Government of India
Bhabha Atomic Research Center
Pulsed Power & Electromagnetics Division

Ref : PP&EMD/BARCV/18-19/IND/ 27 Date 09/10/2018

Name of Party:

SUB: Inviting quotations for "Fabrication & Supply of Fiber Reinforced Polymer Copper Coils" Qty: 6 (details of specifications are attached in a separate sheet)

Annexures- 1 & 2

Dear Sir,

1. Quotations are invited for the fabrication& supply work, as per the enclosed specification
2. Bidder shall quote for fabrication & supply work.
3. Taxes shall be quoted separately.
4. The quotation must reach the Head, Pulsed Power & Electro-Magnetics Division by date 22/10/18 and must be sent in a sealed, printed envelope superscripted with reference number and the due date given above by 4pm.
5. The address of the envelop should read –

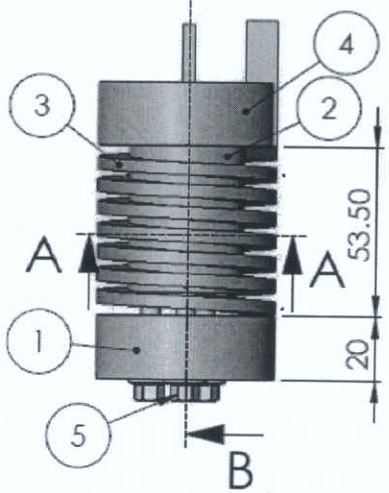
   Mr. J M V V S Aravind C/o Dr. Archana Sharma
   PP&EMD, Bhabha Atomic Research Centre
   IDA Block B, 4th Cross Road, Autonagar, Visakhapatnam - 530012
6. Head, PP&EMD reserves the rights to accept/ reject any or all quotations without assigning any reasons.
7. Quotation must also indicate the validity of offer & required delivery time.
8. Quotation are to be in printed letter-head / quotation format only. Quotation received in computer-generated forms will be considered as invalid and rejected.
9. Quotation should consist of Sales Tax registration number (Registered with local ST / CST authority), PAN number of the firm, services tax registration number etc.
10. Claim preferred by the firms are also be in printed INVOICE format consisting of the above registration numbers.
11. No Free issue material will be given
12. Since the goods are to be supplied against the work order meant for research purpose of a research organization under DAE, the necessary GST will be exempted to the party.
13. In case of any query, the party can contact on jaravind@barc.gov.in, ph. No 0891-2892362(O) between 10am to 5pm.

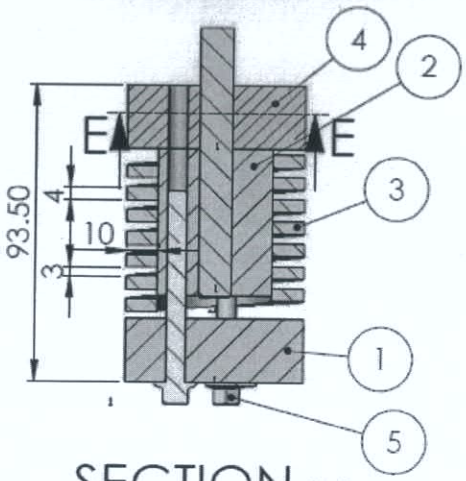
Approving Authority

(Dr. Archana Sharma)
Head, PP&EMD
BARC, Visakhapatnam

डॉ अर्चना शर्मा
Dr. ARCHANA SHARMA
अध्यक्ष, स्पंद शक्ति एवं विद्युत-चुंबकिकीय प्रभाग
Head, Pulsed Power & Electro-Magnetics Division (PP&EMD)
भाभा परमाणु अनुसंधान केंद्र (भारत सरकार)
Bhabha Atomic Research Centre (Government of India)
आटोनगर, विशाखपट्टणम
Autonagar, Visakhapatnam

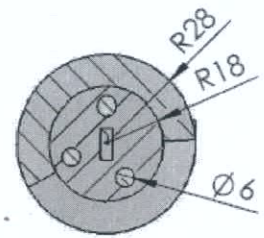
ANNEXURE-(1)



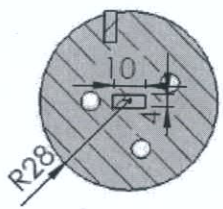


SECTION B-B

Item No.	Item Description
1	One side reinforcement cap
2	Inner reinforcemnt
3	7.5 Turn copper solenoid
4	Other side reinforcemnt cap
5	Screws



SECTION A-A



SECTION E-E

J. Aravind

(JMVVS ARAVIND
SO/C, PP&EMD,
0891-2892362(0))

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	<COMPANY NAME>
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN			TITLE: 65mm Solenoid with 7.5Turns with 10mm x 4mm copper coil out of a solid Rod
			CHECKED			
			ENG APPR.			
			MFG APPR.			
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.			
		MATERIAL	COMMENTS:			SIZE A / DWG. NO. ASSEM4 / REV
NEXT ASSY	USED ON	FINISH				
APPLICATION		DO NOT SCALE DRAWING				SCALE: 1:2 / SHEET 1 OF 1

ANNEXURE-(2)

Detailed Technical Specifications:

Title: "**Fabrication & Supply of Fiber Reinforced Polymer Copper Coils", Quantity: 06**

1. Drawing as attached in the Annexure 1.
2. The coils should be machined according to the dimensions mentioned from a **SINGLE SOLID Beryllium Copper (1.8-2.2% Beryllium tempered-full hard) Rod**. It is also clearly mentioned that, the coil wounded in the form of a helix out of 4mm*10mm beryllium copper strip is **NOT** acceptable. This will be inspected with the supplier during the inspection.
3. Parties must quote price per coil set. Then the total cost can be mentioned for 6 sets. Item-wise quotations will not be entertained and will be disqualified. Party evaluation will be done on the basis of gross cost per set only.
4. Parties must submit a small piece of **Beryllium copper (1.8-2.2% Beryllium tempered-full hard)** material, reinforcement material used along with quotation to ascertain the composition and conductivity. Failing to submit the **sample piece & material testing certificate** during QUOTATION submission will **disqualify** the quotation. Further clarification will **NOT** be done with the party in this regard. The quotation will be strictly disqualified.
5. Party must submit a copy of similar work executed by them for capacity assessment.
6. All parties must be fabricated as per the attached drawings with dimensional tolerance (+/- 0.05mm).
7. All insulating materials: FRP, Kapton, HV insulating paint, Epoxy used should be approved in letter for colour and electrical grade before starting the fabrication.
8. Payment will only be cleared after installation of coils at user site.
9. Coils will be inspected at supplier's work place before dispatch. Any minor modifications suggested by the BARC engineer should be done at extra cost.
10. **Party should offer a warranty of 12 months for manufacturing & material defects. If any failures are noticed during the warranty period, the supplier has to collect the failed coil in person from user and replace the old coil with NEW coil at free of cost. No transportation charges/ any other charges will be given during the warranty period.**
11. Party should provide the **12** X-ray images at 30° azimuthal rotation gap for each coil set (out of 6 coil sets) separately while delivery, in order to confirm the dimensions matching according to specifications given. Party has to quote this price included in the per set cost. Separate cost for X-ray imaging will **NOT be entertained and CANNOT be quoted separately. If found quoted separately, the quotation will be strictly rejected. No future clarifications will be taken from the party in this regard.**
12. Party will be called during installation.
13. Work should be completed within **ONE** month from work order date. Strictly, no extensions will be provided.
14. **Acceptance criteria:** Each coil should withstand a peak pulsed current of 180kA, without any failure. If any failure is encountered during the process, the coil should be replaced by the party at free of cost. Delivery/ transportation, etc. charges should be borne by the suppliers while changing the failed coil. This testing is to be done at users site. This testing will be done in the presence of Supplier, during delivery. Please note that this criterion has already been achieved on similar coils, if the party fail to achieve these values, it will be returned to the supplier without any payment.

J. Aravind
09/10/18.

(JMVVS ARAVIND,
SO/C, PP&EMO)

15. **Other details:**
    a. **No. of Turns, N**: 7.5
    b. **Material:** Beryllium copper (1.8-2.2% Beryllium tempered full-hard) out of a single solid Rod
    c. **Reinforcement material:** Fibre Reinforced Polymer(FRP) and Epoxy casted
    d. **Epoxy grade:** The epoxy to be used should withstand temperatures up to 200°C

J. Aravind 09/10/18.
(JHVVS ARAVIND,
SO/C, PP&EMD).