

**TENDER DOCUMENT FOR THE
PURCHASE OF EQUIPMENTS**

BID REFERENCE : PUR/155/RP&TG/RB/2008-09

LAST DATE AND TIME FOR RECEIPT OF BIDS : **21/08/2008 by 14.30 hrs.**

TIME AND DATE OF OPENING OF BIDS (*Technical Bid only*) : **15.00 hrs. onwards on 21/08/2008**

ADDRESS FOR COMMUNICATION : Director
Central Mechanical Engineering
Research Institute
Mahatma Gandhi Avenue
Durgapur 713 209

N.B.: (1) All the pages of the Tender Document should be signed, stamped and Submitted with the offer.
(2) This Tender Document is non-transferable.
(3) Tender document can be downloaded free of cost from our website www.cmeri.res.in

CENTRAL MECHANICAL ENGINEERING RESEARCH INSTITUTE
Mahatma Gandhi Avenue, Durgapur – 713209
(Council of Scientific & Industrial Research)

No. PUR/Advt./2008-09/03

Date: 21/07/2008

TENDER NOTICE

Sealed tenders are invited [under **Two Bid System** i.e. **Technical** and Commercial Bids(in duplicate)] from reputed Engineering & Consultancy firms .

Sl.	Tender Docu. No.	Item Description	Qty.	Cost of Tender Document (Rs.)	EMD (Rs.)
1	PUR/155/RP&TG/RB/2008-09	Design and Engineering Work related to the development of three Valves and their test rigs to be used for Civilian Aircrafts	01	300-00	50000/-

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- All bids shall be accompanied with EMD as specified in the shape of Demand Draft or Bank Guarantee in favour of the **Director, C.M.E.R.I., Durgapur.**
 - **EMD** can be submitted in equivalent **USD** also.
 - Please note that Tender Document is non-transferable.
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Tender Document can be obtained from the Controller of Stores & Purchase, CMERI, Durgapur-713209 , on payment of Tender document fees (non refundable) as mentioned above by Demand Draft drawn in favour of Director, C.M.E.R.I., Durgapur on all working days. **Tender documents can also be downloaded from our website <http://www.cmeri.res.in> , in that case no tender document fee is leviable .**

Please peruse the Terms and Conditions, specifications, instructions etc. in the tender document.

Last date for submission of completed Tenders up to **14.30 hrs: 21/08/2008**

Technical Bid will be opened on the same day **at 15.00 hrs.** onwards.

For more details please visit our website <http://www.cmeri.res.in> , for clarification please contact Controller of Stores & Purchase (**Telefax: 0343-254 6586**),e-mail: pur@cmeri.res.in.

Controller of Stores & Purchase

CHAPTER - I

INSTRUCTIONS TO BIDDER

A. Introduction

1. Eligible Bidders

1.1 This Invitation for Bids is open to all Engineering & Consultancy firms.

2. Cost of Bidding

2.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and Central Mechanical Engineering Research Institute hereinafter referred to as "the Purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

B. The Bidding Documents

3. Content of Bidding Documents

3.1 The Services required, bidding procedures and contract terms are prescribed in the bidding documents. In addition to the Invitation for Bids, the bidding documents include:

- (a) Instruction to Bidders;
- (b) Conditions of Contract (CC);
- (c) Special Conditions of Contract (CC);
- (d) Technical Specifications;
- (e) Bid Security Form;
- (f) Performance Security Form;

3.2 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in rejection of its bid.

4. Amendment of Bidding Documents

4.1 At any time prior to the deadline for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by amendment.

4.2 All prospective bidders who have received the bidding documents will be notified of the amendment in writing or by cable or by fax, and will be binding on them.

4.3 In order to allow prospective bidders reasonable time in which to take the amendment into account in preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids.

C. Preparation of Bids

5. Language of Bid

5.1 The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid and exchanged by the Bidder and the Purchaser, shall be written in English language.

6. Documents Comprising the Bid

6.1 The bid prepared by the Bidder shall comprise with EMD as mentioned in Notice Inviting Tender at page 2.

7. Bid Prices

7.1 The Bidder shall indicate the unit prices and total bid prices of the goods it proposes to supply under the order.

7.2 Prices indicated shall be entered separately in the following manner (For indigenous items):

- (i) the price of the goods/services quoted (ex-works, ex-factory, ex-showroom, ex-warehouse, or off-the-shelf, as applicable), including all duties and sales and other taxes already paid or payable;
- (ii) any duties, sales and other taxes which will be payable on the goods if this Contract is awarded;

7.3 Fixed Price. Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account.

8. Bid Currencies

8.1 Prices shall be quoted in Indian Rupees / Foreign currency as the case may be.

9. Documents Establishing Goods' Eligibility and Conformity to Bidding Documents.

9.1 The documentary evidence of conformity of the goods and services to the bidding documents may be in the form of literature, drawings and data, and shall consist of:

- (a) a detailed description of the essential technical and performance characteristics of the services
- (b) an item-by-item commentary on the Purchaser's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications or a statement of deviations and exceptions to the provisions of the Technical Specifications- II

9.2 For purposes of the commentary to be furnished pursuant to above, the Bidder shall note that standards designated by the Purchaser in its Technical Specifications are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, in its bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications II.

10. Bid Security

10.1 The Bidder shall furnish, as part of its technical bid, a bid security of Rupees / foreign currency (as mentioned in the Notice Inviting Tender at page 2).

10.2 The bid security is required to protect the Purchaser against the risk of Bidder's conduct, which would warrant the security's forfeiture.

10.3 The bid security shall be in Indian Rupees/ foreign currency and shall be in one of the following forms:

- (a) A bank guarantee issued by a nationalized/scheduled bank, in the form provided in the bidding documents and valid for 90 days beyond the validity of the bid; or
 - (b) A Banker's check at par, certified check or demand draft.
- 10.4 Any bid not secured in accordance with Clauses 10.1 and 10.3 above will be rejected by the Purchaser as non-responsive.
- 10.5 Unsuccessful bidder's bid security will be discharged/returned as promptly as possible but not later than 30 days after the expiration of the period of bid validity or placement of order which ever is later.
- 10.6 The successful Bidder's bid security will be discharged upon the Bidder furnishing the performance security.
- 10.7 The bid security may be forfeited:
- (a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid Form; or
 - (b) in case of a successful Bidder, if the Bidder fails to accept the order and fails to furnish performance security.

11. Period of Validity of Bids

- 11.1 Bids shall remain valid for 90 days after the date of bid opening prescribed by the Purchaser. A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.
- 11.2 In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing (or by cable, telex, or fax). The bid security provided under Clause 10 shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid.
- 11.3 Bid evaluation will be based on the bid prices without taking into consideration the above corrections.

12. Format and Signing of Bid

- 12.1 The Bidder shall prepare two copies of the bid, clearly marking each with "Technical Bid(original)", "Technical (duplicate)" and "Commercial Bid", as appropriate.
- 12.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. All pages of the bid, except for un-amended printed literature, shall be initialed by the person or persons signing the bid.
- 12.3 Any interlineations, erasures or overwriting shall be valid only if they are initialed by the persons or persons signing the bid.
- 12.4 The Bidder shall furnish information on commissions or gratuities, if any paid or to be paid to agents relating to this Bid, and to contract execution if the Bidder is awarded the contract.

D. Submission of Bids

13. Sealing and Marking of Bids

13.1 The Bidders shall seal the original and each copy of the bid in separate inner envelopes, duly marking the envelopes as "original" and "copy". He shall then place all the inner envelopes in an outer envelope.

13.2 The inner and outer envelopes shall:

(a) be addressed to the Purchaser at the following address:

Director
Central Mechanical Engineering Research Institute
Mahatma Gandhi Avenue
Durgapur 713 209.

(b) bear the Tender No., due date and a statement "Do not open before 14.30 hours (Date as mentioned at Page-2)" .

13.3 If the outer envelope is not sealed and marked as required Clause 13.2, the Purchaser will assume no responsibility for the bid's misplacement or premature opening.

14. Deadline for Submission of Bids

14.1 Bids must be received by the Purchaser at the address specified under Clause 13.2 no later than the time and date specified in the Invitation for Bids (Section I). In the event of the specified date for the submission of Bids being declared a holiday for the Purchaser, the Bids will be received upto the appointed time on the next working day.

14.2 The Purchaser may, at its discretion, extend this deadline for submission of bids by amending the bid documents in accordance with Clause 4, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

15. Late Bids

15.1 Any bid received by the Purchaser after the deadline for submission of bids prescribed by the Purchaser, pursuant to Clause 14, will be rejected and/or returned to the Bidder.

16. Modification and Withdrawal of Bids

16.1 The Bidder may modify or withdraw its bid after the bid's submission; provided that written notice of the modification or withdrawal is received by the Purchaser prior to the deadline prescribed for submission of bids.

16.2 The Bidder's modification or withdrawal notice shall be prepared, sealed, marked and dispatched in accordance with the provisions of Clause 13. A withdrawal notice may also be sent by telex or cable or fax but followed by a signed confirmation copy, post marked not later than the deadline for submission of bids.

16.3 No bid may be modified subsequent to the deadline for submission of bids.

- 16.4 No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the bid form. Withdrawal of a bid during this interval may result in the Bidder's forfeiture of its bid security, pursuant to Clause 10.7.

E. Bid Opening and Evaluation of Bids

17. Opening of Bids by the Purchaser

- 17.1 The Purchaser will open all bids, in the presence of Bidders' representatives who choose to attend, at 14:30 hours on (date as mentioned at Page-2).

The Bidders' representatives who are present shall sign a register evidencing their attendance. In the event of the specified date of Bid opening being declared a holiday for the Purchaser, the Bids shall be opened at the appointed time and location on the next working day.

- 17.2 The bidders' names, bid modifications or withdrawals, bid prices, discounts, and the presence or absence of requisite bid security and such other details as the Purchaser, at its discretion, may consider appropriate, will be announced at the opening. No bid shall be rejected at bid opening, except for late bids. Bids received without the requisite bid security shall be returned to the bidder.

- 17.3 Bids (and modifications sent pursuant to Clause 16.2) that are not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances.

18. Clarification of Bids

- 18.1 During evaluation of bids, the Purchaser may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing and no change in prices or substance of the bid shall be sought, offered or permitted. However, no negotiation shall be held except with the lowest bidder.

19. Preliminary Examination

- 19.1 The Purchaser will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.

- 19.2 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If the supplier does not accept the correction of errors, its bid will be rejected. If there is a discrepancy between words and figures, the amount in words will prevail.

- 19.3 The Purchaser may waive any minor informality, non-conformity, or irregularity in a bid, which does not constitute a material deviation, provided such a waiver, does not prejudice or affect the relative ranking of any Bidder.

- 19.4 Prior to the detailed evaluation, the Purchaser will determine the substantial responsiveness of each bid to the bidding documents. For purposes of these Clauses, a substantially responsive bid is one which conforms to all the terms and conditions of the bidding documents without material deviations. Deviations from or objections or reservations to critical provisions such as those concerning Performance Security (CC Clause 7), Warranty (CC Clause 15), Force Majeure (CC Clause 25), Applicable law (CC Clause 30) and Taxes & Duties (CC Clause 31) will be deemed to be a material deviation. The Purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

- 19.5 If a bid is not substantially responsive, it will be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

20. Contacting the Purchaser

- 20.1 Subject to Clause 18, no Bidder shall contact the Purchaser on any matter relating to its bid, from the time

- of the bid opening to the time the Contract is awarded. If the bidder wishes to bring additional information to the notice of the purchaser, it should do so in writing.
- 20.2 Any effort by a Bidder to influence the Purchaser in its decisions on bid evaluation, bid comparison or contract award may result in rejection of the Bidder's bid.
- 21. Purchaser's right to vary Quantities at Time of Award**
- 21.1 The Purchaser reserves the right at the time of Contract award to increase or decrease the quantity of goods and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions.
- 22. Purchaser's right to accept Any Bid and to reject any or All Bids**
- 22.1 The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Purchaser's action.
- 23. Notification of Award**
- 23.1 Prior to the expiration of the period of bid validity, the Purchaser will notify the successful bidder in writing by registered letter or by cable or telex or fax the Purchase Order.
- 23.3 Upon the successful Bidder's furnishing of performance security pursuant to Clause 24, the Purchaser will promptly notify each unsuccessful Bidder and will discharge its bid security, pursuant to Clause 10.

CHAPTER - II

CONDITIONS OF CONTRACT

1. Definitions

1.1 In this Contract, the following terms shall be interpreted as indicated:

- (a) "The Order" means the Purchase Order placed by the Purchaser including all the attachments and appendices thereto and all documents incorporated by reference therein;
- (b) "The Contract Price" means the price payable to the Supplier under the Order for the full and proper performance of its contractual obligations;
- (c) "Services" means services mentioned in chapter III
- (d) "CC" means the Conditions of Contract contained in this section.
- (e) "SCC" means the Special Conditions of Contract.
- (f) "The Purchaser" means "Central Mechanical Engineering Research Institute" commonly known as "CMERI".
- (g) "The Purchaser's country" is "India".
- (h) "The Supplier" means the individual or firm supplying the Goods and Services under this Contract.
- (i) "Day" means calendar day.

2. Application

2.1 These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

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4. Use of Contract Documents and Information

4.1 The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far, as may be necessary for purposes of such performance.

4.2 The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information enumerated in CC Clause 5.1 except for purposes of performing the Contract.

4.3 Any document, other than the Contract itself, enumerated in CC Clause 5.1 shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so required by the Purchaser.

5. Patent Rights

The Supplier shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods or any part thereof in India.

6. Submission of the bids.

- 6.1 All bids complete in all respect must reach this office within the last date and time of receipt of bid. No extension shall be allowed for any reason what so ever. Late tenders, Tenders received without Earnest Money etc. shall be rejected.
- 6.2 Tender documents are available for sale at this office. Interested bidders may purchase the tender documents on payment of the cost there of. The Purchaser is not liable for either non-receipt of the tender document or for non-receipt of the tender documents.

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8. Inspections and Tests

- 8.1 The Purchaser or its representative shall have the right to inspect the deliverables to confirm their conformity to the Contract specifications at no extra cost to the Purchaser.
- 8.2 The inspections may be conducted in our premises..
- 8.3 Should any inspected deliverables fail to conform to the specifications, the Purchaser may reject the same & the bidder shall make alterations necessary to meet specification requirements free of cost to the Purchaser.

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10. Delivery and Documents

- 10.1 Delivery of the Services shall be made by the Supplier in accordance with the terms specified by the Purchaser in the Notification of Award. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.

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16. Payment

- 16.1 The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents, submitted pursuant to CC Clause 10, and upon fulfillment of other obligations stipulated in the contract.
- 16.2 Payments shall be made promptly by the Purchaser but in no case later than sixty (60) days after

submission of the invoice or claim by the Supplier.

16.3 Payment shall be made in Indian Rupees.

17. Prices

17.1 Prices charged by the Supplier for Goods delivered and Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with the exception of any price adjustments authorized in SCC or in the Purchaser's request for bid validity extension, as the case may be.

18. Change Orders

18.1 The Purchaser may at any time, by written order given to the Supplier pursuant to GCC Clause 31, make changes within the general scope of the Contract

18.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the bidder for adjustment under this clause must be asserted within thirty (30) days from the date of the bidder receipt of the Purchaser's change order.

19. Contract Amendments

19.1 Subject to CC Clause 18, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

20. Assignment

20.1 The Supplier shall not assign, in whole or in part, its obligations to perform under the Contract, except with the Purchaser's prior written consent.

21. Subcontracts

21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under this Contract if not already specified in the bid. Such notification, in his original bid or later, shall not relieve the Supplier from any liability or obligation under the Contract.

22. Delays in the bidder's Performance

22.1 Delivery of the Goods and performance of the Services shall be made by the Supplier in accordance with the time schedule specified by the Purchaser.

22.2 If at any time during performance of the Contract, the Supplier or its sub-contractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may, at its discretion, extend the Supplier's time for performance with or without liquidated damages, in which case the extension shall be ratified by the parties by amendment of the Contract.

22.3 Except as provided under CC Clause 25, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to CC Clause 23, unless an extension of time is agreed upon pursuant to CC Clause 22.2 without the application of liquidated damages.

23. Liquidated Damages

23.1 Subject to CC Clause 25, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the 1% of price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of 10% Percentage. Once the maximum is reached,

the Purchaser may consider termination of the Contract pursuant to CC Clause 24.

24. Termination for Default

24.1 The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:

- (a) if the Supplier fails to deliver any or all of the Goods / Services within the period(s) specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to CC Clause 22; or
- (b) if the Supplier fails to perform any other obligation(s) under the Contract.
- (c) If the Supplier, in the judgement of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

‘For the purpose of this Clause:

“Corrupt practice” means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.

“fraudulent practice: a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;”

24.2 In the event the Purchaser terminates the Contract in whole or in part, pursuant to CC Clause 24.1, the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the Contract to the extent not terminated.

25. Force Majeure

25.1 Notwithstanding the provisions of CC Clauses 21, 22, 23 the Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

25.2 For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

25.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

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28. Resolution of Disputes

28.1 The Purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

28.2 If, after thirty (30) days from the commencement of such informal negotiations, the Purchaser and the

Supplier have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms specified in the SCC. These mechanisms may include, but are not limited to, conciliation mediated by a third party, adjudication in an agreed national or international forum, and national or international arbitration.

29. Governing Language

- 29.1 The contract shall be written in English language. Subject to CC Clause 30, English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the same language.

30. Applicable Law

- 30.1 The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to Durgapur jurisdiction.

31. Taxes and Duties

- 31.1 Suppliers shall be entirely responsible for all taxes, duties, license fees, octroi, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser. However, Sales tax (not surcharge in lieu of Sales tax) in respect of the transaction between the Purchaser and the Supplier shall be payable extra, if so stipulated in the Notification of Award.

CHAPTER - III

Schedule of requirements:

1.Tender Docu.No.PUR/155/RP&TG/RB/2008-09

**Design and Engineering Work related to the development of three valves
And their test rigs to be used for Civilian Aircrafts.**

Qty. : One

(Detailed specification mentioned in Chapter – IV)

CHAPTER-IV **Specification & allied technical details**

1. Tender Docu.No.PUR/155/RP&TG/RB/2008-09

Design and Engineering Work related to the development of three valves And their test rigs to be used for Civilian Aircrafts.

Outsourcing of Design Activity

CMERI, Durgapur intends to outsource a part of analysis, design and engineering work related to the development of three valves to be used on Civilian Aircraft, as well as design of test rigs pertaining to these valves. The three valves are:

- Fuel Shut-off Valve (5/8" ATF, fuel supply)
- Pressure Reducing & Shut-off Valve (2" pneumatic, ECS)
- Non return Valve (3" pneumatic, ECS)

CMERI already has a team of skilled Scientists and Technicians who are equipped with the appropriate software and their working platform. However, the present job involves high level knowledge of specialized fluid systems components design, analysis and testing, which requires outsourcing of this part of design work to the appropriate organization capable of executing the work as detailed in Annexure-I ("Scope of Work").

The bidder should have an Expert/Main Technical Person having at least 15 years of experience in this area. The main technical person of the bidder should have M. Tech / PhD in Fluid Power Engineering from a reputed Institute and have experience in conducting R&D activities for Government/Semi-Government Institutions (please attach credentials).

Thorough knowledge of fluid valve design, including experience in detail components design, their tolerance and GD&T shall be essential on the part of the Main Technical Person of the bidder. The Expert should have a track record of Trouble Shooting, resulting in successful performance and commercialization, of the Prototype Hydraulic/Pneumatic Valve. The bidder is also expected to have intensive experience in design and operation of test rigs needed for performance testing of such valves (please attach credentials).

Training of Engineers and Scientists for test rig operations is also a part of the scope of work. The bidder must have experience in training of technical students in a reputed institute in this regard (please attach credentials).

The above work may require frequent interactions with the CMERI design team. The bidder should be prepared to establish the required contacts and allot the time necessary to such direct communications with the members of CMERI design team. The main technical person may have to stay at Durgapur for long duration. It shall be the responsibility of the bidder to provide and accept technical clarifications whenever called for. Visits shall be scheduled to CMERI in a planned manner, with prior information for this purpose. The duration of the visits shall be as mutually agreed upon.

Details of design work as explained in the scope of work document shall be delivered promptly, maintaining a meaningful sequence (Bar-Chart enclosed, Annexure-II) so as to complete the work within the stipulated time. Co-ordination with hardware and rig suppliers may also be required. It is necessary that the bidder should keep a check on the activities of the test rig supplier and ensure the quality of test rigs by periodic and final inspections.

This project is required to be monitored by specific task forces/committees as appointed by CSIR who will review the progress periodically. It is also required that the bidder, on award of the contract, shall attend such meetings and shall be answerable to their conveners.

Technical Evaluation Criteria

The bidder/main technical person should have:

High level knowledge of specialized fluid systems components design, analysis and testing.

At least 15 years of experience in the relevant area.

M. Tech / PhD in Fluid Power Engineering and have experience in conducting R&D activities for Government/Semi-Government Institutions.

Thorough knowledge of fluid valve design, including experience in detail components design, their tolerance and GD&T.

Intensive experience in design and operation of test rigs needed for performance testing of such valves.

Experience in training of qualified technical personnel in this regard.

N.B. Please note that terms and conditions for 'Services' only will be applicable.

ANNEXURE - I

SCOPE OF WORK

WORK PACKAGE - 1

Valve/Test Rigs	Activity details	Deliverables
Test Rigs	Preparation of test requirements for three valves as mentioned	Acceptance Test Procedure, qualification tests procedure documents
	Finalization of Test Rigs Specifications based on above	Test rigs specifications
	Detail design of test rigs with bill of material as per layout design	Tender technical Documentation for test rigs
	To supervise and check test rig drawings	
	To prepare technical tender specifications	

WORK PACKAGE - 2

Valve/Test Rigs	Activity details	Deliverables
5/8" Fuel Shut-off Valve (FSV)	To carry out detail design of actuator body	The set of mechanical drawings with nominal dimensions
	To revise design of Bellville Spring	
	To check full assembly of unit and to carry out minor improvements if required	
	To check all detailed designs and certify compatibility	
	To write Specification of Special Features	Specification Document
	To finalize all tolerances	Design Report and Drawings of Engineering Model
	To finalize geometrical tolerance wherever applicable	
	To check suitability of electrical items	
	To prepare Design Report (DR)	
2" Pressure Reducing & Shut-off Valve (PRSOV)	To supervise finalization of 3D modeling of three major items, viz Body, Piston & Flange	Report on 3D model of PRSOV & Preliminary Design report

	To supervise 3D modeling of Datum Unit and Solenoid valve	
3" Non Return Valve (NRV)	To supervise finalization of 3D modeling of all items of NRV	Report on 3D model of NRV & Preliminary Design report
	To finalize Spring Design	

WORK PACKAGE - 3

Valve/Test Rigs	Activity details	Deliverables
	To check Flow Pattern Analysis	Final 3D Model of PRSOV
	To check Stress Pattern Analysis	
2" Pressure Reducing & Shut-off Valve (PRSOV)	Modification of 3D Model to improve Flow & Stress Pattern	
	To finalize Model by iteration	
2" Pressure Reducing & Shut-off Valve (PRSOV)	To check 2D drawings output from model	Design Report and Drawings of Engineering Model
	To finalize all tolerances	
	To finalize geometrical tolerance wherever applicable	
	To check suitability of electrical items	
	To check final assembly drawing	
	To prepare Design Report (DR)	

	To check Flow Pattern Analysis	Final 3D Model of NRV
	To check Stress Pattern Analysis	
3" Non Return Valve (NRV)	Modification of 3D Model to improve Flow & Stress Pattern	
	To finalize Model by iteration	
3" Non Return Valve (NRV)	To check 2D drawings output from model	Design Report and Drawings of Engineering Model
	To finalize all tolerances	
	To finalize geometrical tolerance wherever applicable	
	To check final assembly drawing	
	To prepare Design Report (DR)	

WORK PACKAGE - 4

Valve/Test Rigs	Activity details	Deliverables
Test Rigs	Technical Evaluation of Technical Offers	Comparative Statements, Order Specifications
	To attend Technical meetings with Vendors	
	To certify order specifications	
	Periodic and Final Inspection at Vendor's premises	Inspection report of each visit and Final Acceptance (FA) report of test rigs
	Periodic Inspection and Final commissioning at CMERI	

WORK PACKAGE - 5

Valve/Test Rigs	Activity details	Deliverables
Test Rigs	Training of Engineers on Test Rigs	Report on Readiness of Test Rigs for Valve Tests
	Design Support for Data Acquisition System (DAS) & Virtual Instrumentation (VI) Systems	

WORK PACKAGE - 6

Valve/Test Rigs	Activity details	Deliverables
Test rigs	Supervision of Testing of FSV	Test Report of FSV
	Supervision of Testing of PRSOV	Test Report of PRSOV
	Supervision of Testing of NRV	Test Report of NRV

General terms & conditions:

Company expert will attend Preliminary design Review (PDR), Task Force meetings, Monitoring Committee meetings, Critical Design Review (CDR) and other important technical meetings at NAL, Bangalore and/or CMERI, Durgapur

ANNEXURE-II

Bar-Char of Work Packages:

Sl. No.	Activities	MONTHS																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
1	WORK PACKAGE - 1	█																				
2	WORK PACKAGE - 2	█																				
3	WORK PACKAGE - 3				█																	
4	WORK PACKAGE - 4					█																
5	WORK PACKAGE - 5										█											
6	WORK PACKAGE - 6															█						

CHAPTER - V
PRICE SCHEDULE

CHAPTER - VI

Bid Security Form

(As per our Tender Document)

CHAPTER – VII
Standard Forms

BID SECURITY FORM

Whereas1 (hereinafter called “the Bidder”) has submitted its bid dated (Date of submission of bid) for the supply of (Name and/or description of the goods) (Hereinafter called “the Bid”).

KNOW ALL PEOPLE by these presents that WE (Name of bank) of (Name of country), having our registered office at (Address of bank) (Hereinafter called “the Bank”), are bound unto (Name of Purchaser) (Hereinafter called “the Purchaser”) in the sum of _____ for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this ____ day of _____ 19 ____.

THE CONDITIONS of this obligation are:

1. If the Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form;
or
2. If the Bidder, having been notified of the acceptance of its bid by the Purchaser during the period of bid validity:
 - (a) Fails or refuses to execute the Contract Form if required; or
 - (b) Fails or refuses to furnish the performance security, in accordance with the Instruction to Bidders.

We undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including forty-five (45) days after the period of the bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

.....
(Signature of the Bank)

1 Name of Bidder