 419 - 401	<b>BHARAT HEAVY ELECTRICALS LIMITED</b> (A Government of India Undertaking) <b>TIRUCHIRAPPALLI - 620 014</b> <b>SUBCONTRACTING / ADVANCED TECHNOLOGY PRODUCTS</b>	
	<b>Telephone:</b> 0431 – 2575813, 2576160 & 2575180 <b>Fax:</b> 0431 – 2520565	<b>E- mail:</b> <a href="mailto:nrs@bheltry.co.in">nrs@bheltry.co.in</a> or <a href="mailto:vsenthil@bheltry.co.in">vsenthil@bheltry.co.in</a>
<b>Enquiry Title :</b> Electro-polishing of SS components	<b>Enquiry Number</b>	<b>626007E</b>
	<b>Date</b>	<b>24.06.2016</b>
	<b>Due Date</b>	<b>15.07.2016</b>

Kindly submit your techno-commercial & price-bids for 'Electro-polishing of SS components' in a sealed cover addressed to

**The Deputy General Manager**  
**Sub-contracting/ATP**  
**Building-2&4 (First Floor)**  
**Bharat Heavy Electricals Limited**  
**Tiruchirappalli-14**

duly super-scribing the above **Enquiry Number** and **Due date**.

The offers subject to the acceptance of terms and conditions enclosed should reach us before **14.00 hrs** on the due date. The tender will be opened at **14.30 hrs** on the due date in the presence of Tenderers, who are all present.

**Documents submitted with the offer shall be signed and stamped in each page by authorized representative of the bidder;** documents not signed and stamped by the authorized signatory of the bidder shall not be accepted and considered for evaluation of the bid.

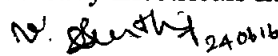
**REFER THE ENCLOSED ANNEXURES FOR SCOPE OF WORK AND DETAILED TERMS & CONDITIONS:**

1. Annexure -1 for Scope of work & Delivery conditions
2. Procedure for Electro-polishing
3. Annexure - A Terms & conditions of Enquiry
4. Annexure – B Important points for processing attested material
5. Annexure - C Techno-commercial bid
6. Annexure - N For New Vendors
7. Drawing 0-PV-628-00218

The following points may be noted before submission of tenders:

1. Tenders received after the prescribed time will not be considered for tender opening
2. The enclosed drawings & procedures shall be returned
3. Vendors who are not registered with BHEL-Trichy must fill Annexure-N & attach necessary documents

For Bharat Heavy Electricals Limited

  
**SENTHILKUMAR, V**  
 Engineer  
 ATP / Sub-contracting  
 BHEL, TIRUCHY - 620 014



419 - 401

**BHARAT HEAVY ELECTRICALS LIMITED**

TIRUCHIRAPPALLI - 620 014

**SUB CONTRACTING / ADVANCED TECHNOLOGY PRODUCTS****ANNEXURE-1 TO ENQUIRY No: 626 007E / Dt. 24 - 06 - 2016****COMPONENT DETAILS:**

Sl. No.	DESCRIPTION & DRAWING No.	RAW MATERIAL SIZE (Specification)	WORK ORDER & DU - PART No.	QTY (No)
1)	THREADED SLEEVE 0-PV-628-00218/00	As per given Drawing (ASTM473TYP420)	D149 to D150-001-1-90-628 001 - 0407	84
2)	TAB WASHER-VAR-01 0-PV-628-00218/00	As per given Drawing (SS321)	D149 to D150-001-1-90-628 001 - 0241	16
3)	TAB WASHER-VAR-02 0-PV-628-00218/00	As per given Drawing (SS321)	D149 to D150-001-1-90-628 003 - 1024	160
4)	TAB WASHER-VAR-3 0-PV-628-00218/00	As per given Drawing (SS321)	D149 to D150-001-1-90-628 001 - 0243	70
5)	PIPE-1 0-PV-628-00218/00	As per given Drawing (SA213TP321)	D149 to D150-001-1-90-628 001 - 0109	04
6)	PIPE-2 0-PV-628-00218/00	As per given Drawing (SA213TP321)	D149 to D150-001-1-90-628 001 - 0110	04
7)	PIPE-3 0-PV-628-00218/00	As per given Drawing (SA213TP321)	D149 to D150-001-1-90-628 001 - 0111	07
8)	PIPE-4 0-PV-628-00218/00	As per given Drawing (SA213TP321)	D149 to D150-001-1-90-628 001 - 0112	03
9)	PIPE-5 0-PV-628-00218/00	As per given Drawing (SA213TP321)	D149 to D150-001-1-90-628 001 - 0113	04
10)	PIPE-6 0-PV-628-00218/00	As per given Drawing (SA213TP321)	D149 to D150-001-1-90-628 001 - 0114	08
11)	PIPE-7 0-PV-628-00218/00	As per given Drawing (SA213TP321)	D149 to D150-001-1-90-628 001 - 0115	08

12)	<b>KEY</b> 0-PV-628-00218/00	As per given Drawing (ASTM473TY420)	D149 to D150-001-1-90-628 001 - 0213	18
13)	<b>FLANGE-7(EPN-1&amp;3)</b> 0-PV-628-00218/00	As per given Drawing (ASTM473TY420)	D149 to D150-001-1-90-628 001 - 0231	05
14)	<b>FLANGE-7(EPN-2&amp;4)</b> 0-PV-628-00218/00	As per given Drawing (ASTM473TY420)	D149 to D150-001-1-90-628 001 - 0232	05
15)	<b>FLANGE-6(GDN)</b> 0-PV-628-00218/00	As per given Drawing (ASTM473TY420)	D149 to D150-001-1-90-628 001 - 0233	11
16)	<b>BOLT-M10X1.5-6g</b> 0-PV-628-00218/00	As per given Drawing (SS420)	D149 to D150-001-1-90-628 001 - 0239	20
17)	<b>BOLT-M20X2.5-6g(var-3)</b> 0-PV-628-00218/00	As per given Drawing (SS420)	D149 to D150-001-1-90-628 001 - 0240	18
18)	<b>FLANGE-2</b> 0-PV-628-00218/00	As per given Drawing (ASTM473TY420)	D149 to D150-001-1-90-628 003 - 1017	5
19)	<b>NUT M10X1.5-6H</b> 0-PV-628-00218/00	As per given Drawing (ASTM473TY420)	D149 to D150-001-1-90-628 001 - 0236	16
20)	<b>STUD M10X1.5-6g</b> 0-PV-628-00218/00	As per given Drawing (ASTM473TY420)	D149 to D150-001-1-90-628 001 - 0237	45
21)	<b>PLUG 4 VAR-02</b> 0-PV-628-00218/00	As per given Drawing (ASTM473TY420)	D149 to D150-001-1-90-628 001 - 0102	10
22)	<b>TAB WASHER- VAR-04</b> 0-PV-628-00218/00	As per given Drawing (SA240TY321)	D149 to D150-001-1-90-628 003 - 1025	20
23)	<b>FLANGE-10</b> 0-PV-628-00218/00	As per given Drawing (ASTM473TY420)	D149 to D150-001-1-90-628 001 - 0205	10

24)	<b>STUD M8 X 1.25</b> 0-PV-628-00218/00	As per given Drawing (ASTM473TY420)	D149 to D150-001-1-90-628 001 - 0209	18
25)	<b>NUT M12X1.75-6H(VAR-02)</b> 0-PV-628-00218/00	As per given Drawing (ASTM473TY420)	D149 to D150-001-1-90-628 003 - 1023	20
26)	<b>STUD M12X1.75-6g(VAR-02)</b> 0-PV-628-00218/00	As per given Drawing (ASTM473TY420)	D149 to D150-001-1-90-628 003 - 1026	18
27)	<b>FLANGE-4</b> 0-PV-628-00218/00	As per given Drawing (ASTM473TY420)	D149 to D150-001-1-90-628 001 - 0105	06
28)	<b>NUT M8 X 1.25</b> 0-PV-628-00218/00	As per given Drawing (ASTM473TY420)	D149 to D150-001-1-90-628 001 - 0210	20
			<b>TOTAL QTY (No.)</b>	<b>633</b>

**SCOPE OF OPERATIONS:**

- 1) Collection of components in 2 lots from BHEL/Trichy with relevant documents.
- 2) The approved procedure (attached with this enquiry) for electro-polishing of SS components will be provided by BHEL; No deviation from the procedure is permitted at any stage of processing.
- 3) Preparation of detailed Operation Process Sheet (OPS) indicating each stage of operation and inspection checklist as detailed in the given procedure; The OPS shall be submitted for approval from BHEL & BARC.
- 4) Electro-Polishing of **one number** each of above Sl. Nos. **01, 07, 13, 17 & 27** shall be carried out as **trials** to establish the process parameters as per given procedure. Passivation test & surface finish checking of the trails to be done as per given procedure in presence of BHEL & BARC.
- 5) After obtaining clearance on trials from QC-BHEL & QS-BARC, Carry out Electro-polishing on all other components from Sl No.1 to 28 as per approved OPS & procedure
- 6) Obtain final inspection clearance of components from QC / BHEL & QS / BARC

**Notes:**

1. Passivation test & surface finish inspection of both trials & other job items are to be done by the sub-contractor in presence of QC/BHEL & QS/BARC
2. The threaded items should pass Go & No-go gauge checking after electro-polishing. Gauges for inspection shall be collected from BHEL on a returnable basis
- 7) All the chemicals, SS tanks & materials pertaining to electro-polishing work are to be arranged by the sub-contractor. Test certificate for the chemicals used shall be produced on demand to QC/BHEL & QS/BARC before use.
- 8) The electro-polished surfaces shall be covered with polythene sheets (to be arranged by sub-contractor) to prevent contamination of surfaces. The finished components shall be properly packed to protect the threaded surfaces in a wooden box and safely dispatched to BHEL-Trichy.

**NOTES:**

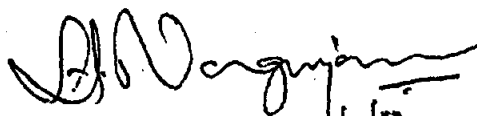
- 1) Offer should be submitted on Rate / piece basis for each Sl. No. 'L1' offer will be evaluated for the combined values of all the Sl.No.
- 2) The job should be taken up only after obtaining clearance on trials as specified in the OPS. All the stage inspection and final inspection reports including Operation Process Sheet are to be handed over to OP&C – ATP / BHEL after completion
- 3) Transportation of jobs on both ways (in 2 lots) is in the scope of sub-contractor.
- 4) All the materials shall bear identification details or suitable tags with QC/BHEL & QS/BARC stamp or signature at all stages
- 5) All safety precautions should be followed while handling the chemical solutions; care should be taken to avoid contact of job with any other foreign materials after electro-polishing
- 6) Care to be taken to avoid any damage on components during handling or transportation. Packing shall be done by the sub-contractor as per point No.6 of given procedure; Additionally threaded portions shall be covered with tar-bonded gunny bag cloth to prevent any thread damage.
- 7) Online IR shall be raised through Vendor Information System (B2B portal) of BHEL-Trichy and after getting clearance, the job shall be dispatched through online DC
- 8) The Invoice (Three copies) shall be addressed to Dy. General Manager / Finance and the same may be routed through DGM / Subcontracting / ATP

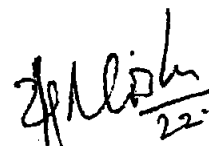
**DELIVERY SCHEDULE:** Within one month from the date of material collection.

*no. Senthil*  
Engineer 24.06.16  
Sub-contracting / ATP  
SENTHILKUMAR. V  
Engineer  
ATP / Sub-contracting  
BHEL, TIRUCHY - 620 014.

PROCEDURE FOR ELECTRO  
POLISHING OF SS COMPONENTS  
OF RPV - B1 & B2

Approved by:

  
(BHEL) 22/10/10

  
22-10-10  
(BARC)

# PROCEDURE FOR ELECTRO POLISHING

This procedure deals with step by step instruction for ELECTROPOLISHING OF TUBES\* of specification SA213TP321.

The Electropolishing procedure shall be established first on the trial tubes. Trial material shall be taken from supplied tubes itself.

## 1. Preparatory operations

Take the Supplied tubes and verify their identifications.

The tubes are to be subjected to preparatory operations, e.g. polishing and cleaning in order to remove surface soil such as polishing compounds, oils, etc. Clean the OD / ID of tubes with detergent soap solution and de-mineralized water. Further pickle the surface to be polished with 10-20% HNO<sub>3</sub> by keeping in the bath of this solution for about 10 to 20 mts followed by cleaning with DM water.

Following ~~Tube sizes~~ shall be used as trials for establishing process parameters:

- ~~Tube dia 17 x 2mm thick - 1000 mm length - 1 no~~
- ~~Tube dia 17 x 2mm thick - 1500 mm length - 1 no~~
- ~~Tube dia 20 x 2.5 mm thick - 500 mm length - 1 no~~
- ~~Tube dia 33.4 x 4.5 mm thick - 500 mm length - 1 no~~
- ~~Tube dia 42.2 x 3 mm thick - 5000 mm length - 1 no~~

Note: For trials, one number each of sl no. 1, 7, 13, 17, 427 shall be taken.

## 2. Electropolishing

Subsequently, the tube(s) shall be introduced into the electropolishing solution for a period of time, at the current density & temperature required to produce the surface finish of Ra 1.6 µm (maximum) based on the values obtained from Trial.

## 3. Post-treatment and rinsing

The electropolishing process produces a residual surface film when withdrawn from the electropolishing solution that can adversely affect appearance or performance.

The film shall be removed by:

- Immersing the article in nitric acid solution of 10 % volume fraction to 30 % volume fraction (relative density 1.42; 70 % mass fraction) at room temperature; or
- Using several rinse stages. The article shall be rinsed subsequently to remove all traces of acidified water that can affect the appearance and performance of the passive part.

NOTE: De-ionized or distilled water may be used to avoid water spots.

Note:

\* Though the procedure mentions electro-polishing of tubes of specification SA213TP321; it covers all the items sl.no. 1 to sl.no 28 given in this enquiry.

**4. Material Sampling & Testing Plan and Acceptance:**

**4.1 Passivation Testing:**

The material after post-treatment and rinsing shall be tested / inspected in the presence of BHEL/BARC engineers for the tests mentioned in Table 1. One tube from each size will be taken at random and will be cut into required length to do all the Tests. For passivation testing we can do either SL no 1 & 2 or 1 & 3.

**TABLE - 1**

Sl. No.	Test	Description	Acceptance criteria
1	Water immersion test	The article(s) shall be alternately immersed in distilled water for 1 hr then allowed to dry for 2 hrs for eight wet-dry cycles (24-hrs total).	No evidence on the article of red rust or other visible products resulting from the test.
2	Copper Sulfate test	<p><b>Principle:</b> The article is swabbed with an acidified solution of copper sulfate and inspected for evidence of a copper-coloured deposit and/or copper-coloured spots indicating the presence of free iron.</p> <p><b>Reagents:</b> A fresh Copper sulfate test solution, prepared by dissolving 1.6 g of analytical reagent grade copper sulfate (CuSO<sub>4</sub>·5H<sub>2</sub>O) in 100 ml of distilled water and 0.4 ml of sulfuric acid of 96 % mass fraction.</p> <p><b>Procedure:</b> Using a cotton swab, apply the test solution to a clean area of the passivated surface to be tested, ensuring that the surface is kept wet for 6 min. Inspect the surface for the formation of a copper-coloured deposit and/or copper-coloured spots. Discard or reprocess parts used for testing.</p>	No evidence of a copper coloured deposit and/or copper-coloured spots.
3	Modified "ferroxy" test	<p><b>Principle:</b> The article is swabbed with a solution of potassium ferricyanide and inspected for the formation of a dark blue colour indicating the presence of free iron.</p> <p><b>Reagents:</b> A fresh Potassium ferricyanide test solution, prepared by dissolving 1.0 g of analytical grade potassium ferricyanide [K<sub>3</sub>Fe(CN)<sub>6</sub>] in 70 ml of distilled water and 30 ml of reagent grade nitric acid of (70 ± 1) % mass fraction and relative density of 1.415 to 1.420.</p>	No evidence of the formation of a dark blue colour within 30 sec when tested.

Sl. No.	Test	Description	Acceptance criteria
		<p><b>Procedure:</b> Using a cotton swab, apply the test solution to a clean area of the passivated surface to be tested. Note the time taken for a dark blue colour to form. Discard or reprocess parts used for testing.</p>	

**4.2 Surface Finish Inspection:-**

Surface finish on OD of sample tubes will be checked and recorded using RA meter. Then, sample tube of length 100mm (min) (approximate) will be cut longitudinally and surface finish on ID side will be checked and recorded using RA meter. For circumferential direction on both OD & ID, the surface finish will be checked by comparator method.

**5. Test reports:**

Test report detailing the results of passivation and surface finish will be made with reference to the sampling location, number of specimens used and deviations observed (if any) and submitted to BHEL/BARC.

**6. Packing & dispatch:**

After completion of all the works, each tube will be covered separately with polythene sheets. Before loading the tubes, thermocole sheets will be placed at the bottom of wooden boxes. The Tubes will be packed tightly in the supplied wooden box. Balance free space will be filled with thermocole sheets including the top side.



# BHARAT HEAVY ELECTRICALS LIMITED

TIRUCHIRAPPALLI - 620 014

## SUB CONTRACTING / ADVANCED TECHNOLOGY PRODUCTS

### ANNEXURE-A

#### TERMS & CONDITIONS TO ENQUIRY 626007E Dt. 24.06.2016

1. The tender will be operated on two part bid basis i.e.
  - I. Techno-Commercial Bid &
  - II. Price Bid
2. The offer is to be submitted in a single envelope containing two envelopes. i.e. Part - I (Techno Commercial Bid) and Part - II (Price Bid)
3. **Part – I (Techno-Commercial Bid):**
  - I. Duly Signed Tender Documents
  - II. Duly signed Annexures – A&B (Terms and Conditions & Important Points for Attested material processing)
  - III. Duly filled & signed Annexure – C (Techno-Commercial Bid)
  - IV. Signed and filled Annexure – N (*Applicable for New Vendors only*). Supporting documents should be submitted along with this bid)

This Part – I document should be sealed in a separate envelope by clearly marked “Part I – Techno - commercial bid” indicating Enquiry No., Due Date., address & reference of the bidder.

4. **Part – II (Price Bid):**
  - I. Duly filled and signed Quotation – Include all the costs and quote as **Rate per piece** basis (in Rs.) for each Sl.No. as in Annexure -1

This price bid should be sealed in a separate envelope by clearly marked “Part II – Price bid” indicating Enquiry No., Due Date., Address & reference of the bidder.

5. It is requested to put the above two envelopes (Techno-Commercial Bid & Price Bid) inside a separate larger sealed envelope and this envelope shall be super scribed as “Techno-Commercial Bid and Price Bid “ for Enquiry No. 626007E Dt.: 24.06.2016 Due Dt.:15.07.2016

6. The offer should be addressed to:

**Deputy General Manager  
Sub-contracting / ATP  
2&4 Building (First Floor)  
Bharat Heavy Electricals Limited  
Tiruchirappalli - 620 014**

7. Any clarifications related to the enquiry should be addressed to [nrs@bheltry.co.in](mailto:nrs@bheltry.co.in) or [vsenthil@bheltry.co.in](mailto:vsenthil@bheltry.co.in) and NIT or Enquiry number should be mentioned in the subject. Any clarifications without the reference of tender number in the subject will not be entertained.
8. Any techno commercial clarifications/request for tender due date extensions with valid acceptable reasons to be addressed to BHEL prior to 48 hours of tender due date. BHEL reserves the rights to extend the due date as per their discretion.
9. Tenders should be free from CORRECTION AND ERASURES. Corrections if any must be attested; all amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall only be considered.

**10. Discrepancy in "Words" & "Figures"**

- a. If, in the price structure quoted for the required goods/services/works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of BHEL there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.
- b. If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- c. 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 of (a) and (b) above.

**11. Taxes & Duties:**

All taxes, duties, service taxes etc. if payable as extra to the quoted price should be specifically stated in offers along with CST & TIN No / Tariff no. etc., failing which BHEL will not be liable for payment of such taxes and duties. Our TIN No: 33243560005, TNGST No: 356005, CST No: 239383 dated 11-06-1991 & BHEL ECC No: AAACB4146PXM012. Assessment circle: Thiruverumbur.

Excise duty and Sales tax if any will be paid in Full for each part payment, based on supporting documents.

12. The quoted rates shall be valid for at least **6 months** from the date of price bid opening. The quoted/Finalized rates shall be Firm till completion of the supplies.
13. On the due date of tender opening, only the technical bids will be opened. Technical bids will be evaluated by BHEL and clarifications required, if any, will be called for from the bidders on technical and commercial points. The price bids of techno-commercially suitable bidders will be opened on a later date with prior intimation to respective bidders.
14. Lowest price received against BHEL tenders need not be the technically acceptable one and in that case BHEL reserves the right not to consider the same. The purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept or reject any tender in part or full without assigning any reason whatsoever.
15. BHEL reserves the right to negotiate or re-float the tender opened if L1 price is not the lowest acceptable price to them inter-alia other reasons.
16. BHEL deserves the right to increase or decrease the tendered quantity.

**17. Risk Purchase:**

BHEL at its option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitute thereof. The supplier shall be liable for any loss which BHEL may sustain by reason of such risk purchases in addition to LD at the maximum rate mentioned in the LD clause above.

**18. Bidders not confirming to the enquiry specification mentioned will be disqualified.**

19. Any corrigendum related to the enquiry will be hosted in the BHEL website only, Bidders should visit the website to keep themselves updated.

20. The correspondence between the bidder and BHEL through email is considered as valid document legally though not signed. It is treated as valid confirmations made on behalf of the respective company and comes under the legal ambit of the business transaction and hence binding on both the parties.

21. Bidders participating in the tender should declare in their technical bid whether they have been black-listed / kept on hold / given Business holiday for a specified period by any Public Sector Undertaking or Government Departments. The reasons for such action with details and the current status of such hold shall be clearly furnished to BHEL. If no such details are mentioned in the offer, it will be construed that the bidder is not under any such hold. However, at a later date if it comes to the notice of BHEL about any such hold under enforcement, BHEL reserves the right to reject the offer at any point of time and also under any stage of the finalization of the tender. Such bidders will not be permitted to participate in the further tender proceedings and will be communicated suitably.

**22. Issue of Materials:**

- a. The raw materials are to be collected from BHEL by the vendor at his cost
- ~~b. The raw materials will be supplied at your works at our cost.~~

**23. Bank Guarantee:**

You will have to execute a Bank guarantee for the value of **Rs.50,000/- (Fifty thousand rupees)** towards satisfactory performance of the order and for the safe custody of the raw materials. The guarantee shall be executed on a Non-judicial stamp paper of value Rs.100/- and shall be kept valid for a period of one year against the orders already placed and to be placed by BHEL. All bank charges will be to the supplier's account.

In case any bidder does not accept for submission of Bank guarantee, their offer is likely to be rejected. However, in case of any vendor having a valid Bank Guarantee executed for any of the previous ATP/Sub-contracting orders, the same shall be used for this tender provided the existing BG value is not less than the requirement (cumulative value including the POs for which the deliveries are not completed) specified above.

**24. Manufacturing of Components:**

- a. The items are to be strictly manufactured as per Scope and drawing / OPS.
- b. Attestation procedure is to be followed wherever required as per Annexure-B

**25. Inspection of Components:**

- a. Stage or final Inspection of the components will be done by BHEL/Customer Inspection agencies for which a register for dimensional report shall be maintained at your works and you have to provide all the required facilities Free of Cost. The Inspection results should be given in the format specified by QC/BHEL and necessary stage clearances should be obtained as mentioned in OPS.
- b. The items requiring first off clearance for bulk production shall be offered for Inspection immediately after sample pieces have been completed. Only on getting the approval from our Inspector and authorised representative in writing, further work on bulk production is to be started.
- c. In case of partial or full raw material supply by BHEL for rejection due to our raw materials defect, we will allow proportionate payment to the extent of machining carried out.

**26. Painting & Packing of components:**

- a. All the machined surfaces or threaded surfaces are to be carefully packed to avoid any damage during transportation

- b. Supplier's code number allotted by us should be punched and encircled with white paint on the finished components wherever possible. In case of small items, metal tags shall be prepared for the same.
- c. Any deviation from the scope of machining shall be suitably painted on the component at the appropriate place.
- d. Wherever our work orders specified in the Purchase order, the details of Work Order Number, Du-Part Number, Quantity Numbers and weight in Kgs., apart from the IR. No., Should be painted in white paint on any prominent surface of the component or on a metal tag of size 100x175 mm for smaller items, initially applied with Red oxide primer to IS2074 and further applied with a coat of Varnish to avoid peeling off the paint.

**27. Accountability of raw materials:**

Balance of raw materials will be accounted on completion of the order. ~~Balancee materials will have to be returned by you to BHEL Stores. Turnings and borings / wastages are to be returned to BHEL Stores.~~

~~Turnings and borings / wastages need not be returned to our Stores. You may give due Credit to the value of the same in your quotation and accordingly quote.~~

**28. Delivery of Components:**

- a. The finished goods should be delivered to BHEL/Trichy by the vendor at his own cost
- b. The Delivery challan should be prepared for each Purchase order / Work order separately as per our Proforma or online through B2B (Vendor information system)
- c. The consignment should accompany sufficient copies of online IRs & DCs as mentioned in the B2B (Vendor information system)
- d. The rejected items due to material defect are to be despatched by the vendor to BHEL on "Freight to pay basis" through any of our approved transport carrier along with 3 copies of PDO, one copy of IR and 4 copies of Delivery challan.
- e. The rejected items due to faulty workmanship at vendors end are to be delivered to BHEL at his own cost

**29. Payment:**

Payment for 100% ~~90%~~ will be made after 45 days from the date of receipt of finished goods and against the Inspection report (IR) (when the finished items are supplied whether partially or fully to BHEL) supported by:

- a) Two copies of your delivery challan acknowledge by our Stores / Shop
- b) Material accountal Statement for BHEL supplied material / FIM
- c) Invoice of three copies, addressed to DGM/Finance and routed through DGM/SC/ATP
- d) ~~Balance 10% last payment shall be made only on completion of the order after duly accounting for rejections, short supplies (if any) and return of raw materials.~~
- e) Payment of proportionate machining charges for the rejected pieces due to material defect will be made against your Invoices in duplicate supported by 2 copies of IR. & Delivery challan acknowledged by our stores.

**30. LD Clause:**

Liquidated damages shall be 0.5% of the total order value per week or part thereof subject to a maximum of 10% of the total order value.

For staggered delivery schedule, LD shall be 0.5% of the undelivered portion per week of delay or part thereof subject to a maximum of 10% of the total order value.

Waiver of LD may be considered under special circumstances based on the written request from the vendor.

**31. Return of Documents:**

All the documents of BHEL including drawing/approved procedures made available to the vendors should be kept in strict confidence and under no circumstance be made available to others or allow others to make use of them. Such documents shall be returned to us on demand after completion. This secrecy clause is binding on the employees of the fabricators also. Any contravention will be subjected to legal action, besides suspending business with BHEL.

32. Any dispute arising out of or in connection with this Agreement shall be finally settled by binding arbitration in accordance with the Arbitration and Conciliation Act, 1996 as may be amended from time to time. Executive Director / BHEL, Trichy – 620 014 or his authorized representative shall be the Sole Arbitrator and his decision shall be final and binding on both the parties. The place of arbitration shall be Tiruchirapalli, and the language shall be English. The courts at Tiruchirapalli shall have exclusive jurisdiction on any dispute arising out of or in connection with this Agreement, if intervention of court is warranted, subject to the arbitration provided above.

*Dr. Senthil*  
Engineer 2A 01/16  
Sub-Contracting/ATP

SENTHILKUMAR. V  
Engineer  
ATP / Sub-contracting  
BHEL TIRUCHY - 620 014.



# BHARAT HEAVY ELECTRICALS LIMITED

TIRUCHIRAPPALLI - 620 014

ADVANCED TECHNOLOGY PRODUCTS / SUB CONTRACTING

## ANNEXURE - B

### IMPORTANT POINTS TO BE NOTED WHILE PROCESSING THE ATTESTED MATERIAL

- 01 Raw material should not be taken up for machining/processing without attestation card.
- 02 The details given in the Attestation card should tally with the details punched on the raw material along with Inspector's seal.
- 03 Before gas cutting/hacksaw cutting/machining, attestation particulars are to be transferred to individual pieces along with BHEL Inspector's seal.
- 04 BHEL Inspector alone is authorised to put his Seal on attested material.
- 05 The following details should be punched each component. If the components are too small, the details may be punched on a Metal Tag and tied after consulting our Inspector.
  - A) Attestation card numbers.
  - B) Material specification.
  - C) Melt number
  - D) BHEL's Inspector's Seal.
  - E) Firm code number.
- 06 Before taking up the raw material for processing, clearance is to be obtained in writing from our Inspector.
- 07 If any attestation particulars are removed during machining the same is to be transferred immediately on the machined area along with our Inspector's Seal.
- 08 Before punching, if it is not a machined area, the same is to be thoroughly cleaned by grinding, Sand blasting or at-least by wire brushing. At no circumstances, the attestation shall be made on mill or heat treatment scale.
- 09 Use only 3mm letter and number punch. The punching depth shall be uniform and legible.
- 10 The attestation details are to be clearly bordered with yellow paint. Bordering is to be done only after applying rust preventive oil.
- 11 Attestation card is to be sent to Stores along with despatch documents. If any part supply is made, a true copy of the attestation card duly signed by our Inspector is to be sent along with the despatch documents. In such case, the last consignment is to be despatched with original attestation card.
- 12 All useable materials and bits are to be returned to our stores bearing attestation details with our Inspector's Seal.
- 13 Before despatch Subcontractor should ensure that all the above points are followed without fail and ensure that the attestation details punched are correct.

*V. Senthil Kumar*  
Engineer 240616

**Subcontracting / ATP**  
**SENTHILKUMAR. V**  
Engineer  
ATP / Sub-contracting  
BHEL, TIRUCHY - 620 014

**TECHNO-COMMERCIAL BID FOR 626007E dated 24.06.2016**

**ANNEXURE - C**

<b>PRE-QUALIFICATION CRITERIA (TECHNICAL REQUIREMENTS)</b>			
<b>SL.NO.</b>	<b>DESCRIPTION</b>	<b>BHEL REQUIREMENTS</b>	<b>VENDOR CONFIRMATION / DEVIATION</b>
01	EXPERIENCE IN ELECTRO-POLISHING OF SS ITEMS OR SIMILAR TECHNIQUES	<p>Only those vendors who have similar experience in doing these type of works should quote.</p> <ul style="list-style-type: none"> <li>• Proof shall be submitted in the form of recent (2014-2016) Purchase order or in any other form.</li> <li>• BHEL reserves the right to verify the information provided by vendor. In case the information furnished by vendor is found to be false / incorrect, the offer /P.O shall be rejected.</li> </ul>	
02	COMPLIANCE WITH THE PROCEDURE	The vendor should submit a detailed method of control, with limits for time, temperature and PH value and other pertinent details that will ensure compliance with the requirements of procedure	
03	EQUIPMENTS/CHEMICALS TO BE USED	Details of acids, electro-polishing solutions, DM water, De-ionized or distilled water, test methods & the equipment proposed to be used shall be submitted by the vendor. The exact designation of all proprietary materials proposed for use shall be stated.	
04	TRIALS (TEST COUPONS)	Process parameters shall be established by the firm initially on trials; Job can be taken up only after acceptance of trials by BHEL & BARC	
05	PROCESS REQUIREMENT	Tanks (for cleaning, pickling, Electro-polishing, post treatment & rinsing, etc) used for processing shall be made of SS/FRP only. For each process/ treatment, separate tanks shall be used.	
06	TESTS & REPORTS	Passivation tests & surface finish inspection as per procedure are to be done by vendor in presence of BHEL QC/Lab person  Test reports shall be submitted as per procedures.	

**NOTES :**

1. The Vendor shall attach annexures and provide detailed explanation wherever necessary.
2. Only those vendors who are meeting the pre-qualification criteria shall be considered for further tender processes.

**COMMERCIAL TERMS & CONDITIONS**

SL.NO.	DESCRIPTION	BHEL REQUIREMENTS	VENDOR CONFIRMATION / DEVIATION
01	VALIDITY	Validity of the offer shall be minimum 6 months from the date of tender opening	
02	FREIGHTAGE (Consider transportation cost and quote accordingly; need not be separately specified in the quotation)		
	i) RAW MATERIAL	Material to be collected in 2 lots from BHEL, Trichy	
	ii) FINISHED COMPONENTS	Finished items in 2 lots to be properly packed and delivered to BHEL, Trichy	
03	TAXES & DUTIES	Refer point 11 of Annexure-A (Not applicable in general since it involves only conversion cost)	
04	PAYMENT TERMS	Refer point 29 of Annexure-A	
05	LIQUIDATED DAMAGES	Refer point 30 of Annexure-A	
06	BANK GUARANTEE	You have to execute a bank guarantee for Rs. 50,000/- before material collection	
07	DELIVERY SCHEDULE	Within <b>one month</b> from the date of material collection	
08	RISK PURCHASE CLAUSE	Refer point 17 of Annexure-A	
08	OTHER TERMS(IF ANY)	Packing (including wooden box) as mentioned in annexure-1 is in the scope of sub-contractor.	

*SP. Senthil* 24.06.16

**SENTHILKUMAR. V**

Engineer

ATP / Sub-contracting

626007E

Authorised Signatory with Seal

**ANNEXURE - N (For NEW VENDORS only)**

SI No	Details	Document submission
1	Nature of ownership & relevant documents (Proprietorship-Professional Tax Regn & Municipal Regn; Partnership firm – Partnership Deed; Co-operative society – Society rules & bye laws ; Private/Limited Company – memorandum & Articles of Association)	
2	Product or Service range & facilities: • List down the product range & specification details. • List of Manufacturing facilities/equipment's (including material handling facility)	
3	Licence details of the factory	
4	• Permanent Account No • Central Sales Tax registration number • State sales Tax / TIN number • Excise duty registration number • Excise control code number • Service tax registration number • Regn number of category as per MSMED Act (If applicable)	
5	If registered with any other BHEL unit • Letter of registration with BHEL unit (If applicable) • Proof of successfully executed or executing purchase orders	
6	Accreditation certificate for ISO:9001 / TOC of Quality System manual / ISO:14000 / OHSAS ISO 18000 (If applicable)	
7	Balance Sheet for the last three years along with the audit report	
8	EXPERIENCE IN ELECTRO-POLISHING OR SIMILAR TYPE OF WORK (All the new vendors should enclose a Purchase Order copy against their previous experience)	

*M. Senthil*  
24.06.16

**SENTHILKUMAR. V**  
Engineer  
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