

INSTITUTE FOR PLASMA RESEARCH
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TENDER NOTICE DATED 26-8-2010

Sealed tenders are invited in from reputed and eligible parties for the following.

Sr. No	Tender Notice No.	Item	Qty.	Due Date & Time for		Tender Fee	EMD (Rs.)
				Submission of tender	Opening of tender		
1.	IPR/TN/PUR/018/10-11	Design, manufacture and supply of 80K Thermal Shields for Experimental Cryostat	1 No.	7-10-2010 by 1.00 p.m.	7-10-2010 2.30 p.m.	1000.00	65000.00

Tender documents are available on IPR Website : www.ipr.res.in/purchasetenders.html. Tenderers meeting the eligibility criteria mentioned in the tender documents may, at their option, download the tender documents from the website and submit their offer along with prescribed **Tender Fee (non refundable) and EMD** in the form of Demand Draft from any nationalized/scheduled bank drawn in favour of **Institute for Plasma Research** and payable at **Ahmedabad** as per the details given in the tender documents. In case party desires to collect the tender documents by post, they may contact the Purchase Officer along with prescribed tender fee. Tender documents will be issued upto **20-9-2010**. Representative who is going to attend the tender opening should carry an authorization letter from the organization for participation in the tender opening failing which he will not be allowed to attend the tender opening.

TENDER NOTICE No.IPR/TN/PUR/018/10-11 DATED 26-08-2010

For Design, manufacture and supply of 80K Thermal Shields for Experimental Cryostat – 1 No.

NOTE:

1. Full details and specifications of the items and general instructions to be followed regarding submission of tenders are indicated in the tender documents.
2. **Proof for fulfillment of eligibility criteria mentioned hereunder should be submitted along with the tender. If the tender is submitted without valid documents, we shall not consider your offer. Tenders received without proof of eligibility criteria will be rejected.**
3. Tender documents can also be obtained by submitting a written request to the Purchase Officer together with prescribed tender fee, provided that the eligibility criteria is fulfilled. Last date for issue of Tender documents is 20-9-2010.
4. While requesting for Tender Documents, such request shall indicate **the “REQUEST FOR TENDER DOCUMENTS AGAINST TENDER NOTICE NO.IPR/TN/PUR/018/10-11 DATED 26-8-2010”.**
5. The tender fee of Rs.1000/- (non refundable) should be made in the form of **DEMAND DRAFT from any nationalized/scheduled bank drawn in favour of Institute for Plasma Research and payable at Ahmedabad.** Vendor's name and tender number shall be indicated on the reverse side of the Demand Draft.
6. **DD should not be prior dated to the date of advertisement. Separate request letter and separate Demand Draft shall be sent for each tender.**
7. Those who use the downloaded tender documents from IPR Website may submit the prescribed Tender Fee keeping in a separate envelope along with the tender.
8. **Tenders received without the prescribed tender fee will be rejected.**
9. No request for the extension of due date will be considered.
10. Late/Delayed offers will not be accepted.
11. Tenders in a sealed envelope superscribing the envelope with the above tender no., date, due date and brief description of tendered item along with EMD for Rs.65,000/- by way of Demand Draft from a nationalized/scheduled bank drawn in favour of **Institute for Plasma Research** and payable at **Ahmedabad** should be submitted to the *Purchase Officer* at the above address by 1.00 p.m. on **7th October, 2010.** Tenders received upto 1.00 p.m. on 7-10-2010 will be opened on the same day at **2.30 p.m.** in the presence of attending tenderers.
12. In the event of any date indicated above is a declared Holiday, the next working day shall become operative for the respective purpose mentioned herein.

13. IPR will not be responsible for any delay/loss of documents in transit.
14. Tenders received without the details asked for including proof of eligibility for participating in the tender may not be considered.
15. Tenderers should furnish/enclose full technical details/literature, delivery period and confirm the terms and conditions attached with the tender.
16. **Those who do not meet with the eligibility criteria need not submit Tender.**
17. **Those who are quoting on behalf of their foreign Principals should submit a Proforma Invoice of Foreign Principals in foreign currency.**
18. The Director, IPR reserves the right to accept or reject any offer in full or part thereof without assigning any reason thereof.
19. **Quotations received without EMD will not be considered.**
20. **AUTHORITY LETTER**
 - a. **The representative who is going to attend the tender opening should carry an authorization letter from the organization for participation in the tender opening failing which he will not be allowed to participate in the tender opening.**
 - b. **The tenderers representative, who reaches the venue of the tender opening late, i.e. after the starting time specified for opening of the tenders, may not be allowed to take part in the tender opening. It should be noted that only one representative of each tenderer will be permitted to participate in the tender opening.**

ELIGIBILITY CRITERIA:

- 1) Should have capability to design & develop double embossed hydro formed panel in-house facility in India including hydro-forming facilities. Should have competency to analyze & optimize the product by combining interactive engineering models, by applying fundamental physical principles, CFD analysis and other mathematical simulation tools. Should have ISO 9001-2000 for design engineering (Proof to be attached for verification)
- 2) Should have strong R & D in design, methodology and fabrication and testing including prototyping apart from CAD & CFD capability using ANSYS software and mathematical modeling competency (Proof to be attached for verification with legal licensing details of software)
- 3) Should have knowledge in “He” leak testing with MSLD, UHV testing, Thermal cycling testing at 80K temperature. Should have in-house high pressure (bursting) testing, Air/water experiment (pressure drop & heat transfer) facility for cryogenics panels.
- 4) Should have work experience with Government or reputed R & D Organizations / Industries (copy of purchase order should be attached for last two/three years)
- 5) Should have at least five years of experience in fabrication

Tender received without submission of above list of proof of certificates will summarily be rejected.

NOTE: Issue of tender documents does not mean that a vendor is qualified to submit tenders. IPR's decision to consider as to whether a vendor has met with the eligibility criteria is final.

INSTRUCTIONS TO BIDDERS AND TERMS AND CONDITIONS

1. The quotation and any order resulting from this tender/enquiry shall be governed by our Conditions of contract and supplier quoting this tender shall be deemed to have read and understood the same in toto.
2. Where counter terms and conditions have been offered by the supplier, the same shall not be deemed to have been accepted by us, unless our specific written acceptance thereof is obtained.
3. **Tender Fee: Tenders received without the prescribed Tender Fee will be rejected.**
4. **Clarifications:**
Any technical and commercial questions, information, clarifications, etc. that may be required pertaining to this Tender/enquiry may be obtained from the Purchaser before submitting the tender.
- 4.1 Bids shall be complete in all respects and shall include properly filled in prices, other specifications, schedules, relevant drawings and catalogues as necessary along with the bid covering letter, all in duplicate.
5. **Quotation:** Your quotation superscribing our tender/enquiry No., date, due date and short description of item should be submitted to the Purchase Officer, IPR in a sealed envelope on or before the due date. Late and delayed quotations will not be considered. IPR will not be responsible for postal delays or any other delays in receipt of quotation. Envelopes received without Tender number, date, due date and short description of item may be rejected. The quoted prices should be firm for a period of 120 days from due date for placing order. IPR is not bound to accept lowest rate/s. IPR reserves the right to place order on one or more parties irrespective of whether he is lowest or not. The scope of supply includes insurance by the Contractor/Supplier.
6. **Specifications:** Material should be offered strictly conforming to our specifications/drawings. Deviation, if any, should be clearly indicated by the supplier in their quotation. The supplier should also indicate the Make/Type number of the materials offered and catalogues, technical literature and samples, wherever necessary should accompany the quotation.
7. **Terms of prices:** Quotation should be submitted on door delivery basis without extra charge wherever possible. For quotations on Ex-Works, Ex-godown basis the approximate packing and forwarding charges should be indicated by the supplier. In the case of local suppliers, the material is to be delivered at our stores free of charge. Unit rate/s should be valid throughout the validity of purchase order/contract period for addition/deletion purposes. Break-up of price should be furnished. The quoted price should not be subject to price escalation for whatsoever reasons. The quoted price shall be firm, fixed and non-revisable during the validity/extended validity of purchase order/contract.
- 7.1 Prices are required to be quoted according to the units indicated in the tender form. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.

- 7.2 Wherever options are specified in the tender documents, IPR reserves the right to accept any option/s irrespective of whether all the vendors have quoted for all the options or not. The decision of IPR in this regard will be final.
8. Tender 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 amounts quoted in words and figures, amount quoted in words shall prevail.
9. IPR shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portion of the quantity offered and the tenderers shall supply the same at the rates quoted.
10. **Sales Tax etc.:** We have no "C" or "D" form. The percentage of Sales Tax/VAT, surcharge, if applicable, and other levies legally leviable and intended to be claimed should be clearly indicated in the tender. Where this is not done, no claim on these accounts would be admissible later.
- 10.1 **VAT Registration:** You may submit a copy of VAT Registration certificate along with your quotation (if applicable).
- 10.2. **Service Tax:** Wherever Service tax is applicable, it should be mentioned clearly. You may indicate percentage of Service Tax in your quotation.
- 10.3 **Excise Duty:** As per Notification No.10/97-CE (Central Excise) dated 1-3-1997, the Purchaser is entitled for availing Excise Duty exemption at present. Excise Duty Exemption Certificate, wherever applicable, and as per rules will be issued at the appropriate time. Hence Excise Duty should not be included in the BID. However, prevailing percentage of Excise Duty may be indicated.
- 10.4 **Customs Duty:** The purchaser is entitled for Customs Duty exemption under Notification No.51/96-Custom dated 23-7-1996 and can place order directly on foreign manufacturers. Necessary Customs Duty Exemption Certificate, wherever applicable, and as per the rules will be issued at appropriate time. Hence, Customs Duty should not be included in the BID. However, prevailing percentage of Customs Duty may be indicated.

Wherever, against a requirement, both indigenous as well as imported offers are received, the offers for imported stores will be evaluated on the basis of the total landed cost after loading the custom duty and other levies as may be applicable from time to time for taking purchase decision.

Offers from Indian Agents on behalf of foreign suppliers: In case the tender is submitted by an Indian supplier/Indian agent on behalf of their foreign supplier/ principals, following documents should be submitted with the tender, failing which, their offer is liable to be ignored.

- a) Photocopy of the Agency Agreement between the Principals and the Indian Agent showing the percentage or the quantum of agency commission payable and a Letter of Authority from the Principals authorizing the Indian Agents to submit the tender on their behalf.
- b) The type and nature of after sales services to be rendered by the Indian Agent

The Indian Agents are allowed to quote on behalf of only one foreign Principal/ Supplier against this tender.

- 10.5 TDS/WCT will be deducted as per Income tax Rules.
- 10.6 **Octroi:** Octroi is not applicable in our case.
11. **Delivery Period:** The scope of work should be completed within 12 weeks from the date of LOI / Purchase order.
12. **Inspection:** Materials on its arrival at IPR will be inspected by Stores In-charge, and his decision in the matter will be final.
13. **EARNEST MONEY DEPOSIT (EMD):**
The Bidder shall submit interest free Earnest Money Deposit (EMD) for Rs.65,000/- (Rupees sixty five thousand only) by way of Demand Draft from a nationalized/scheduled bank issued in favour of "***Institute for Plasma Research***" and payable at **Ahmedabad**.
Tender received without EMD will be rejected at the discretion of IPR.
- 13.1 **EMD of unsuccessful Bidder will be returned after finalizing the Contract/placing Purchase order.**
- 13.2 **The EMD shall be forfeited in case the selected Bidder does not start the work within the time limit specified or fail to complete the work within the stipulated delivery period or fail to comply with any of the terms and conditions in the purchase order/contract.**
- 13.3 **Exemption from payment of EMD:** Firms who are registered with DGS&D and NSIC are exempted from payment of EMD subject to submission of valid registration certificate with the bid. **Tenders received without the valid registration certificate will be rejected.**
14. **Payment:**
- 14.1 10% advance against submission of Bank Guarantee for equivalent amount from a nationalized/scheduled bank as per IPR format.
- 14.2 20% against approval of the detailed design and analyses report by IPR and on receipt of Bank Guarantee for equivalent amount from a nationalized/scheduled bank as per IPR format.
- 14.3 50% after manufacturing of full scale Panels and acceptance of the same by IPR representative at vendor site and on delivery of the Panels at IPR.
- 14.4 20% within 30 days from the date of final acceptance and commissioning of the Prototype Panels at IPR and on receipt of Performance Bank Guarantee for 10% of the order/contract value from a nationalized/scheduled bank valid through out the guarantee period, as per IPR format.
- 13.5 **Advance payments other than mentioned above will be loaded with interest @ 12% p.a. upto the delivery period quoted.**

Wherever, advance payment is involved, it will be paid only against submission of Bank Guarantee from a Nationalised/scheduled Bank. Bank Guarantees should be furnished as per IPR format.

15. No correspondence will be entertained within 30 days from the date of receipt of material and bills, whichever is later.
16. Quotation should be valid at least for 120 days from the date of opening of the tender.
17. Delivery periods be clearly indicated against each item separately.
18. **Guarantee:** The Stores/material/goods/equipment offered by the bidder should be guaranteed for a minimum period of twelve months from the date of acceptance, against defective materials, design, workmanship, operation or manufacture. For defects noticed during the Guarantee period, replacement/ rectification should be arranged free of cost within a reasonable period of such notification. In cases where our specifications call for a guarantee period more than 12 months specifically, then such a period shall apply.
19. **Security Deposit:** The successful Bidder will have to furnish to the Purchaser an interest free security deposit for 10% (Ten percent) of the order value in the form of Bank Guarantee of an equivalent amount from a nationalised/scheduled Bank within 15 days from the date of LOI/Purchase order and the said Guarantee should be valid till the goods are accepted by IPR. The Security deposit shall be forfeited in case the selected Bidder does not start the work within the time limit specified or fail to complete the work within the stipulated delivery period or fail to comply with any of the terms and conditions in the purchase order/contract.
20. **Liquidated Damages:** In addition to forfeiting Security Deposit, Liquidated Damages for the delay shall be 1/2% (half percent) of the total order value for the delay of each week in the scheduled time of supply or the scheduled date of final completion for the work as the case may be, subject to a maximum of 5% (five percent) of total order value. Liquidated Damages will be recovered from the payment due to the supplier.
21. **Performance Bank Guarantee:** The Contractor/Supplier will have to furnish to the Purchaser (IPR) an interest free performance bank guarantee for 10% (Ten percent) of the order value/ contract value by Demand Draft or by way of providing a Bank Guarantee from a Nationalised/Scheduled Bank valid for a period of 12 months/guarantee period mentioned in the order from the date of installation/acceptance for satisfactory performance of the work carried out by the Contractor.
22. The Contractor/Supplier shall at all times indemnify the purchaser against all claims which may be made in respect of the stores/material/goods/equipment for infringement of any right protected by Patent Registration of design or Trade Mark and shall take all risk of accidents or damage, which may cause failure of supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfillment of the contract.
23. **BAR/PERT Charts:**
To be provided as per the requirement of Purchaser.
24. **Sub-Contract:** All sub-contractors are required to be appraised and approved by the Purchaser before placement of orders by the Vendor.

25. **Jurisdiction:** The contract/Purchase order shall be governed by the Laws of India for the time being in force. The Courts of Ahmedabad only shall have jurisdiction to deal with and decide any legal or dispute arising out of this contract.

26. **Settlement of disputes:** Any disputes or difference arising out of or in connection with the Contract/Purchase order shall be to the extent possible settled amicably between the parties.

If amicable settlement cannot be reached then all disputed issues shall be settled by arbitration.

27. **Arbitration:** In the event of any dispute or difference arising under this Contract, the matter shall be referred to the Arbitrators one each nominated by the Purchaser and Contractor from their respective organisations. In case the said Arbitrators are not able to settle the dispute by themselves, the matter shall be referred to the Arbitrator mutually nominated by the Purchaser and the Contractor and whose decision will be final and binding on both the parties. The venue of arbitration will be IPR. Subject to as aforesaid the Arbitration Act, 1996 and the rules thereunder and any statutory modification thereof for the time being in force shall be deemed to apply to the Arbitration proceedings under this Contract.

28. **Permits and Licences:** The Contractor shall secure and pay for all permits and licence which he may require to comply with in respect of all laws, ordinances and regulations of the Government or Public Authorities in connection with the performance of his obligations under the Contract. The successful contractor shall be responsible for all damages and shall indemnify and save the Purchaser harmless from and against all claims for damages and liability which may arise due to his failure to comply with what is stated above.

29. **Training:** The successful tenderer shall, if required by the Purchaser, provide facilities for the practical training of Purchaser's engineering or technical personnel for their active association on the manufacturing process throughout the manufacturing period of the Contract/stores, number of such personnel to be mutually agreed upon.

30. **Operation/Instruction Manual:** Where operation/instruction manual is essential to enable the Purchaser to put the stores to proper use, the successful tenderer shall furnish such operation/instruction manual along with the stores.

31. **Test Certificate:** Wherever required, test certificates should be sent along with the despatch documents.

32. **Secrecy:**

32.1 All information, drawings, designs and specifications imparted to the bidder/successful contractor shall, at all times, remain the absolute property of the Purchaser, the bidder/successful contractor shall not use them for purposes other than for which they are provided for and shall treat all these documents as confidential. These shall not be reproduced in whole or in part for any other purpose.

32.2 The contractor shall use his best endeavours to ensure that such information are not divulged to third parties except where needed for the performance of the contract by the successful bidder with the prior consent of the Purchaser. In such cases, the successful contractor shall ensure and obtain similar obligation of confidence, from third parties in question.

33. **Indemnity:** The Contractor shall warrant and be deemed to have warranted that all stores supplied against this contract are free and clean of infringement of any Patent, copy right or trade mark and shall at all times indemnify the Purchaser against all claims which may be made in respect of the stores for infringement of any right protected by patent. Registration of design or Trade Mark and shall all risk of accidents of damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfilment of the contract.
34. **Counter terms and conditions of Suppliers:** Where counter terms and conditions printed or cyclostyled conditions have been offered by the supplier, the same shall not be deemed to have been accepted by the Purchaser unless specific written acceptance thereof is obtained.
35. **Installation/commissioning/site works:** Wherever these activities are part of scope of work/specifications, Vendor should carryout out the same without any extra cost to IPR.
36. **Free Issue Material (FIM) (If specified in the tender documents):** Successful tenderer will have to furnish in the form a Bank Guarantee or in any other form as called for by the Purchaser towards adequate security for the materials/property provided/issued by the Purchaser as Free Issue Material (FIM) for the due execution of the contract. Successful bidder shall submit Bank Guarantee from a nationalized bank and arrange insurance for the cost of FIM at his expenses.
37. Late/delayed tenders will not be accepted. Incomplete tenders may be rejected at the discretion of IPR.
38. **IPR is not bound to accept the lowest tender. IPR reserves the right to select any vendor at its sole discretion.**
39. **Result of the tenders:** Unsuccessful tenderers will not be informed of the result of their tenders.
40. The Director, IPR reserves the right to accept or reject any quotation/tenders fully or partly without assigning any reason.
41. IPR reserves the right to place order on a single party or to split the order at its sole discretion.

We agree to the above terms and conditions.

Place:

Signature of Bidder with seal

Date:

Note: A copy of our terms and conditions duly signed should accompany your quotation.

80 K Thermal Shields for Experimental Cryostat

Scope of Work:

The `Scope of Work' comprises of the detailed designs (including supports design, Internal connections design, design of the inlet and outlet headers, analyses of the designed systems for fluid flow and thermal behaviour for temperature distribution and pressure drops etc) and manufacturing of the 80K thermal shields of the experimental cryostat. These panels should be cryo compatible for 80 K applications at high vacuum environment of the order of 10^{-5} mbar. These panels are required to be vacuum leak tight up till 10^{-9} mbar lit/sec. The weld joints in the panels must be compatible with cryo temperature operation at 80K. Both sides of the panels should be polished to achieve highest radiation emissivity of the order of 0.2-0.3.

The supplier will have to supply a complete set of panels as per the outlined drawing in annexure-I. The panel will be cooled by single phase nitrogen or by single phase cold helium gas. The operating pressure of the system would be 6 bar (max) and each panel must with stand a burst pressure of 25 bar for safety. Each panel has to be equipped with suitable mounting arrangement and the inlet & outlet headers. All interconnections of panels are in the scope of work of vendor. Vendor's scope also includes the inlet and outlet flange connections to the panels at cryostat body. All internal connections within the cryostat are required to be done by the vendor as may be required. Vendor will also be responsible for commissioning the cryostat panels at IPR site with its own resources.

Sr.No	Activity	By
1.0	Supply of cryostat layout drawings	IPR
2.0	Preparation of detailed dimensional drawings of all 80 K cryostat shields	vendor
3.0	Submission of QA/QC document for the scope of work covered herein (Design, prototyping – if any, manufacturing, testing, inspection, surface finish, acceptance, packing forwarding, storage at site, assembly and integration and final commissioning etc.)	vendor
4.0	Preparation of Design Document format and submission for approval	vendor
4.1	Mechanical design and analysis of shields as per applicable ASME code	vendor
4.2	Design calculations and analysis (flow patterns, temperature distribution, pressure drops in the individual panels, for given flow rate and max peak temperature on panel surface being less than 85K) and assembly flexibility/ provision analysis.	vendor
5.0	Design Document Submission.	vendor
5.1	Detail engineering calculations for shields and internal hydraulics of the shield circuit.	vendor
5.2	Flexibility analysis for integrated assembly of the	vendor

	panels.	
6.0	Design Review and design approval	IPR
7.0	Manufacturing and supply	
7.1	Manufacturing of full scale panels	Vendor
7.2	Inspection of panels	IPR
7.3	Leak rate measurement before and after three thermal shocks	Vendor witness by IPR
7.4	Supply of panels to IPR site	Vendor
7.5	Commissioning of panels at IPR cryostat	Vendor

Codes and Standards to be followed as per which the design will be done and report will be made

Sr. No	Task	Codes and Standards	Compliance by vendor
1	Design Phase <ul style="list-style-type: none"> ○ Flow pattern ○ Thickness of shield ○ T-distribution ○ Flow Thermo-hydraulics ○ Supports design ○ Process Piping ○ Integrated system design 	vendor ASME VIII-div-I ANSYS or equivalent Fluent / CFD or equivalent ANSYS or equivalent ASME B31.3 CEASER or equivalent	

Essential technical requirements of the panels:

These panels would be double embossed type panels with the following technical specifications:

1. Material : S.S 304L / S.S. 316L
2. Thickness of plate : as per vendor's design
3. Panel construction : suitable for desired application
4. Surface roughness : 2 delta finish
5. Leak rate : 10^{-9} m.bar liter/sec
6. Headers of standard size to be connected for connecting the component with cryo fluid supply.

Acceptance Procedure:

(a) Design Review:

Following points shall be covered in the design documents and reviewed thereafter.

- Thermal shield design as per relevant ASME code

- Coolant flow patterns inside the shields, appropriate overlap for adjacent shields,
- Thermal stresses at the critical locations in the shields arising due to the temperature distribution on them and support locations due to heat load.
- Magnitude of shape change due to cool down
- Temperature distribution and uniformity across shields surfaces; panel surface should be uniformly cooled in steady state operating condition. The relative temperature within the panel surface should not raise above 5k.
- Flow parameters – for the given mass flow rate of, inlet/outlet pressure drop within each panel, temperature at inlet and outlet for the fluid, max fluid temperature with I the panel,
- Overall pressure drop in the integrated hydraulic path.
- Integrated performance verification of entire shield system.
- Complete set of layout drawings of entire assembly of 80 K shield panels to IPR
- Vendor shall submit the design document consisting of above points and make a presentation of the same in front of design review committee of IPR.

At the end of the design review, vendor will incorporate any suggestions, modifications and changes if recommended by review committee and carry out the analysis if it is needed and submit the final design and analysis document to IPR.

- (b) The panels will be approved if and only if these design specifications are met in the fabricated panels and the temperature uniformity remains within 10 K and the pressure drop remains below 1.5 bar in the hydraulic circuit for the given flow in a testing of the assembled panel in the cryostat.

Delivery period: The scope of work should be completed within 12 weeks from the date of LOI / order.

Annexure-I

