..... as per MSMED Act 2006 is as follows:

- For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No.S.O.1722(E) dated 5, 2006 :
Rs..... Lakhs
- For Services Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:
Rs..... Lakhs

The above investment of Rs..... Lakhs is within permissible limit of
Rs..... Lakhs for Micro/Small **(Strike off
which is not applicable)** Category under MSMED Act 2006.

Date:

(Signature)

Name –

Membership Number –

Seal of Chartered Accountant

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FES DEPARTMENT	STATUTORY REQUIREMENT OF CONTRACT ES : F : 009 Page No.: 07 of 11
CERTIFICATE OF NO DEVIATION (FORMAT - To be typed written in LETTER HEAD and submitted along with offer)		
I / Weof M/s hereby certify that there is no deviation from the Tender conditions either technical or commercial and I am / We are agreeing to all the terms and conditions mentioned in the Tender Specification No. : BAP : FES: PG TEST 2019.		
Date : SIGNATURE OF THE BIDDER		

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FES DEPARTMENT	STATUTORY REQUIREMENT OF CONTRACT ES : F : 009
		Page No.: 08 of 11
DECLARATION SHEET (FORMAT - To be typed written in LETTER HEAD and submitted along with offer)		
I, hereby certify that all the information and data furnished by me with regard to this Tender Specification No. BAP : FES: PG TEST 2019 are true and complete to the best of my knowledge. I have gone through the specification, conditions and stipulations in detail and agree to comply with the requirements and intent of specifications. Further certify that I am duly authorized representative of the under mentioned Bidder and a valid power of Attorney to this effect is also enclosed.		
BIDDER'S NAME AND ADDRESS:		
AUTHORISED REPRESENTATIVE'S SIGNATURE WITH NAME AND ADDRESS		

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet - 632 406 FES DEPARTMENT		STATUTORY REQUIREMENT OF CONTRACT ES: F : 009	
		Page No.: 09 of 11		
<u>FINANCIAL VIABILITY (Annexure-A)</u>				
Sl	Aspects		Rs.	To be filled-up
1	Owner's Capital in the business (In case of Partnership please Mention percentage of shares and Amount)		Rs.	
2	Quantum of business done during Last three financial years.	Year 20 ____ - ____	Rs.	
		Year 20 ____ - ____		
		Year 20 ____ - ____		
		(Year 20 ____ - ____)		
3	Value of Fixed Assets of the business in last three years	Year 20 ____ - ____	Rs.	
		Year 20 ____ - ____		
		Year 20 ____ - ____		
		(Year 20 ____ - ____)		
4	Guarantee limits (if any) Enjoyed by the firm		Rs.	
5	Overdraft limits (if any) Enjoyed by the firm		Rs.	
6	Income Tax paid during the last three Years	Year 20 ____ - ____	Rs.	
		Year 20 ____ - ____		
		Year 20 ____ - ____		
		(Year 20 ____ - ____)		
7	Please state whether audited profit and Loss Account and Balance Sheet for last 3 Years and Solvency Certificate are Enclosed.			Yes / No
Note: All the above documents should be duly certified by auditors/bank as may be applicable.				
Signature of the Bidder				

	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FES DEPARTMENT		STATUTORY REQUIREMENT OF CONTRACT ES : F : 009		
Ranipet			Page No.: 10 of 11		
ORGANISATION STRUCTURE Annexure -C					
1	Management structure of the firm (Whether public limited / Private Limited / Sole Proprietorship / Partnership)				
2	Details of the staff presently on permanent rolls of the organization		Attach a separate sheet if required		
2a	Engineering / Supervisory Staff.		Indicate Experience in types of works as well as No. of Years in each		
Sl	Name and Designation	Qualification	Experience In Years	Proposed to be deployed at the Site for this job Yes/No	Remarks if any
Date : SIGNATURE OF THE BIDDER					

 Ranipet	Bharat Heavy Electricals Limited Boiler Auxiliaries Plant, Ranipet –632 406 FES DEPARTMENT	STATUTORY REQUIREMENT OF CONTRACT ES : F : 009	
		Page No.: 11 of 11	
ANALYSIS OF UNIT RATE QUOTED (<u>Only Percentages to be Quoted</u>)			
SI-No	Description	Percentage of the rate quoted	Remarks, If any
1	Fixed expenses towards a. b. c. etc		
2	Salary & wages for staff and workers		
3	Overheads		
4	Extra work incidental to Testing		
NOTE: All Bidders are requested to take care that the rates quoted by them are not disclosed in any way while furnishing the above details.			
Date : SIGNATURE OF THE BIDDER			

TENDER DOCUMENT (TENDER SPECN No : BAP : FES: PG TEST 2019)**Price-Bid** to be submitted along with **Part-II** ie. Price Bid***(1. GST Percentage 2. Total of Part A & Part B including GST amount alone to be filled in this copy)**

Name Of Work : (For Detailed Scope Of Work Please Refer The Tender Specification.)

NAME OF WORK: Service Charges for conducting Performance Guarantee Test in Electrostatic Precipitator (ESP) of 270MW and below & 500MW and above at various Power Plants as per laid down procedure. The objective is to determine the collection efficiency, pressure drop and auxiliary Power consumption of Electrostatic Precipitator. The collection efficiency to be calculated based on the dust concentrations at the inlet and outlet of precipitator. The scope of this work involves (A) Measurement of parameters like flue gas flow rate, flue gas temperature, dust concentration at the inlet & outlet of electrostatic precipitator, corona / auxiliary power measurements. (B) Providing of service engineer for the above scope of work.

EXECUTION PERIOD : Two Years from date of LOA / CONTRACT

Schedule	Description	Unit	QTY	% Weightage of each item for One year w.r.to Total amount (excluding GST)
1	Service charges per service engineer deployed for preparation and conductance of ESP PG test.	Number of service engineer days	2250	90.23%
2	To & Fro Conveyance for conducting ESP PG test across India per person.	No	225	9.77%
			Total weightage	100%
3	Total amount in Rs. Excluding GST (Sch1 + Sch2) TO BE QUOTED BY THE BIDDER ----->			
4	GST Amount in Rs. @ _____ %			
5	Total amount in Rs. including GST (Sch1 + Sch2) TO BE QUOTED BY THE BIDDER -----> i.e. Sl.no.5 = Sl.no.3 + Sl.no.4			

(Total amount including GST in words: _____)

Note:

1. Total value with GST quoted will be taken into account for arriving at L1 bidder.
2. Total value with GST quoted will be apportioned to total value of Schedule 01 and Schedule 02 as per the percentage indicated after deducting GST Value. The rate for schedule 01 and Schedule 02 will be calculated based on the Quantity and total value arrived for each schedule.
3. The rate arrived shall be rounded off to the nearest rupee and the total value will be arrived for contract and payment purpose.
4. Price quoted shall be Firm throughout the contract period and incase of extension period also.
5. The above rates are quoted after having fully read and understood the enquiry terms and conditions.
6. Any other entry elsewhere (individual item rate, if any) in the Price bid by the bidder shall be treated as Null and Void.

**SIGNATURE OF THE
CONTRACTOR WITH SEAL**

**PERFORMANCE TEST PROCEDURE
OF
ELECTROSTATIC PRECIPITATOR**





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TECHNICAL SERVICES
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BHARAT HEAVY ELECTRICALS LIMITED
RANIPET - INDIA



Bharat Heavy Electricals Limited

4.3 PARTICULATE SAMPLING EQUIPMENT

A Thimble sampling Train (TST) is used for this purpose. The main function of TST is sampling a portion of the particulate laden flue gas at iso-kinetic sampling rate to separate and retain the particulate for weighing and to measure the quantity of gas sampled. The Fig 11.1 shows the scheme of Thimble Sampling Train used for the test. The main parts of the sampling equipment are briefly described in the following pages.

4.3.1 FILTER HOLDER WITH SAMPLING PROBE

The Fig 11.2 shows details of the probe, filter holder and probe holder. The filters are made of borosilica quartz or glass fibre and can withstand temperatures upto 300° C. The filters are in the form of thimbles of size 30mm diameter and length 77mm approximately. The parts of the probe and holder are made of acid resistant steel. The length of the sampling tube can be adapted to the duct dimensions.

The standard probe including the tube parts may reach a length of 3200mm and can be extended further by using extension tubes. The filter holder is used to house the nozzles with inside diameters of 5 mm to 12 mm. Each nozzle is designed in such a way that a static pressure recovery is obtained before the inside pressure connection in order to compensate the flow losses through the nozzles.

The inlet diameter of the nozzle to be selected for sampling is dependent upon the volume capacity of the sampling train.

4.3.2 VACUUM PUMP

The main function of the pump is to extract flue gas at the iso-kinetic rate through the probe. The pump used for this purpose is a 4 cylinder diaphragm pump of Neuberger make.



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4.3.3 INSTRUMENT CASE

The Fig. 11.3 and Fig 11.4 show the measuring functions of the instrument case as well as the controls.

At the inlet of the case, there is a gas cooler from which the condensate flows down into the condensate bottle. The remaining water content of the gas i.e. water at gas meter is determined by measuring the dry bulb and wet bulb temperatures at gas meter.

In order to avoid humidity in the gas meter, the gas is reheated by flushing the gas meter section in the TST case with hot air from a power controlled hot-air fan. A thermostat has been provided to control the temperature which is normally set at 50° C. The digital temperature indicator provided also shows the temperature at the outlet of the gas meter, wet bulb and dry bulb. The wet bulb temperature is obtained via a gas flushed thermocouple provided with a wet sock which is moistened continuously from the water reservoir. All the thermocouples used are of chromel – alumel (K type).

The gas meter used is of Elster make and type G-4 and indicates the rate of flue gas sampled. The maximum capacity of gas meter is 3 to 6 m³/hr.

The flow is mainly controlled by means of coarse control and fine control valves. The fine control valve is used for small gas flow and to avoid high suction between the main control valve and the vacuum pump.

4.4 CALIBRATION REQUIREMENT

The instruments like pitot tubes, and gas meters, thermocouples and digital temperature indicators are calibrated at periodic intervals to check for the accuracy at BHEL/ R&D and other reputed institutions in India.



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9.0 TEST PROCEDURE

On arrival at the plant, the test team should check that all the preparations are done and ensure that the best operating conditions are prevailing for conducting the test. The instruments for the measurement should be located at the correct places and checked for their operational soundness before start of the test. The testing procedure is discussed in detail as follows.

9.1 PREPARATION OF FILTER

The filters together with the glass jars are marked for identification. They are placed in oven without lid on the jars and dried for about 2 hours approximately at the same temperature as that in the flue gas duct where the measurements are to be taken, but not less than a temperature of 110° C. The filters are then allowed to cool in a desiccator with lid on the jar for about 30 min. The desiccator should be placed close to the balance to avoid temperature difference. The lid of the jar should be lifted momentarily to equalise the pressure difference immediately before weighing. The thimble weighing period is recommended to be as short as possible. All weights shall be recorded on a suitable test sheet.

9.2 GAS FLOW MEASUREMENT

A traversing is made with pitot tube at the sampling cross section. The number of points over the measurement cross section depends of geometry and dimensions of the duct. It is important that the pitot tube is distinctly marked so that the measurements are always made at the same point each time a traversing is performed.

The dynamic pressure is read from a micro-manometer. It is then converted into velocity at each sampling point and total gas flow in the duct is calculated.

To measure the temperature of the gas, a thermocouple is fastened to the pitot tube and readings of both temperature and dynamic pressure are recorded in a traverse log sheet.



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9.3 SELECTION OF PROBE NOZZLE DIAMETER

The diameter of the probe nozzle is chosen considering the capacity of the measuring equipment and the highest velocity measured during the pitot traverse. The maximum capacity of the equipment is around 50 lit/min at the gas meter. However, there may be variations due to the type of the pump and the penetration of the dust into the measuring filter.

The nozzle diameter is selected based on the assumed gas flow rate and moisture content in the flue gas. The biggest possible sampling constant, Kn is calculated as follows.

$$Kn = \frac{q}{V\sqrt{Y_t} \times (\sqrt{Y_t})/Y_o \times \sqrt{(760/Bp)}}$$

Where

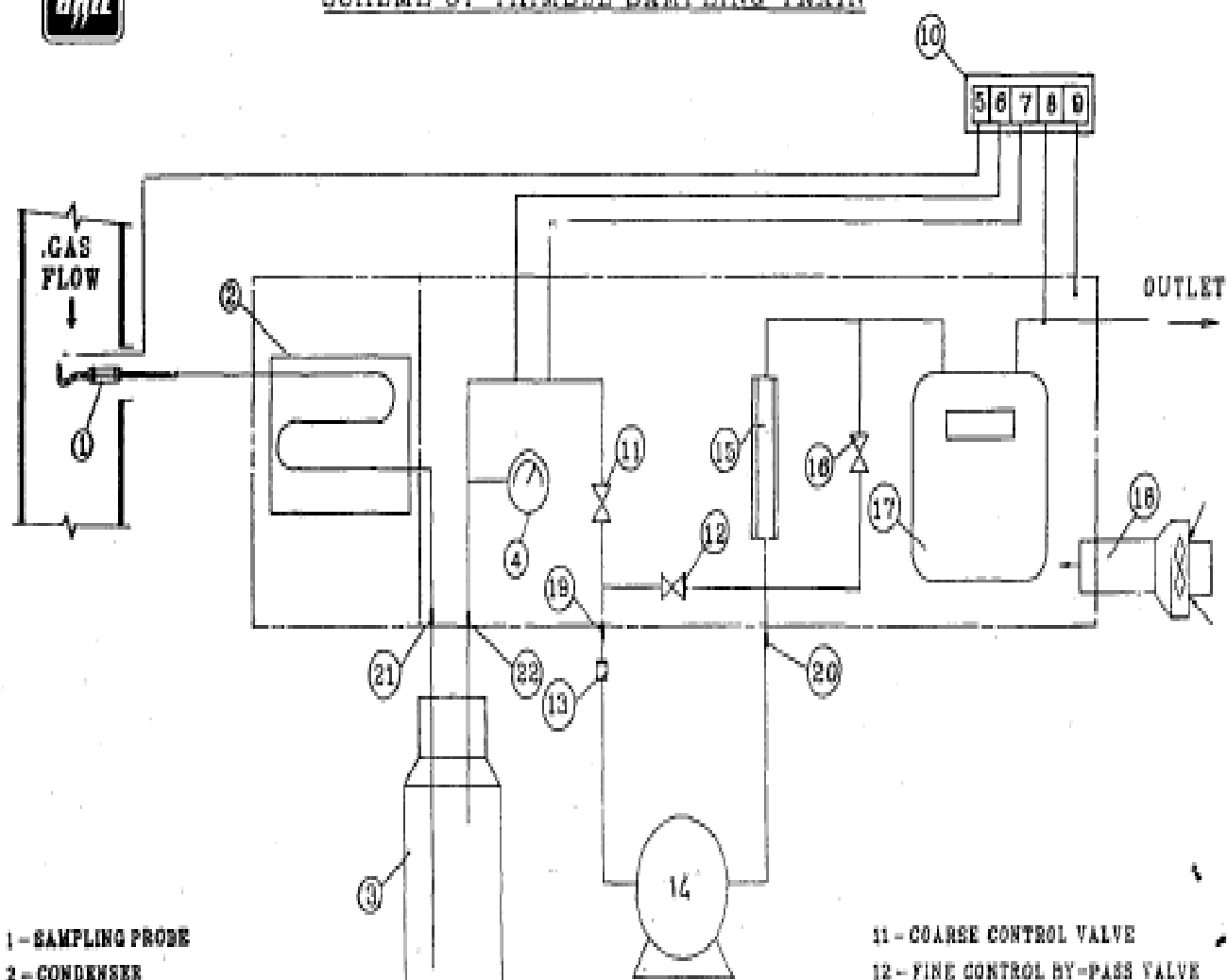
- Kn = Biggest possible sampling constant (proportional to nozzle area)
- q = Assumed gas flow rate through the gas meter, lit/min.
- $V\sqrt{Y_t}$ = as defined in 4.2 (for maximum measured)
- $(\sqrt{Y_t})/Y_o$ = obtained from the table 15.1 to 15.16
- Y_t = Assumed density of gas at test condition, kg/m^3 .
- Y_o = Assumed density of gas at standard condition 760 mmHg and 0°C .
- $\sqrt{(760/Bp)}$ = Correction for barometric pressure.
- Bp = Barometric pressure in mmHg.

Based on the sampling constant, the assumed moisture content in the flue gas and the gas meter temperature, the nozzle diameter is obtained from the table 14.1 to 14.7. Nozzles of diameter smaller than 5 mm are not recommended except for special conditions such as high gas velocities. Based on our experience, it is recommended to use nozzle of diameter 5 mm.



SCHEME OF THIMBLE SAMPLING TRAIN

Fig. A.2

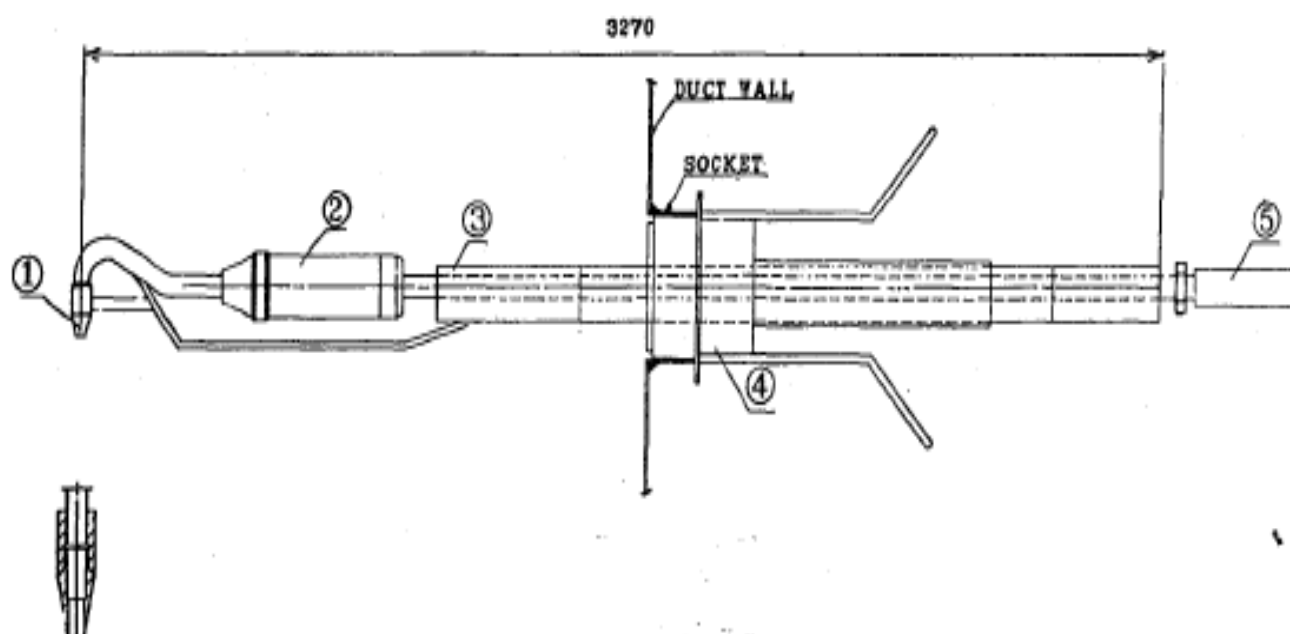


- 1 - SAMPLING PROBE
- 2 - CONDENSER
- 3 - CONDENSER BOTTLE
- 4 - VACUUM GAUGE
- 5 - FLUE GAS TEMPERATURE
- 6 - DRY BULB TEMPERATURE
- 7 - WET BULB TEMPERATURE
- 8 - GAS METER TEMPERATURE
- 9 - INSTRUMENT CASE TEMPERATURE
- 10 - DIGITAL TEMPERATURE INDICATOR

- 11 - COARSE CONTROL VALVE
- 12 - FINE CONTROL BY-PASS VALVE
- 13 - PROTECTIVE FILTER
- 14 - VACUUM PUMP
- 15 - FLOW INDICATOR
- 16 - FLOW INDICATOR BY-PASS VALVE
- 17 - GAS METER
- 18 - HEATER
- 19 - 22 CONNECTIONS



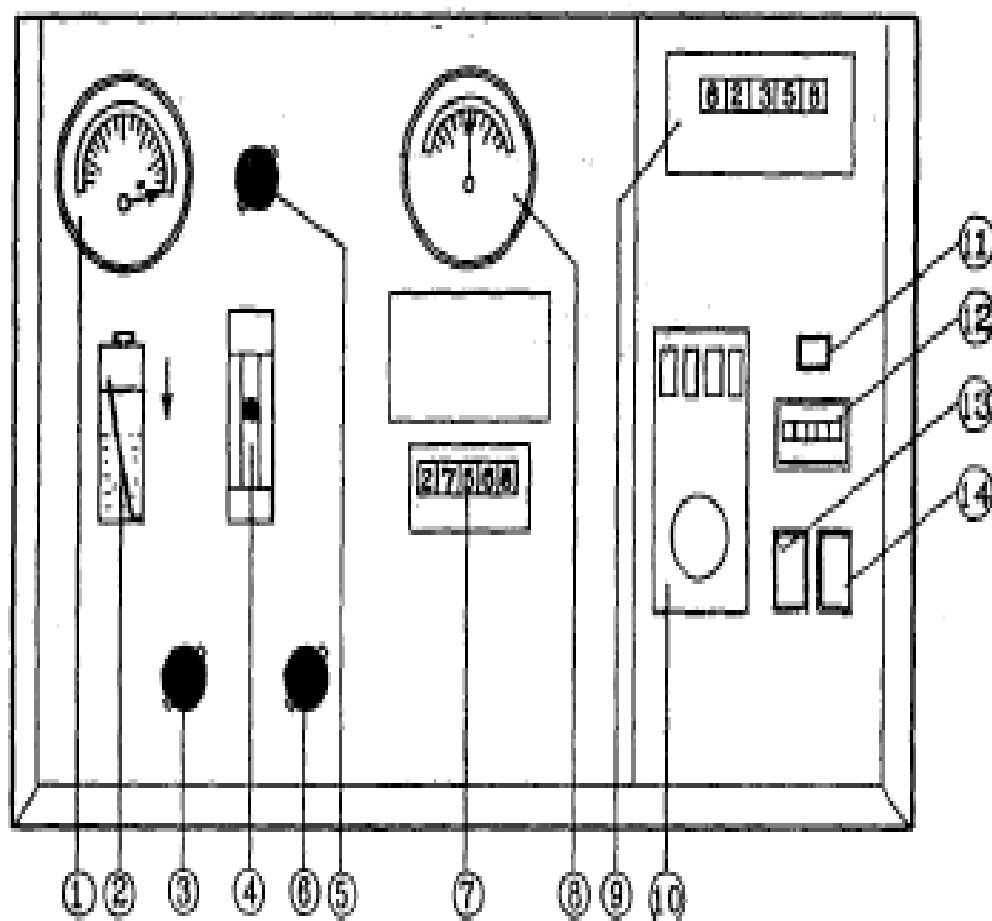
SAMPLING PROBE



1. NOZZLE TIP
2. FILTER HOLDER
3. SAMPLING TUBES
4. PROBE HOLDER
5. RUBBER HOSE

FIG 11.2

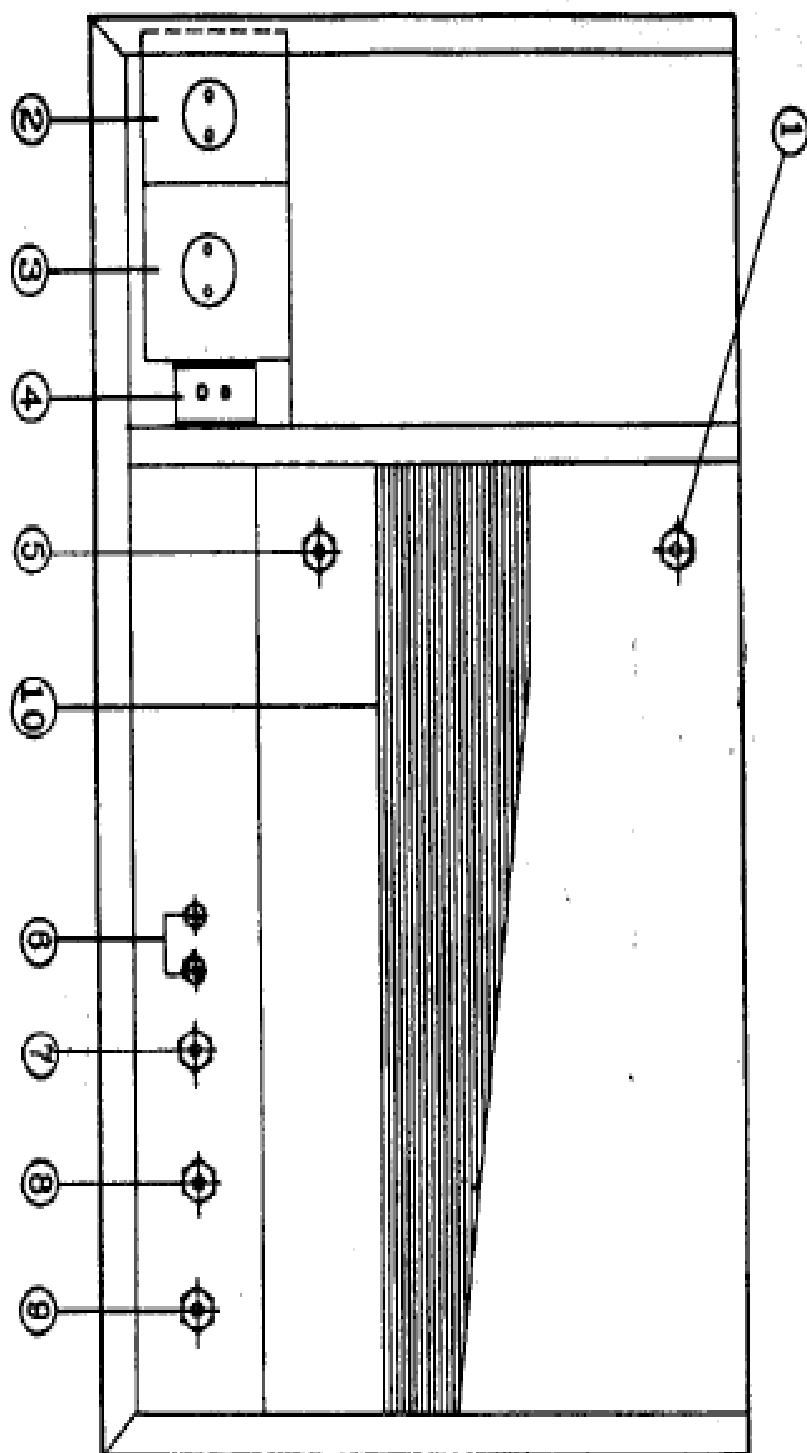
THIMBLE SAMPLING TRAIN - FRONT VIEW



- | | |
|--------------------------------|--|
| 1. VACUUM METER | 8. DIFFERENTIAL PRESSURE GAUGE |
| 2. WET TEMPERATURE RESERVOIR | 9. DIGITAL TEMPERATURE INDICATOR |
| 3. FLOW INDICATOR BYPASS VALVE | 10. REGULATOR - HEATING OF INSTRUMENT CASE |
| 4. ROTAMETER | 11. INDICATING LAMP |
| 5. COARSE CONTROL VALVE | 12. OPERATING TIMER |
| 6. FINE CONTROL VALVE | 13. MAIN SWITCH |
| 7. GAS METER | 14. PUMP SWITCH |

FIG. 11.3

THIMBLE SAMPLING TRAIN - REAR VIEW



- | | |
|-------------------------------|------------------------------------|
| 1. CONNECTION FROM PROBE | 6. PRESSURE CONNECTIONS FROM PROBE |
| 2. POWER SUPPLY - PUMP | 7. OUTLET TO PUMP |
| 3. POWER SUPPLY - AVI. | 8. INLET TO PUMP |
| 4. THERMOCOUPLE CONNECTION | 9. FROM CONDENSER BOTTLE |
| 5. CONDENSER OUTLET TO BOTTLE | 10. DRYER |

TEST DATA SHEET 12.1

AQCS : PT :

PAGE NO. :

Project :		Unit No. :	Date :
Gas patch : Location :		Test No. :	Time :
Assumed density (γ_o) :	Kg/Nm ³	Duct area :	m ²
Assumed moisture content :	% vol	Ambient temperature :	°C
Sampling time/point :	min.	Total Sampling time :	min.
Nozzle diameter :	mm	Barometric pressure :	mmHg
PITOT TUBE NO. :		Static Pressure :	mmWc
Calibration constant (Kp) :		FLUE GAS ANALYSIS BY VOLUME	
GAS METER No. :		CO ₂ : %	O ₂ : %
Calibration constant (Kg) :		Sampling rate calculation	
GAS METER READING		$= K_{Tot} \times \frac{1}{Kg} \times Kp \times V \sqrt{\gamma t}$	
Stop :	m ³	$= \quad \times Kp \times V \sqrt{\gamma t}$	
Start :	m ³	$= \quad \times Kp \times V \sqrt{\gamma t} \quad \text{lit / min.}$	
Sampled volume :	m ³	$K_{BAR} = \sqrt{\frac{760}{Bp}} = \quad$	
$K_{Tot} = \frac{\sqrt{\gamma t}}{\gamma_o} \times K_{BAR} \times K_{UTS}$		* From tables	
Jar / Thimble No. :			
Gross weight (gms) :			
Tare weight (gms) :			
Dust weight (gms) :			
Average flue gas temp. :	°C	Average dry bulb temp. :	°C
Average gas meter temp. :	°C	Average Kp V ft :	
Average wet bulb temp. :	°C	Condensate measured :	gms
REMARKS			
BHEL :: RANIPET		BHEL :: SITE	
		CUSTOMER	



EST FM TEST LOG SHEET - 12.5

ESP PERFORMANCE TEST DATA SHEET

To be recorded every 30 minutes

[illegible]

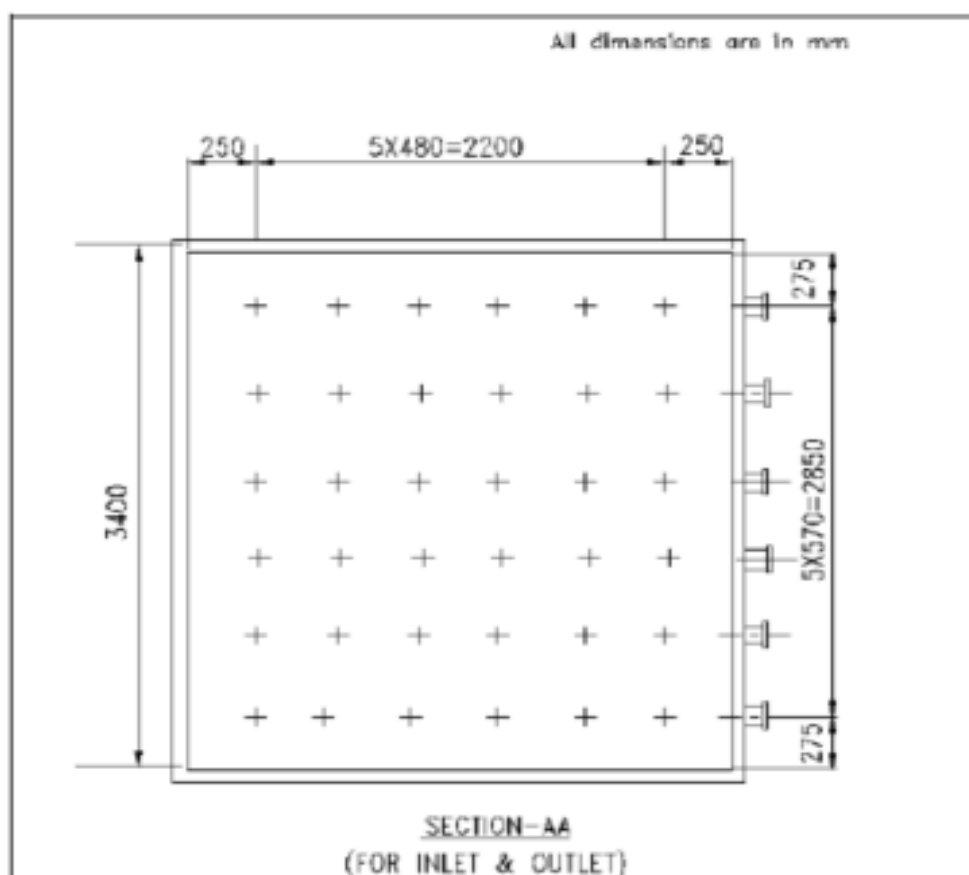
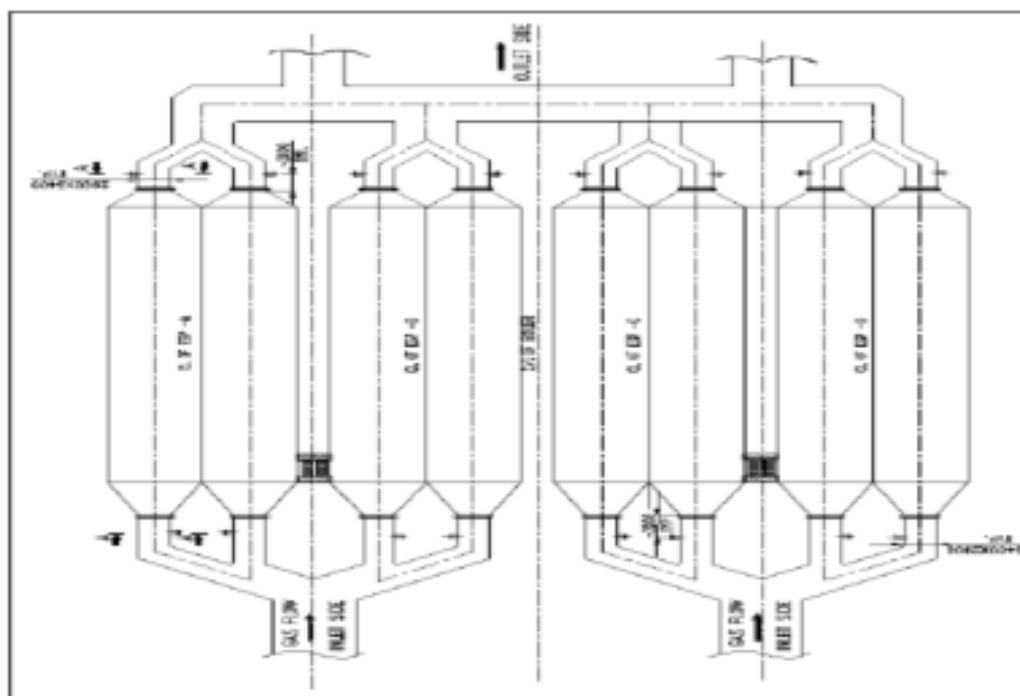


BOILER CONTROL ROOM DATA

Readings are to be recorded every 30 minutes

PROJECT :		UNIT :	TEST NO :	DATE :		
TEST TIME		Hrs.				
01.	BOILER LOAD	MW				
02.	MAIN STEAM FLOW	T/hr.				
03.	MAIN STEAM TEMP.	°C				
04.	ECO. INLET TEMP.	°C				
05.	ECO. OUTLET TEMP.	°C				
06.	HP HEATERS IN SERVICE					
07.	NO. OF COAL MILLS					
08.	NO. OF OIL BURNERS					
09.	COAL FLOW	T/hr.				
10.	TOTAL AIR FLOW	T/hr.				
11.	FLUE GAS TEMP. AT APH INLET, °C	LEFT				
		RIGHT				
12.	FLUE GAS TEMP. AT APH OUTLET, °C	LEFT				
		RIGHT				
13.	PA TEMP. AT APH OUTLET, °C	LEFT				
		RIGHT				
14.	SA TEMP. AT APH OUTLET, °C	LEFT				
		RIGHT				
15.	FD FAN CURRENT amps.	LEFT				
		RIGHT				
16.	ID FAN CURRENT amps.	1				
		2				
		3				
BHEL/RANIPET		BHEL/SITE		CUSTOMER		

Typical layout of test pocket location for 500 / 600 MW



Typical layout of test pocket location for 200 / 210 MW

