

Ref No: CL20170187

08<sup>th</sup> March 2018

**TENDER DOCUMENT  
FOR  
ANNUAL MANNING, OPERATION &  
MAINTENANCE CONTRACT  
OF  
PUMP HOUSE**



**INTERNATIONAL ADVANCED RESEARCH CENTRE FOR POWDER  
METALLURGY AND NEW MATERIALS (ARCI)**

**Balapur PO, R.R. District, Hyderabad – 500 005, India**

Tel: 040-24452376, 24452331, 24452476, Fax: 040- 24442699

Web site: [www.arci.res.in](http://www.arci.res.in)

**INTERNATIONAL ADVANCED RESEARCH CENTRE FOR  
POWDER METALLURGY AND NEW MATERIALS (ARCI)  
Balapur PO, Hyderabad – 500 005, India  
TENDER FOR MANNING, OPERATION & MAINTENANCE OF PUMP HOUSE - AMC**

M/s ARCI, an autonomous R&D Society of Department of Science and Technology, Govt. of India invites sealed tenders in two bid system from eligible/reputed companies for following work :

**Name of Work:** Annual contract for Manning, operation and maintenance of Pump House at ARCI, Hyderabad

**Estimated Cost:** Rs.21,60,000/-

**EMD:** Rs.55000/- (Fifty five thousand only)

***Eligibility Criteria:***

Contractors who have successfully completed similar works for a prominent Govt./Semi Govt./Corporate Bodies or Public Sector Undertaking during last Three years ending 31<sup>st</sup> March, 2018 as detailed below shall only be considered (i.e. attach documentary proof)

**Similar Works Means:** Experience in operation, manning and maintenance of Pump House and supply of drinking water for all buildings and industrial water supply to the equipments, and firefighting pipe lines.

1. The contractor should have executed similar nature of AMC works for last three years with minimum value as mentioned below
  - One similar nature of work costing not less than **Rs.17.28 Lakhs**
  - or**
  - Two similar nature of works costing not less than **Rs.10.80 Lakhs**
  - or**
  - Three similar nature of work costing not less than **Rs.8.64 Lakhs**

**Note: Above clauses should be satisfied to qualify technically.**

The eligible Companies/contractor conforming to eligibility criteria laid down in the tender document may submit the same in sealed envelope to the Director, ARCI, Balapur PO, Hyderabad - 500 005 Latest by **30<sup>th</sup> March 2018 up to 15.00 Hrs.** Super scribing the envelope enclosing all requisite documents, with name of work and drop the envelop in the tender box kept at ARCI security. ARCI reserves the right to reject any or all tenders and to call off the process of finalizing of contractors, at any stage without assigning any reasons.

## TENDER NOTICE

Ref No:- CL20170187

Date: 08<sup>th</sup> March 2018

Director, ARCI invites sealed tenders in two bid system (Technical and Price Bid) from contractors registered with State and Central Government Agencies/Departments or Corporate House or MNC's for execution of the following works.

S.NO.	Tender Ref. No	Description of work	Tender Value (approx)	EMD
1.	CL20170187	Annual manning, operation & maintenance contract of Pump House at ARCI, Hyderabad.	Rs.21.60Lakhs	Rs.55000/-

Tender document should be downloaded from ARCI website: [www.arci.res.in](http://www.arci.res.in) Tenderers should enclose DD for Rs.1500/- towards the tender document fee. Tenders not accompanied tender document fee will be rejected. Last date for submission of tenders is 30<sup>th</sup> **March 2018, up to 15.00Hrs.**

**Director, ARCI**

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# **GENERAL INSTRUCTIONS**

## NOTICE FOR INVITATION OF TENDERS

Sealed tenders for manning and operation on rate basis are invited by International Advanced Research Centre for Powder Metallurgy and New Materials, (ARCI) - ARCI, an autonomous R&D Society of Department of Science and Technology, Govt. of India for Annual Manning, Operation & Maintenance Contract of Pump House at ARCI, Hyderabad.

- \* Tender to be addressed & Deposited at : The Director  
: **ARCI**  
RCI Road, Opp .Balapur village  
Hyderabad– 500005.  
Phone no-040-24452376, 24452476  
Fax no-040-24442699

Tenders are to be deposited in a sealed envelope at security gate marked as **TENDER FOR ANNUAL CONTRACT FOR MANNING, OPERATION AND MAINTENANCE OF PUMP HOUSE at ARCI, Hyderabad.**

- \* Earnest Money Deposit (EMD): **Rs.55,000/-** (Fifty five thousands only) in the form of a bankers cheque or demand draft in favour of The Director ARCI payable at Hyderabad from any nationalized bank.
- \* AMC / Contract Period : 01/06/2018 to 31/05/2019  
:
- \* Last Date and Time for receipt of Tenders : **30<sup>th</sup> March 2018 up to 15.00Hrs.**

The Director, ARCI is not be bound to accept the lowest tender and reserves the right to accept or reject any or all Tenders without assigning any reason whatsoever.

The blank tender documents with eligibility criteria terms and conditions are to be downloaded from ARCI website: [www.arci.res.in](http://www.arci.res.in). Contractor who downloaded the tender document are required to submit a DD of **Rs.1500/-** drawn in favour of The Director ARCI Hyderabad along with the technical bid, towards tender document cost. Tender without DD of **Rs.1500/-** will be outright rejected.

# **INSTRUCTIONS TO TENDERERS**

## **A: GENERAL INSTRUCTIONS**

### **1. Scope of Tender**

International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) invites Tenders for Manning, operation and maintenance of Pump House at ARCI, Hyderabad.

### **2. Non Association / Relation:**

Should a contractor or a tenderer have a relative, employed in ARCI or in case of partnership firm or company incorporated under the Indian company act, should a partner or relative of the partner or a share holder be employed in a responsible capacity in ARCI, the authority inviting the tender should be informed of the fact at the time of submission of tender, failing which the tender may be rejected. If such fact is suppressed at the time of tendering and comes to light at any time after acceptance of tender, the contract may be rescinded.

### **3. Eligibility Criteria:**

1. Contractors who have successfully completed similar works for a prominent Govt./Semi Govt./Corporate Bodies or Public Sector Undertaking during last Three years ending 31<sup>st</sup> March, 2018 as detailed below shall be considered (i.e. attach documentary proof)

**Similar Works Means:** Experience in operation, manning and maintenance of Pump House and supply of drinking water for all buildings and industrial water supply to the equipments, and fire fighting pipe lines.

- The contractor should have executed similar nature of AMC works for last three years with minimum value as mentioned below
  - One similar nature of work costing not less than **Rs.17.28 Lakhs**
  - or**
  - Two similar nature of works costing not less than **Rs.10.80 Lakhs**
  - or**
  - Three similar nature of work costing not less than **Rs.8.64 Lakhs**
2. Contractor should have been maintained an average annual turnover of Rs.6lakhs during the last three financial years ending with March 2018.

**Note: - Above clauses should be satisfied to qualify technically.**

### **4. Qualification of the tender**

- 4.1 All tenderers shall provide forms duly filled and signed.
- 4.2 All Tenderers shall include the following information by producing relevant documents and certificate with their Tenders:
- 4.3 The tenderer must be registered for service tax & with other statutory Departments of Govt of Telangana State / India and should submit the registration certificates of GST, ESI, PF, labour license etc.

4.4 The Tenderer should submit the IT PAN certificate.

4.5 Others:

- a) Total tender document enclosed each page duly signed by the tenderer as token of acceptance. If any deviation is proposed by the tenderer the same must be clearly indicated and enclosed as deviation list but tenders with significant deviations list and merely enclosing tenderer's printed conditions or their own terms and conditions will make the tender liable for rejection.
- b) Copy of the tenderer's price schedule but without prices.
- c) Earnest money deposit as laid down in these instructions to tenderers.
- d) Constitution of the tendering firm
- e) List of last three years executed pump house similar AMC works for Government / corporate companies along with Xerox copies of work orders / purchase orders.
- f) Statement showing the turn over during the past three years supported by balance sheets or income tax returns
- g) Current original solvency certificate from any nationalized bank
- h) Copies of GST, Service tax registration certificates and PAN card.
- i) Other State/Central Government agencies registration certificate
- j) Firm registration certificate (In case of Firm)
- k) Latest profile of the contractor.
- l) List of qualified engineers employed by the contractor.
- m) The contractor should have statutory government licenses for operating of pump house.
- n) List of similar nature of AMC electrical works under taken by the tender presently.

## 5. Cost of Tendering

The Tenderer shall bear all costs associated with the preparation and submission of his Tender, and the Owner will in no case be responsible and liable for those costs. The Tenderer, at the Tenderer's own responsibility and risk is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Tender and entering into a contract for AMC works at ARCI, Hyderabad. The costs of visiting the Site shall be at the Tenderer's own expense.

## 6. PREPARATION & SUBMISSION OF DOCUMENT

### 6.1. Earnest Money Deposit (EMD)

EMD amounting to **Rs. 55,000/-** (Fifty five thousands only) in the form of a bankers cheque or demand draft in favour ARCI payable at Hyderabad must accompany each Tender. **Tenders not accompanying with EMD and unconditional acceptance letter will be summarily rejected.**

The EMD of the unsuccessful Tenderers will be discharged / returned within Six (6) weeks from the last date of tender submission. The EMD of the successful Tenderer shall be converted as Security deposit.



The EMD may be forfeited: If the Tenderer withdraws his Tender during the validity period of the Tender or in case of a successful Tenderer, if the Tenderer fails to sign the contract or furnish performance security.

#### **6.2. Period of validity of Tender**

The Tender shall remain valid for a period of 90 days after the last date of the submission of Tender. A Tender valid for a shorter period, may be rejected by the Owner as non-responsive and the EMD paid along with it will be forfeited.

The rates quoted by the Contractor will hold good for the entire period of work and no compensation / escalation will be paid in any circumstances on this account.

#### **6.3. Language of Tender**

The document shall be written in english language. The total amount should be written in the same language.

#### **6.4. Document comprising the Tender**

No page of this Tender document shall be removed and the set must be submitted as it is. Each page of the Tender document form is to be signed by the Contractor and must bear the Seal of the Company/Firm.

7. The Tender submitted by the Tenderer shall comprise the following:

#### **Envelope-1; Technical Bid :Part-I**

- a. Total tender document enclosed each page duly signed by the tenderer as token of acceptance. If any deviation is proposed by the tenderer the same must be clearly indicated and enclosed as deviation list, but tenders with significant deviations list and merely enclosing tenderer's printed conditions or their own terms and conditions will make the tender liable for rejection.
- b. Copy of the tenderer's price schedule but without prices.
- c. Earnest money deposit as laid down in this instructions to tenderers.
- d. Constitution of the tendering firm
- e. List of eligibility criteria documents last three years executed similar AMC works for government & cooperate firms along with Xerox copies of work orders /purchase orders
- f. Statement showing the turn over during the past three years supported by balance sheets or income tax returns.
- g. Current original solvency certificate from any nationalized bank for minimum 10 Lakhs.
- h. Copies of GST, Service tax registration certificates and PAN card.
- i. Other State/Central Government agencies registration certificate.
- j. Firm registration certificate (In case of Firm).
- k. Latest profile of the contractor.
- l. List of qualified engineers employed by the contractor.
- m. The contractor should have statutory government licenses

ARCI is not responsible for the loss of documents or for the delay transit

All the above documents forming PART – I of the tender shall be kept in one envelope which shall be SEALED and super-scribed with as technical bid PART – I, Technical bid -Name of work &Due date

**Envelope-2; Price Bid :Part-II**

Part two of the tender shall contain only the price schedule with prices (both in words and in figures) strictly in accordance with the price schedule format of the tender document. Departure from the price schedule format may render the tender liable for rejection. Price schedule format in PART I & PART II must be identical except that PART – I should not contain any price figures.

This price schedule forming the PART II of the tender shall be kept in another envelope which shall also be SEALED and super-scribed with as PART – II, Price bid-Name of work &Due date.

**The above two sealed covers, (one containing the part-I, of the tender and the other containing the part-II of the tender) are to be placed in a single envelope. The envelope duly sealed & super-scribed with the name of work Ref No: CL 20170187 should be addressed to**

**The Director  
International Advanced Research Centre for Powder Metallurgy and New  
Materials (ARCI),  
Balapur PO, RR District  
Hyderabad – 500 005**

**Note: - *Based on the technical bid qualification the commercial bid will be opened.***

# **ANNEXURE – I**

## **GENERAL & SPECIAL CONDITIONS OF CONTRACT**

**A. GENERAL CONDITIONS OF CONTRACT**

1. Prices quoted should be valid for the contract period from the date of opening of your offer.
2. The prices quoted should be for the entire scope of work.
3. The rates quoted shall be inclusive of all statutory payments like PF, ESI, workmen's compensation policy, accidental insurance and any other statutory requirements from time to time as per Govt of India / Govt of Telangana labour acts etc for all employees employed by the contractor.
4. Payment shall be made through monthly running bills and on pro-rata basis.

**5. Transport**

- 5.1 The transport required within the complex for carrying items inside the ARCI complex for repairing work etc. shall be arranged by the contractor. The contractor may however seek the help of department to take permission to take heavy items for repair outside the ARCI complex if considered necessary. However for transportation of heavy items for outstation repair is in the scope of ARC-I.
- 5.2 Contractor's materials, transport, etc. shall normally be permitted to go out of the area between 9 AM to 5 PM only. Contractor may also be allowed to carry out the work beyond 5 PM and up to 9 AM (day and night) with special permission from the Director ARCI. However, no movement of materials and transport out of site of works shall be permitted during night or during holidays unless special permission obtained from the Director, ARCI.

**6. Antecedents**

The contractor shall employ only Indian Nationals as his representatives, servants, work men and verify their antecedents and loyalty before employing them on the works. He shall ensure that no person of notorious antecedents and nationality is in anyway associated with the works and if for reasons of technical collaboration or other consideration, the employment of any foreign national is unavoidable, the contractor shall furnish full particulars to this effect to the accepting officer at the time of submission of tender. The Director, ARCI shall have full powers and without giving any reasons to the contractor immediately cease to employ in connection with this contract, any representative agency, servant and workman or employee whose continuous employment in his opinion is undesirable. The contractor shall not be allowed any compensation on this account.

7. The term of agreement / purchase order / work order shall be initially for a period of one year. On expiry of the term the contract may be renewed on mutual consultation by both the parties on the terms and conditions mutually agreed to.
8. The waste paper shall not be transported outside the ARCI site but burnt out in the incinerators, provided within the premises.
9. The contractor shall maintain the installations clean and tidy inside as well as around the installations and buildings. No rags and waste etc. shall be thrown near the building. This shall be deposited in the dustbins provided nearby. If pump house and other areas mention in the scope is found untidy a lump sum amount agreed by both the parties will be deducted from the contractor's bill. The amount quoted by the contractor shall provide manpower for such purpose at his own cost.

**10. Security Pass**

Immediately after acceptance of the contract, the contractor shall submit the list showing the names of the individuals, he wishes to employ in the work, with their particulars to the department for getting the police verification and arranging the temporary pass for them up to security gate only and subsequently to inside the technical area, the contractor shall provide security to the operator/helpers.

11. The scope of the work of this contract shall be as per **ANNEXURE-II**
12. The contractor shall demand the stores in writing to the department for arranging such items for issue and also keep record/account of all materials drawn from the Director, ARCI and produce for verification as and when demanded. Unserviceable items shall be returned to the ARCI.

**13. Tools and Tackles:**

- 13.1 All tools and tackles required for the work including testing equipment's shall be arranged by contractor. **Annexure - III**
- 13.2 The tenderer shall be fully responsible for arranging the supply of required tools and tackles.
- 13.3 However any damages were observed a lump sum amount will be deducted from the security deposit/performance guarantee.

**14. Maintenance of records:**

- 14.1 The contractor shall maintain all records such as log book, schedule of maintenance activity, complaint register, attendance register, test records for various tests conducted, material requisition book, gate pass and other

statutory registers for manpower employed etc. such records are to be maintained as per the formats supplied by the owner. Records of major breakdown occurred during the period shall be maintained showing the cause of the defect and location and type of repairs carried out.

#### **14.2 Following documents / records to be maintained at site**

1. Daily Logbook
2. Complaint slips book
3. Water meter reading register
4. Material Register
5. No feedback Permit record
6. Power failure / tripping record
7. Equipment history cards
8. Water meter calibration record
9. Any other documents, records, which shall be required to be maintained to adhere to the ARCI systems etc.
10. Upkeep of present SLD's and schematic drawings of equipment's based on the modifications.
11. Water testing reports from Govt lab payment for testing will be made by ARCI.
12. Water level records of various sumps & OHT

Please note that the formats of various reports / documents will be finalized after joint discussions with ARCI Engineers. However, the formats may get changed to incorporate the improvements during the period of the contract.

- 14.3 The cost of stationary required for maintenance of the above record are under the scope of ARCI
15. The contractor shall employ the required number of personnel depending upon the requirement of ARCI on "as required basis" including technical and non-technical personnel. The contractor shall, during the progress of the works, employ a whole time qualified, experienced and competent representative at the site for executing the work. For specialized work involving such as, motor / pump winding, alignment of pump & motor higher size pipe line (dia 100, 150, 200 mm and above) leakage, Mechanized cleaning and disinfection services of building storage tanks, OHT and sump as per rate quoted **or** ARCI will pay extra cost.
16. The work shall be governed by ARCI's general conditions and security regulations of the contract.
17. The number and names of the contractor's personnel along with two photographs to be engaged shall be indicated/submitted in advance to meet the security regulations, etc.

18. The tenderer should sign in each page of tender document all the terms and conditions of the contract as a mark of his acceptance of contract. The signed tender copy has to be submitted to ARCI
19. The submission of tender by a tenderer implies that he has read this notice and the conditions of contract and has made himself aware of the scope and specifications of the work to be done and of the conditions and rates at which stores, tools and plant etc. will be issued to him and local conditions and other factors bearing on the execution of the work.
20. No foreign exchange and import license for import of technical know-how or equipment, components, spares or materials will be arranged or provided by the ARCI. In case the offered equipment involves any foreign exchange, this shall be clearly indicated together with a statement as to how this is being arranged by the tenderer.
21. The tenderer shall indicate the source of supply, the detailed specifications, furnish test certificates, such as guarantee/warranty etc. for all electrical bought out items.
22. The Director, ARCI or any one or more officers authorized by him shall have the right to visit contractor's/sub contractor's premises to check the physical progress of work, inspection, testing etc. of the contract items or any part thereof at any time during all stages of operation & maintenance. The contractor shall extend all necessary facilities for carrying out such inspection and check of progress of work.
23. **Deviations:** Any exclusion, deviation from specification shall be clearly spelt out and listed at one place only and tenderer shall substantiate the same with appropriate reasons. In absence of the same, it will be considered that tenderer has followed the specification fully in words and spirit.
24. **Faults, Repairs and Replacement:**
  - 24.1 In case faults occur of such nature causing delay and becoming detrimental to the maintenance of services or any spare part of equipment not available with the Director, ARCI in stock, contractor would be ordered in writing by Director, ARCI for procurement of the same from the market for rectification/completion of the job. The payment will be regularized in the following RA bills.
  - 24.2 In case of faults/repairs/damages, the Contractor should immediately submit a detailed fault analysis report, the details of repair/rectification schedule with details of probable completion. A format has to be submitted by the tenderer for repair/rectification schedule along with the tender which will be approved by the Director, ARCI.

- 24.3 On completion of replacement of spares but before energisation / operation of the system, the replacement shall be physically checked and properly tested. These checks and tests shall be conducted by the tenderer under the supervision of ARCI and tenderer shall furnish the final status and test result. Any defect observed during such check and tests shall be made good by the tenderer free of cost within the Contract completion period.

## **25. Specifications and Standards**

The operation and maintenance shall be in conformity with relevant Indian Standard specification. In the event of any conflict between the provisions/clause for a particular item in the above mentioned rules and specifications the most suited clause based on requirement shall be applicable.

26. Any work that the tenderer would normally off load to his sub-vendor or sub-contractor with the permission of ARCI, it is to be noted that the Director, ARC-I shall not have any obligations whatsoever towards the tenderer's sub-contractor / sub-vendor. Only the tenderer is responsible to the Director, ARCI and ARCI does not accept any liability for the sub-contractor or his work men.
27. It must be understood that the number of people indicated here would in any way bind the tenderer for any contractual obligations or delay in schedule of work etc. This information would be used only for tenderer evaluation and later on to assess tenderer's progress with regard to adequacy of manpower.
28. Any other information the tenderer feels necessary to understand the quotation in complete.
29. It is the responsibility of the successful tenderer to handover the entire system to the Director, ARCI on completion of the contract period subject to normal wear and tear. Any damages/replacement etc. should be done at free of cost with the knowledge of the Director, ARCI. The final taking over will be done after detailed joint inspection by the Director, ARCI / or his authorized representative and the contractor on completion of the contract period.
30. The contractor shall not be entitled to any additional payment during the tenure of the contract due to increase in cost of manpower and the rates should be quoted accordingly.
31. **Resolution of Disputes & Arbitration**

This Contract shall be governed by, and construed in accordance with the laws of India. Any dispute which cannot be amicably settled by the parties may be submitted, by one of the parties, to the International Centre for Alternate Dispute Resolution (ICADR), Hyderabad. The dispute will be



settled following the provisions of Arbitration and Conciliation Act, 2015. Both Parties agree that the results and awards of any such arbitration shall be final and binding on both Parties. Venue of Arbitration shall be Hyderabad.

32. The lump sum price offered by the contractor shall include the charges for any minor jobs mutually discussed and agreed upon of maintenance which are obviously fairly intended and which may not have been referred to in these documents but are essential for this work. In case of difference of opinion as to whether or not a certain item of work constitute minor details of maintenance or not included in contractors prices, the decision of Director, ARCI shall be final and binding.

33. If the contractor has to go in for subcontracting, he has to take prior written approval from the Director, ARCI for the same. But the prime contractor is held responsible for all the works. The Director, ARCI will in no way have contacts with the sub contractor so appointed by the prime contractor.

**34. Risk Purchases:**

The cost of repairs/rectification's necessitated due to negligence of contractors employee shall be recovered from the contractor as per assessment made by the Director, ARCI. If the contractor fails to repair/rectify the defects in installations within the time given to him, the same will be got repaired/rectified from other agency at the risk and cost of the Contractor. The decision of Director, ARCI shall be final and binding on both the parties.

35. If the attendance falls short of the contracted minimum number of persons the pro-rata amount shall be deducted from his bill. Similarly, if the work is found unsatisfactory and not up to the expected standards, an amount which the Director, ARCI determines, shall be deducted from the Contractor's bill. The amount so deducted shall be final.

**36. Amendment of Tendering Documents**

36.1 Before the deadline for submission of Tenders, the Owner may modify the Tender documents by issuing addenda.

36.2 Any addendum thus issued shall be part of the Tender documents and shall be communicated in writing or by Fax to all the eligible contractors. The eligible contractors shall acknowledge receipt of each addendum by Fax to the Owner.

36.3 To give prospective Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Owner may extend if necessary the deadline for submission of Tenders.

### 37. ELIGIBILITY CRITERIA AND INFORMATION CHECKLIST TO ACOMPANY THE TENDER

Sl. No.	Document to be Submitted	Description to be given	Scanned documents/ photocopy to be Submitted	Column 5
(1)	(2)	(3)	(4)	(5)
1.a)	Contractors registration under appropriate class with Govt./PSU / MNC.	Registration	Yes / No	
b)	Partnership deed in case of firms & Article of Association in case of companies			
2.	Copy of Permanent Account Number (PAN) card and copy of latest Income Tax returns submitted along with proof of receipt.	PAN & IT Returns	Yes / No	
3.	Work completion certificates In support of annual turnover in AMC works (Format at Statement-I)	Annual turnover	Yes / No	
4.	Work completion certificates in support of satisfactory completion of similar works along with purchase / work order (Format at Statement- II)	Similar work	Yes / No	
5.	Statement of existing commitments and ongoing Govt. PSU / MNC works along with supporting experience certificates as in statement III	Existing Commitments	Yes / No	
6.	Availability of equipment as in Statement –IV	Equipment	Yes / No	
7.	Availability of key personnel as in Statement V	Key personnel	Yes / No	
8.	Information of litigation history as in Statement VI	Litigation history	Yes / No	
9.	Credit facilities / solvency certificates from banks	Credit facilities	Yes/No	
10.	E.M.D	EMD	Yes / No	
11.	GST Registration with number	GST Registration	Yes / No	
12.	Cost of Tender document Rs.1500/-	Yes / No	Yes / No	

<b>Sl.No.</b>	<b>Document to be Submitted</b>	<b>Description to be given</b>	<b>Scanned documents/ photocopy to be Submitted</b>	<b>Column 5</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>
13.	Declaration of testing equipment as in the statement – VII	Testing equipment	Yes / No	
14.	Annual turnover from AMC works only duly certified by a Chartered Accountant supported by profit and loss statement & TDS certificates for last Three Years		Yes / No	
15.	A Grade License details as in the statement – VIII	Registration Code and validity date	Yes / No	

All experience certificates including those in support of existing commitments issued by an Officer not below the rank of Executive Engineer (or) Equivalent grade.

All the statements copies of the certificates, documents etc., enclosed to the Technical bid shall be given page numbers on the right corner of each certificate, which shall be indicated in column (5) against each item.

### STATEMENT – I

Details of value of AMC works (Turnover) executed in each year during the last three financial years by the Tenderer.

Sl. No.	Financial Year	Value in Rs.
1.	2015-2016	
2.	2016-2017	
3.	2017-2018	

Attach certificate(s) issued by the Executive Engineer or concerned head of the department showing work wise / year wise value of work done in respect of all the works executed by the Tenderer during last three years

**Signature of the Contractor**

### STATEMENT – II

Details of similar AMC works completed in the name of the Tenderer during the last three financial years.

Sl. No.	Name of the work	Address of Agt. Concluding Authority	Agreement No. & dated. With telephone number	Value of Contract	Stipulated period of completion	Actual date of completion
1	2	3	4	5	6	7

Value of work done year wise during the last 'three' years.					Total value of work done
1st Year	2nd Year	3rd Year			
8	9	10			11

Attach certificates issued by the Executive Engineer or concerned head of the department showing work wise / year wise value of work done and date of completion.

**Signature of the Contractor**

### STATEMENT – III

#### Details of Existing Commitments

Details of works on hand and, yet to be completed as on the date of submission of the Tender and works for which Tenders have been submitted are to be furnished.

S.No.	Name of work	Address of Agt. concluding authority	Agt No. & Date	Value of Contract	Stipulated period of completion	Value of work done so far	Balance value of works to be completed	Anticipated date of completion	Updated value of balanced work
1	2	3	4	5	6	7	8	9	10

Attach certificates issued by the Executive Engineer or concerned head of the department indicating the balance work to be done, and likely period of completion.

**Signature of the Contractor**

### STATEMENT – IV

#### Availability of Equipment for Testing & Commissioning

The tenderer should furnish the information required below, regarding the availability of the equipment, required for execution & commissioning.

Sl.No.	Details	Number	Number		
			Owned	Leased	To be procured
1	2	3	4	5	6

**Signature of the Contractor**

### STATEMENT – V

#### Availability of Key Personnel

Qualification and experience of Key Personnel proposed to be deployed for execution of the Contract					
Sl. No.	Name	Designation	Qualification	Total Experience	Working with the Tenderer since
1	2	3	4	5	6

**Signature of the Contractor**

## STATEMENT – VI

### Information on litigation history in which Tenderer is the Petitioner

Sl. No.	Case No. / No.	Year	Court where filed	Subject matter/prayer in the case	Details of respondents	Present Stage
1	2	3	4	5	6	7

**Signature of the Contractor**

A declaration regarding the testing equipment's owned shall be produced by the Tenderer as below;

## STATEMENT – VII

### DECLARATION

"I, \_\_\_\_\_ do hereby solemnly affirm and declare that I /we own the following testing equipment for using on the subject work and also declare that I / We will abide by any action such as disqualification or determination of Contract or blacklisting or any action deemed fit, if the department detects at any stage that I/we do not possess the testing equipment listed below.

Sl. No	Details	No.	Year of Purchase	Capacity	Any other data	Is it in working condition?
1	2	3	4	5	6	7

**Signature of the Contractor**

## STATEMENT – VIII

### DECLARATION

#### A Grade (Supervisory) License details:

Sl.No	Details (Category)	Year of Issue	Valid up to	Remarks

**Signature of the Contractor**

**B. SPECIAL CONDITIONS OF CONTRACT**

**1. Statutory Obligations**

- 1.1 The contractor shall obtain a valid license under the contract labour (R&A) Act, 1970 and rules framed there under before the commencement of the work and continue to hold it till the completion of the contract.
- 1.2 The contractor shall maintain following statutory registers as per the Contract Labour (Regulation and Abolition) Act 1970 and rules.
  - a) Register of workmen.
  - b) Employment cards of workmen's.
  - c) Master Roll Register.
  - d) Register of Wages.
  - e) Any other documents as required under laws of the country.
- 1.3 The contractor shall comply with the provisions of the payment of Wages Act, 1936, Minimum Wages Act 1948, Employment Liability Act 1938, Workmen's compensation Act 1923, Industrial Disputes Act 1947, Maternity Benefits 1961 and Contract Labour (Regulation and Abolition) Act, 1970 or the modifications thereof and other laws relating thereto and the rules made there under from time to time.
- 1.4 The contractor when required to employ more than twenty workmen on the works under this contract, shall be bound by the contract labour (Regulation and Abolition) Act 1970 and rules framed there under. No Contractor can undertake or execute his work without a license issued by a licensing officer.
- 1.5 The Contractor shall submit the workmen's compensation policy in respect of all the workers deployed by him for ARCI work at the time of taking over of the contract and shall keep the same extended for the entire period of contract and also enclose the same for release of I<sup>st</sup> RA bill
- 1.6 Notice showing rate of wages, hours of work etc. shall be submitted to the office of labour enforcement officer and the same be displayed on the notice board in the establishment/laboratory.
- 1.7 The tenderer shall at all time comply with such rules and regulations as stipulated in relevant Factory Acts, Latest Indian Electricity Rules, Telangana State Electricity Rules, Indian Petroleum Acts, Indian Explosives Act, Fire Adviser, etc. the tenderer shall obtain the necessary clearance for operation and maintenance of the plant and equipment from the above statutory bodies wherever applicable.

1.8 ARCI shall pay the amount of monthly bill by cheque in contractor's name and not to his personnel. As such the contractor shall own the full responsibility for regular payment of wages to his personnel. The disbursement of wages by the contractor shall be made inside the campus in the presence of representative of the Director, ARCI.

## **2. Validity**

2.1 The initial period of the contract will be for 12 (TWELVE) months from the date of handing over of Site(s), which may be extended on further mutual discussions on either side.

2.2 The agreement shall be liable for termination on giving THREE MONTHS notice by either side. During the period of notice, both the parties shall continue to discharge their duties and obligations. In case of termination for convenience by Purchaser, Contractor shall be paid proportionate contract price for supply and services rendered and work/service in progress till the effective date of termination.

## **3. Security Checks**

3.1 All personnel and their bag and baggage connected with the contract shall be liable to physical check both at the time of entry into the campus and passing out at Security Gate. Thorough search of all transport shall be carried out as many times as the gate is used for entry/exit in / out of the restricted area, as per Security Rules of the ARCI.

3.2 The contractor or his agent(s)/representatives, workmen etc. and their materials, cars, trucks or other means of transport etc., will be allowed to enter through and leave from only from such gate and at such times as the Director, ARCI or authorities incharge of the restricted areas may at their sole discretion permit to be used. The Contractor's authorized representative is required to be present at the place of entry and exit for the purpose of identifying his cars, trucks etc, to the personnel in-charge of the security of restricted area.

3.3 The contractor's personnel shall be in a neat uniform for which cost will be borne by the contractor. The contractor has to provide the identity cards to each of them workers engaged by him and they should always display the same while on duty in the premises of ARCI.

## **4. Inspection**

4.1 Inspection will be carried out by owner as and when required. The log book for all the plants shall be submitted to department before submission of RA bill of every month for check and certification by the department.



- 4.2 In support of employment of staff, the attendance registers will be maintained at site of work. This is to ensure that the minimum number of personnel are employed as mutually agreed upon between the Director, ARCI and the contractor before award of contract.
- 4.3 The attendance register shall be initiated by the Engineer in-charge / or his authorized ARCI staff every day and the Director, ARCI shall carryout surprise checks on the attendance to ensure the deployment of minimum number of staff as specified.
- 4.4 In case of any shortage found during the inspection, recovery shall be made from the payment due to the contractor for the affected category at double the rates prevailing or decided by the Director, ARCI. In case of absence of any manpower the recovery proportionate to the quoted amount shall be made from the bill.

**5. Recruitment, conduct and loss (if any) of the contractor's personnel:**

- 5.1 The contractor shall provide necessary competent and experienced personnel to assist contractors representatives at site for supervising during the execution of the works and as long thereafter as the owner may consider necessary.
- 5.2 The contractor's employees shall be well qualified and well experienced in the trade for which employed. And they should be loyal and obedient to their employer. The contractor shall produce the certificate of qualification and experience in respect of his workmen, to the Director, ARCI at the time of starting of the contract. The Director, ARCI may reject any person employed by the contractor and shall advice the contractor to cease to employ such person forthwith. The decision of the Director, ARCI is final regarding removal or employment of a person, employee, workman or agency working under this contract, but the same shall be enforced only after mutual discussion and ARCI acceptance. Hence the contractor shall have regulations with his employees, workmen and agencies accordingly to implement the decision of the Director, ARCI. The Director, ARCI is not bound to give reasons for the decisions taken by him. No extra payment shall be paid to the contractor, on this account.
- 5.3 Any theft or damage caused by the contractor's personnel shall be made good by the contractor. Any damage done to the existing installation during the execution of work shall be made good by the contractor at his own cost and the site of work left clean and tidy on completion. Rectification/reinstallation/making good, etc, shall conform to the standard materials original used in the work and finished work shall match with existing work in all respects to the entire satisfaction of the Director, ARCI. In case of any dispute on this account, the matter shall be referred to the Director, ARCI whose decision in writing shall be final.

- 5.4 The contractor shall be wholly responsible for the conduct of his workmen, agents and representative.
- 5.5 The contractor will not allow or permit the employees to participate in any trade union activities or agitation in the premises of the ARCI.
- 5.6 It is the responsibility of the contractor to bring to the notice of his employees that they have no right whatsoever to claim employment in ARCI by virtue of their employment under the contract.

**5.7 Accident or injury to workman:**

- 5.7.1 The Director, ARCI shall not be responsible for any injury or loss of any workers of the contractor / sub contractor / vendor that may take place while on executing work defined under our scope of work as per this contract. Any compensation or expenditure towards treatment for such injury or loss of life shall be the sole responsibility of the contractor. The contractor is solely responsible for any damage injury or accident that may occur to any of his personnel working under this contract. He will not claim any compensation from the Director, ARCI.

**6. Payment Terms:**

- 6.1 Income tax will be recoverable from the Contractors monthly bill as per rules.
- 6.2 Payment shall be made on monthly basis through R.A. Bills submitted by the Contractor.
- 6.3 The Contractor shall furnish the following documents along with the monthly Bills.
  - a) Copy of Attendance Sheet for each month duly signed by the Contractor and certified by Director, ARCI's representative.
  - b) Copy of wages / muster register paid for the month to the workers duly signed by the representative of ARCI.
  - c) A declaration that he has discharged all his obligations as Principal Employer, under various Labour Acts and submit the work men compensation insurance policy along with 1<sup>st</sup> RA bill.
  - d) Performance Certificate from the Director, ARCI's representative that the works for that month has been completed.
  - e) The contractor shall submit following month's duty roaster

- f) Actual duty roaster for the preceding month shall be submitted with approval of ARCI's representative.
- g) Diary of events and major activities carried out during the preceding month along with relevant test and warranty/guaranty certificates.
- h) Spares available with the contractor and spares required for coming month operation/maintenance.
- i) Action points pending from ARC I side.
- j) Schedule of maintenance activity for current month and short fall of preceding month.
- k) Materials consumed in the preceding month.
- l) Copies of the PF challans paid in respect of workers deployed by him for the preceding month. A separate PF and ESI challan has to be deposited in respect of the workmen deployed at ARCI site indicating clearly on the challan also and submit the same along with the bill for the preceding month.
- m) For first RA bill: The contractor has to submit insurance policy to cover all employee of contractor i.e. CAR policy, Signing of agreement on Rs100/- bond paper, indemnity on Rs100/- bond paper and other all documents mentioned above for release of first RA bill.

6.4 The Director, ARCI shall deduct/recover such amounts towards penalty, if any, cost of items not returned to stores, etc. from the monthly bill.

6.5 TDS under IT Act, as applicable shall be deducted from the payment.

6.6 Mobilization advance (pro-rata)/such other recoveries shall be deducted from the monthly bill.

6.7 The net payment so arrived at shall be paid by crossed cheque payable to the Contractor.

6.8 The Director, ARCI reserves the right to adjust any excess/short payment, made in the earlier bills, at the time of making payment.

6.9 ARCI could not deliver the spares required, then with the permission of The Director ARC I the contractor has to procure the required materials and utilize the same. The actual cost of materials after submission of bills will be regularized in monthly bills of contractor along with extra 10% handling charges. To this effect, a minimum amount of Rs 50,000/- per month should be available with the contractor representative at site.

6.10 If during the contract period central / state taxes / duties are revised, the total contract value also revised to that effect. For change like addition, deletion, modification in the scope, during contract currency, revision in contract value and delivery schedule shall be mutually discussed and agreed upon before proceeding with works.

## **7. Performance Guarantee:**

7.1 The tenderer shall produce relevant documental evidence to the Director, ARCI that he possesses the necessary technical experience and qualification and that he has at his disposal suitable modern facilities and staff of specialized employees to ensure that his contract work is of best quality and workmanship, according to the latest engineering practices. The tenderer shall furnish necessary particulars in this behalf with tender.

7.2 The Contractor will guarantee for the workmanship, materials (if rate contract is entered into with the Director, ARCI) and satisfactory performance for a period of twelve months of reliable regular working of the plant, commencing from the date of the unit going into operation. The Contractor shall be liable to replace any part/equipment that may fail or show signs of defects arising from faulty materials for workmanship or erection or from any act of omission of the Contractor. All such replacements of defective parts/equipment mentioned above shall be made free of cost at ARCI by the Contractor.

7.3 On successful replacement of spare parts/items/equipment's will be thoroughly inspected by the Director, ARCI for correctness and completeness of replacement.

7.4 To achieve trouble free operations. The site in charge and the technicians should Possess a technical training course certificate from OEM on their pump sets.

8. Technical deliverables KPI ( KCC Performance Indicators)

8.1 Should ensure plant availability above 99%

8.2 Reliability of work man ship above 99%

8.3 MTBF (Mean Time Between Failures) for motor pump sets.

8.4 Safety – LTI (Loss Time Injury) and statutory - compliance to statutory & safety requirements 100%

8.5 Zero fatality

8.6 Adherence to PPE

8.7 Adherence of preventive maintenance schedule 100%

- 8.8 PF: Maintaining monthly power factor as  $> 0.99$  (lag)
- 8.9 Training (safety & Technical) – Adherence of training schedule to site team as 4hrs / man / month
- 8.10 Reports – Adherence to maintaining reports, hourly / daily / weekly / monthly / yearly
- 8.11 Attendance – Average of attendance percentage of all employees as per the tender documents schedule in a month should be above 95%.

## **9. EMD and Security Deposit**

- 9.1 EMD: - The contractor shall provide a DD/Banker's cheque to the extent of Rs.55,000 (Rupees fifty five thousand only) in favour of Director, ARCI from any nationalized bank towards EMD and shall be enclosed along with technical bid. If EMD is not enclosed the tender will be rejected. EMD will be returned to unsuccessful contractors and successful contractors EMD will be encashed and adjusted towards security deposit amount.
- 9.2 The contractor shall provide a Bank Guarantee to the extent of Rs.1.0 lakhs (Rupees One lakh only) towards security deposit from a Nationalized/Scheduled Bank towards standing security deposit favour of Director, ARCI payable at Hyderabad valid till the end of the contract. Director ARCI can encash the above amount if the contractor deviates any of the tender mentioned clauses during operation of the contract or the contractor fails to fulfill the contractual obligations as mentioned in the General terms & conditions and Special terms & conditions.
- 9.3 The security deposit will be returned after completion of 100% work and submission of no claim certificate from contractor.
- 10. Transportation of Men, Materials (AMC) etc. in and outside ARCI premises will be the responsibility of the Contractor. ARCI shall not render any transportation services.
- 11. It shall be the responsibility of the contractor to submit his demand in writing for any materials at least SEVEN DAYS in advance of his requirement.

## **12. Fire Precautions Electrical shock:**

- 12.1 The contractor, his agents, representatives, workmen etc. shall strictly observe the orders pertaining to fire, LT (ELECTRICAL) precautions prevailing within the restricted areas /electrical sub stations and etc.
- 12.2 Motor transport vehicles, if any allowed by authorities to enter the restricted area, must be fitted with serviceable fire extinguishers.
- 12.3 The contractor, his agents, representatives, workmen etc. shall be strictly adhering to the fire/electric shock precautionary measures while working

near the explosive areas/LT./ ELECT.SUB STATION areas. During such times the workmen should be headed by their Engineer-in charge as a precautionary measure.

13. The submission of tender by a tenderer implies that he has read this tender/notice and the conditions of contract and has made himself aware of the scope and specifications of the work to be done and of the conditions and rates at which stores, tools and plant etc.. will be issued to him and local conditions and other factors bearing on the execution of the work.

#### **14. Man Power Deployment & their Holidays and Rules & Regulations:**

- 14.1 The successful contractor has to make a duty roaster in consultation with ARCI staff and ensure workmen will get one holiday after every six working days at ARCI.
- 14.2 Contractor has to abide by latest contract labour act, of Govt. of India/Telangana State as 1976 contract labour act is applicable.
- 14.3 Contractor should consider (deemed to be included in his price) for every contract employee for every 20days of work, 1 paid leave is considered.
- 14.4 The contractor should ensure eligible leaves to be availed by the contract employee No compensation from ARCI.
- 14.5 Deduction will be made for short fall of minimum no of manpower deployment
- 14.6 The Contractor should deploy minimum 7nos per day including national Holidays of different categories.
- 14.7 The contractor should maintain minimum 8nos on their roles i.e. 1nos as leave reserve of different categories as mentioned in tender document.
- 14.8 ARCI will pay extra payment for deputation of man power as per ARCI's request (i.e. IIIrd shift – 22.00Hrs to 06.00Hr).
15. The Contractor shall provide all safety appliances to his personal at site like gloves, safety belt, gum boots, hard hats etc.
16. Any accident caused due to non – competence of safety rules, regulations and will entirely be the responsibility of the contractor.
17. Negligence/ malfunction of operator is noted which reflected in a monetary loss / material and etc. should be recovered from the contractor RA bills & encashment of security B.G will be taken by depending by the nature of fault and how depth the operated/ supervisor is neglect/is responsible/ careless.

The recoverable amount is decided by the Director, ARCI, which will be final and no correspondence, or communication will be entertained from the contractor.

18. ARCI will be supplying all the spares & consumables required for this AMC work.
19. Cotton waste, Grease, petroleum, jelly, acetone acid, WD-40, CTC, CRC log sheets as per ARCI FORMAT, stationery, cleaning items, cleaning cloth and any other regular running items required for AMC are also in the scope ARCI.
20. Specials tools and tackles, which are involved in the job to be brought by contractor only.
21. **Important Note:**
  - a. The contractor is required to visit the site of works and make himself thoroughly acquainted with the working condition and of the approaches/ accessibility to site availability of materials and all other relevant conditions affecting the completion of entire work. He is required to make himself fully acquainted with the nature and scope of the work before tendering. The contractor shall be deemed to have visited the site before submitted the tender irrespective of whether he does it or not.
  - b. In case of any faults/repairs/ damages, the owner will decide the time/rate of rectification of the faults/repairs damages. The contractor in any way has to abide by the owner's instructions, where in it is presumed that his motto is to ensure uninterrupted power supply though out his contract period. In any case the Contractor fails to complete the rectification job with in the stipulated time, giving reasons, which are unreasonable to the owner, the owner has got right to levy penalty as per clauses of Annexure I & II
  - c. If the articles "Free for Fixing only" are lost or damaged while under the custody of the contractors the recovery in respect of such article will be made double the market rate the market rate shall be decided by ARCI.
  - d. The contractor has to prepare a detailed maintenance schedule for each equipment, 12 months maintenance schedule as per OEM recommendation and get it approved by ARCI & adhere to same. This has to be completed before the submission of the first RA bill.
  - e. **Force Majeure:**

In the event of, stoppage of work in any establishment of ours/ ours vendors during the execution period owing to war hostilities, acts of the public enmity, civil commotion, riots, acts of terrorism, sabotage, fires, floods, power cuts, earthquake, tempests, explosions, epidemics or any acts of God, quarantine

restrictions, strikes, lockouts, trade disputes, concerted action of workmen, breakdowns, accidents, etc. as well as transport embargoes, failures or delays in transportation, Governmental decree and / or causes beyond our control, deliveries / services may be postponed partially or wholly cancelled by us. The effected party shall provide notice within 7 working days. During existence of Force Majeure events, if it is not possible to continue the services at site, for a shorter duration of less than one month the scope and contract value shall be mutually discussed and agreed for force majeure period.

22. The contractors are requested to quote for the BOQ items as per technical specifications. The quoted rates should be valid for till the end of the contract ARCI will intimate in writing for operation of BOQ items as per site requirements and supply payments will be regularized in subsequent regular RA bills of AMC. The contractor is not eligible to claim any payment for non-operation of any BOQ items during the contract period.
23. The successful contractor has to execute on
  - a) Agreement on Rs.100/- bond paper as per ARCI agreement format .
  - b) An indemnity bond as per ARCI format on Rs100/- bond paper.



**24. ARTICLES OF AGREEMENT**

Made at ..... This ..... day of ..... 2018. Between ..... (hereinafter referred to as the Owner which expression shall include its heirs, Executors, Administrators & Assignees) of the one part and ..... (Hereinafter referred to as the Contractor which expression shall include his heirs, Executors, Administrators & Assignees) of the other part

WHEREAS the Owner is desirous of carrying out ANNUAL CONTRACT FOR MANNING, OPERATION AND MAINTENANCE OF PUMP HOUSE AT ARCI HYDERABAD, the priced Schedule of quantities have been signed by or on behalf of the parties hereto and WHEREAS the Contractor has agreed to execute up to and subject to the conditions set forth herein (hereinafter referred to as “the AMC works” described in “Scope of works” and etc in Annexure – II the said “Priced Schedule of Quantities at the respective Rates mentioned in the Priced Schedule/ Purchase Order of Quantities attached.

And WHEREAS the Contractor has agreed to submit the performance guarantee to ARCI for Rs. .... (Rupees..... Only) by him as performance guarantee for the due fulfillment of the contract to the satisfaction of the owner (ARCI)

**NOW IT IS HEREBY AGREED AS FOLLOWS:**

- (1) In consideration of the payments to be made to the Contractor as hereinafter provided he shall upon and subject to the conditions of contract execute and complete the works shown upon the said scope of works.
- (2) The Owner shall pay the Contractor such sums as shall become due and payable hereunder at the times and in the manner specified in the said conditions.
- (3) The tender agreement, documents and terms and conditions of NIT above mentioned shall form the basis of this Contract and the decision of the owner for the time being as mentioned in the Conditions of the Contract in reference to all matters of dispute as to the material, workmanship or account and as to the intended interpretation of the clauses of this agreement or any other document attached hereto shall be final and binding on both parties.
- (4) The said Contract comprises the work above mentioned and all subsidiary works connected there to within the same site as may be ordered to be done from time to time by the said owner.

- (5) Time shall be considered as essence of the agreement and the contractor hereby agrees to commence to work as soon as his tender is accepted by ARCI by issuing LOI/WO/PO
- (6) The said conditions shall be read and construed to be forming part of this agreement and the Parties hereto will respectively abide by and submit themselves to the conditions and stipulations and perform the agreement on their parts respectively in such conditions contained.
- (7) All disputes arising out of or in any way connected with this agreement shall be deemed to have arisen in Hyderabad and only the courts in Hyderabad alone shall have jurisdiction to determine the same.
- (8) The arbitrator for fulfilling the duties set forth in the arbitration clauses as defined with tender conditions of contract.
- (9) Arbitration: The Contract shall be governed by, and construed in accordance with the laws of India. Any dispute which cannot be amicably settled by the parties may be submitted, by the owners, to the International Center for Alternate Dispute Resolution (ICADR), Hyderabad. The dispute will be settled following the provisions of Arbitration and Conciliation Act, 2015. Both Parties agree that the results and awards of any such arbitration shall be binding on both Parties. Venue of Arbitration shall be Hyderabad.
- (10) The several parts of this contract have been read to us and fully understood by us.

As witness our hands this.....day of .....2018.....

.....  
Signed by the said Owner

.....  
in the presence of

.....  
Signed by the said Contractor

.....  
in the presence of

**25. Indemnity Bond**

The tenderers should submit Indemnity Bond at the time of the Agreement as specified below.

Name of work: \_\_\_\_\_

I \_\_\_\_\_ contractor S/o. \_\_\_\_\_ aged \_\_\_\_\_ Resident of \_\_\_\_\_ do hereby bind myself to pay all the claims may come (a) under Workmen's Compensation Act. 1933 with any statutory modification thereof and rules there under or otherwise for or in respect of any damage or compensation payable in connection with any accident or injury sustained (b) under Minimum wages Act 1948 (c) under payment of wages Act.1936 (d) under the Contractor labour (Regulation and Abolition) Act. 1970 by workmen engaged for the performance of the business relating to the above contract ie., failing such payment of claims of workmen engaged in the above work and any claim raised by statutory authorities for nonpayment of taxes and duties, I abide in accepting for the recovery of such claims, effected from any of my assets with the Corporation and with other Government Departments / Corporations.

**26. FORM OF TENDER**

(To be submitted by the Tenderer in letter head).

From

.....  
.....  
.....  
.....

To

**International Advanced Research Centre  
for Powder Metallurgy and New Materials (ARCI)**  
Balapur, Hyderabad-500005

Dear Sir,

- 1.0 Having examined the Tender documents consisting of the Tender notice, General Instructions to Tenderers, General Conditions of Contract, Special Conditions of Contract, Drawings, Time Schedules, Form of Contract , form of tender, form of schedule Rates, Bill of quantity etc., and having understood the provisions of the said tender documents and also having thoroughly studied the requirements of International Advanced Research Centre for Powder Metallurgy And New Materials (ARCI), related to the work tendered for in connection with the Annual contract for manning, operation and maintenance of pump house at ARCI, Hyderabad, and having conducted a thorough study of the job site involved, the site conditions, power, water, material and equipment availability, the transport and communication facility and the availability and suitability of borrow areas etc., we hereby submit our tender offer for the performance of proposed work in accordance with the terms and conditions and within the time mentioned in the tender documents at the rates included within the tender documents and based on application of the rates tendered in the accompanying schedule of rates to the relative quantities indicated in the form of schedule rates forming part of the tender documents.
  
- 2.0 If the work or any part thereof is awarded to me/us, I/we undertake to perform the work in accordance with the contract documents as defined in the form of contract forming part of the tender documents and accept the terms and conditions of contract as laid down therein and undertake that on receipt of acceptance of tender and on confirmation. I/We will deposit such sums as may be necessary under the terms of contract and abide by the terms of the tender. I/We will also sign the necessary contract and other documents to commence the work and execute the work as per the terms and conditions contained in the tender documents failing which International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) shall be at liberty, without further reference to me/us and without prejudice to any of its rights to terminate the contract and or to forfeit the earnest money deposit and take further course of action.

- 3.0 I/We further undertake to keep our tender offer open for a period of not less than 90 days from the due date of submission of the tenders as specified in the General Instructions to tenderer forming part of the tender documents. `
- 4.0 I/We hereby undertake that the statements made herein/information above are true in all respects and that in the event of any such statement or information being found to be incorrect in particular, the same may be construed to be a misrepresentation entitling International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) to avoid any resultant contract and take further action as may be justified. I/We confirm having deposited EMD of Rs. .... in the form of .....

Yours faithfully,

Signature of the tenderer

Name and designation of the Authorized person signaling the Tender on behalf of the Tenderer.

Name:

Designation:

Address:

Witness :

## **27. Fair Wage Clause:**

- 27.1 The contractor shall pay not less than fair wages to labourers engaged by him on the work.
- 27.2 "Fair" wages means wages whether for time or piecework notified by the Government from time to time in the area in which the work is situated.
- 27.3 The contractor shall notwithstanding the revisions of any contract to the contrary cause to be paid to the labour, directly engaged on the work including any labour engaged by the sub-contractor in connection with the said work, as if the labourers had been directly employed by him.
- 27.4 In respect of labour directly or indirectly employed in the works for the purpose of the contractor's part of the agreement the contractor shall comply with the rules and regulations on the maintenance of suitable records prescribed for this purpose from time to time by the Government. He shall maintain his accounts and vouchers on the payment of wages to the labourers to the satisfaction of the Owner.
- 27.5 The Owner/Consultant shall have the right to call for such record as required to satisfy himself on the payment of fair wages to the labourers and shall have the right to deduct from the contract amount a suitable amount for making good the loss suffered by the worker or workers by reason of the "fair wages" clause to the workers.
- 27.6 The contractor shall be primarily liable for all payments to be made and for the observance of the regulations framed by the Govt., from time to time without prejudice to his right to claim indemnity from his sub-contractors.
- 27.7 As per contract labour (Regulation and abolition) Act. 1970 the contractor has to produce the license obtained from the licensing officers of the labour department along with the tender or at the time of agreement.
- 27.8 Any violation of the conditions above shall be deemed to be a breach of his contract.
- 27.9 Equal wages are to be paid for both men and women if the nature of work is same and similar.
- 27.10 The contractor shall arrange for the recruitment of skilled and unskilled labour local and imported to the extent necessary to complete the work within the agreed period as directed by the Owner/Consultant.

## **28. Safety Measures**

- 28.1 The contractor shall take necessary precautions for safety of the workers and preserving their health while working in such jobs, which require special protection and precautions. The following are some of the measures listed but they are not exhaustive and contractor shall add to and augment these precautions on his own initiative where necessary and shall comply with directions issued by the Owner/Consultant or on his behalf from time to time and at all times.
- 28.2 Providing protective foot wear, Goggles, nose masks, electrical hand Gloves, helmet to the workers as per the site requirement.
- 28.3 Getting the workers in such jobs periodically examined for chest trouble due to too much breathing in of fine dust.
- 28.4 Taking such normal precautions like fencing and lighting in excavation of trenches, working at the heights during night times and etc. As per the site requirement.
- 28.5 Supply work men with safety proper belts, ropes etc., when working in precarious slopes and heights etc. As per the site requirement.
- 28.6 Avoiding un-insulated electrical wire etc., as they would electrocute the workers.
- 28.7 Taking necessary steps towards training (i.e. on particularly on safety, operation and technical details) the workers concerned on the machinery work spot before they are

allowed to handle them independently and taking all necessary precautions in and around the areas where machines hoists cable pulleys, rollers, hydraulic crimping tools and heat sink cable jointing kits and similar units are working.

- 28.8 The Contractor should isolate the work spot by providing safety barricades, Signage boards and etc.

## **29.0 Employment of Labour**

- 29.1 The contractor shall comply with the requirement of statutory provisions and shall be solely responsible for fulfillment of all legal obligations under Contract Labour (reg. & abolition) Act, Inter State Migrant Workmen Registration of Employment and condition of Service Act, payment of Wages Act., Minimum Wages Act, Workmen's Compensation Act, Employee's Provident Fund & Miscellaneous Provisions Act, Payment of Bonus Act, Payment of Gratuity Act, Industrial Disputes Act and all other Industrial/Labour enactments and Rules made there under as applicable from time to time. In case Owner incurs any liability towards payment of any dues, compensation, cost of any other liability of any kind whatsoever, due to non fulfillment of statutory provisions under any industrial/labour laws by the contractor, the same shall be made good by the contractor and Owner shall have full right to recover and claim the same against the contractor from his outstanding bills or otherwise. No Labour to stay at site.
- 29.2 The contractor will be expected to employ on the work only his regular skilled employees with experience of this particular work. The permission of the Owner must be obtained before tradesmen are recruited locally for the work. This rule does not apply to unskilled labour. No female labour shall be employed in dark hours/ i.e. hours prohibited under the applicable law. No person below the age of eighteen years shall be employed at any point of time. The contractor shall pay, to each person, the wages as per minimum Wages Act of the State Government.
- 29.3 All traveling expenses including provision of all necessary transport to and fro, lodging allowances and other payments to the contractor's employees are his own responsibility.
- 29.4 The hours of work on the site shall be decided by the Owner and contractor shall adhere to the same.
- 29.5 All contractors' employees shall wear safety shoes, helmet, goggles, hand gloves, nose masks and any other required personal protection equipment such identifications marks as may be provided by contractor on work site and duly approved by Owner.
- 29.6 All notices displayed on the site and any instructions issued by the Owner shall be strictly adhered to by the Contractor's and/or his sub-contractors employees.
- 29.7 The contractor shall be required to maintain employment records as covered in relevant Acts and produce documentary evidence to the effect that he has discharged his obligations under the Employees Provident Fund Act 1952, and ESI Act, 1948, if applicable, Group Insurance and other Acts for the workmen working at site towards safety, statutory regulations and insurance aspects applicable as per latest Government (Central & State) acts.
- 29.8 Each employee is entitled for 8 paid holidays in a year & 52 weekly OFFs. The schedule to this effect is to be prepared in consultation with ARCI Engineer and ensure that a team of Electrical and Mechanical personnel is available at site at any time to attend the duties. However, the shift employees will attend the duties as per the abided rules.
- 29.9 ARCI reserves the right to call for services of these employees on any weekly off day or on paid Holiday, for which a compensatory OFF shall be provided to him, this will be in consultation with ARCI Engineer.

- 29.10 When the employees of the contractor are called on any weekly off day or Paid Holiday, ARCI shall be not be liable for any extra payment in this regard.
- 29.11 ARCI reserves the right of imposition of penalty for non-performance or damage during emergency / routine work instructed to your mechanic / Engineers.

### **30.0 Insurance**

- 30.1 The Contractor shall provide, in the joint names of the ARCI and the Contractor, Insurance cover from the Start Date to the completion of work and handing over to the owner for the amounts and deductibles stated in the Contracted Amount for the following events which are due to the Contractor's risks and shall be covered under respective policies as under:
- (a) Contractor's All Risk Policy;
  - (b) Third Party Insurance for four consecutive occurrences, the minimum cover for occurrence is Rs. 1.0 lac. Contractor will pay additional premium after each occurrence to make insurance valid for four occurrences always.
- 30.2 The contractor shall provide workmen compensation policy, obtained in his name.
- 30.3 Policies and certificates for insurance shall be delivered by the Contractor to the ARCI for the ARCI approval before the Date of Start of work i.e., date of execution of the contract. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.
- 30.4 If the Contractor does not provide any of the policies and certificates required, the ARCI may affect the insurance which the Contractor should have provided and recover the premiums the ARCI has paid, from the contractor bills. Otherwise due to the Contractor or if no payment is due, the payment of the premiums shall be a debt due. The cost of premium will be deducted from the contractor's bill, if at any time the work remains uninsured, irrespective of whether the policy is obtained by the ARCI.
- 30.5 Alterations to the terms of the insurance shall not be made without the approval of the ARCI or Consultants.
- 30.6 Both parties shall comply with the conditions in the insurance policy.
- 30.7 All policies in original shall be submitted to the owner before the release of the 1<sup>st</sup> RA bill.

### **31.0 Particular attention is drawn to the following**

- In case of accident, the ARCI shall be informed in writing forthwith and First-Aid, Hospitalization shall be provided by the Contractor. The contractor shall strictly follow regulations laid down by Govt. and State authorities in this regard and all cases are to be defended By the Contractor. The ARCI shall not entertain any insurance claims.
- 31.1 Compliance with all electricity regulations should be ensured.
- 31.2 Compliance with statutory requirements for inspection and test of all lifting appliances and auxiliary lifting gear is to be ensured.
- 31.3 Staircase, doors or gangways shall not be obstructed in any way that will interfere with means of access of escape.
- 31.4 Where it is necessary to provide and/or store petroleum products or petroleum mixtures and explosive, the contractor shall be responsible for carrying out such provision and/or storage in accordance with the rules and regulation laid down in Petroleum Act 1934. Explosive Act 1948 and Petroleum and Carbide of Calcium Manual Published by the Chief Inspector of Explosive of India. All such storage shall have prior approvals of the Owner/Consultants. In case any approval or clearance from Chief Inspector of Explosive or any statutory authorities is required, the contractor shall be responsible for obtaining the same.



### **32.0 Working and Safety Regulations**

- 32.1 The contractor shall observe all statutory, safety, and legal requirements / regulations issued by Central and State Governments applicable to the work as well as any local regulations applicable to the site.
- 32.2 The contractor has to fulfill the safety obligations at site and ensure that all safety equipment required for the execution of the work is available and used by the workmen at site.
- 32.3 Required safety signage and other requirement as per safety norms must be compiled as per the instructions of the ARCI/Consultant.
- 32.4 A qualified person(i.e. shift incharge supervisor) is charge of safety should be at the site by the contractor to take care of the safety related issues during the execution period with regard to workmen and material.
- 32.5 The contractor shall be responsible for the provision of all safety notices safety equipments including the safety gadgets for his workmen required by both the relevant legislation and such as the ARCI may deem necessary. While working at heights, safety belts, nets, and safety helmets shall necessarily be used.

# **ANNEXURE – II**

**DETAILED SCOPE OF WORK FOR AMC OF  
PUMP HOUSE  
AT  
ARCI, HYD.**

**THE DETAILED SCOPE OF WORK INVOLVED IN THE ANNUAL MAINTENANCE CONTRACT OF PUMP HOUSE:-OPERATION, MANNING AND MAINTENANCE FOR 1YEAR ON TWO SHIFT BASIS.**

**1. LIST OF EQUIPMENTS / ITEMS FOR AMC**

**1.1 STORAGE TANKS CAPACITY DETAILS:**

1. ARCI Main Sump Capacity – 2.0 lakhs gallons capacity (909KL)
2. Intermediate sump :- 150KL
3. Industrial Building sumps capacity at CLPM & PMD (2nos) – Each 100 KL (both cold & hot water).
4. Over head tank (two compartments) – 75KL of drinking water and 150KL of Industrial water.

**1.2 PIPE LINE DETAILS:**

1. Internal distribution lines – MS & GI pipe line 300mm to 12mm.
2. Fire Fighting lines – MS pipe lines 200mm to 50mm.

**1.3 Motor central centre – 2nos (Indoor)**

**1.4 Motor central centre – 2nos (Out door)**

**1.5 MOTOR PUMP SETS DETAILS:**

100HP – 2nos, 20HP – 12nos, 7.5HP – 4nos, 5HP – 2nos, 2HP – 6nos

**2.0 DETAILED SCOPE OF WORK :**

- 2.1 All Pump House items should maintained as per their respective O.E.M. Maintenance schedules.
- 2.2 Normal preventive maintenance once in four months for pumps, motors, electrical panels and valves.
- 2.3 Preventive maintenance once in a year by a specialist to clean OHT tank, under ground sumps, sintex tanks as per item code specification mentioned in BOQ in Annexure – IV.
- 2.4 Emergency breakdown, rectification and maintenance any where in the system.
- 2.5 Preventive maintenance of drinking water supply and industrial water system with the Overhead tank & sintex tanks and associated pipe line network up to and

- including flush tanks. The work include arresting of leakage / removal of blockage in the pipeline and connections on to the sintex tanks and at the valves and fittings and keep uninterrupted supply of water to all buildings. Necessary soil excavation, refilling, making good the disturbed surfaces and minor materials like thread sealing compound, pipe fittings like tees, elbows, reducers, union couplings for all the involved sizes (25mm to 150mm) soil excavation, welding and pipe line accessories are at extra cost with approval of ARCI.
- 2.6 Every six month water samples from ARCI storage sumps in lets for testing a) Physical b) Bacteriological c) Chemical and submit certificate for payment along with R.A Bill. The test should be carried at recognized lab..
  - 2.7 ARCI will supply all the spares, accessories, log books, consumables, labour for soil excavation & welding,
  - 2.8 Rectification of tap leakages of bib cocks & pillar taps, stop cocks at toilets, washbasins, water cooler inlet, urinals, flush tanks at all buildings at ARCI.
  - 2.9 Leakages rectification in GI pipe line network should be rectified with thread sealing with compound, fitting of any GI spares and accessories.
  - 2.10 The minimum maintenance schedule of above equipment are given below. However, the detailed 12 months maintenance schedule for each equipment will be submitted by the contractor to ARCI and get it approved by ARCI and also adhere to same i.e. should be enclosed along with the first RA bill.
  - 2.11 Fault finding – A report should be submitted for breakdown, reasons for the fault and fault analysis report for the equipments mentioned in the scope of work.
  - 2.12 Coordinating OEM'S service activity and ensuring quality of the servicing of the equipment.
  - 2.13 Coordinating with LT substation (electrical) for smooth function of electrical supply system.
  - 2.14 Valves:- All valves such as NRV'S, gate valves, ball valves foot valves operation, maintenance and emergency rectification.
  - 2.15 Detailed diagrams of internal water distribution of ARCI complex are enclosed. Most of the motors are located in pump house to cater water supply to various buildings and fire hydrant system.
  - 2.16 There are 2nos Bore Well, in ARCI complex.

- 2.17 Rectification of MS Under Ground pipe line network leakages (soil excavation filling and welding under scope of ARCI):- Remaking of protective tape, coating with bituminous material and MS clamping.
- 2.18 Cleaning of valve pits & man holes and painting (enamel) of rims & covers and also applying of grease for easy opening & closing of valve pits / manholes.
- 2.19 House keeping:- Removing & cutting of bushes & grass and trees in and around 3mt wide working areas mentioned in tender document. And also cleaning of surfaces at pump house, sumps, OHT and etc if required painting surface areas with enamel paint.
- 2.20 By deputing manpower the contractor has to ensure smooth operating of pump house and ensure the delivery of water to end users. Minor repair and rectification works are in the deployed manpower scope.
- 2.21 The work, which will be done at extra cost (both labour & materials), will be decided by ARCI. The extra works should be carried out and coordinated (with written approval from ARCI)
- 2.22 Based on ARCI requirement **Illrd shift (22.00 hrs to 06.00 hrs)** will be operated for pumping the water to Over Head Tank and allied works for which two technicians should be deployed. The additional payments for operation of Illrd shift will be made as per BOQ item code No: 305001043 to 305001046 as per the deployed category of manpower.

## **2.23 SOCPE OF WORK INVOLVED IN OVERHAUL / MAINTENANCE FOR PUMPS AND MOTORS**

- a) Alignment of pump set will be checked & in case in required rectification should be carried out. & readings should be recorded.
- b) Coupling brushes, pins, rubber parts will be checked & should be replaced if required.
- c) Gland packing should be checked & should be replaced if it is worn – out.
- d) Oil levels, & grease in bearing will be checked & replenished if necessary.
- e) Current, Voltage, speed, pressure, should be measured & recorded.
- f) Discharge should be determined based on performance curve of the pump.
- g) Noise, vibration & Temperature levels should be checked. (for concurrence)

- h) Minutes of meeting will be made after every check.
- i) Overhaul should be done as per the OEM's recommendations as per operating manual.
- j) Dismantling of pumps should be done only with approval from ARCI.
- k) Total tool, tackles, chain pulley, try pad lifting materials, assisting manpower and complete job is under the contractors scope.
- l) Spares parts required will be under ARCI scope.

## **2.24 Daily Schedule**

- a) Total water system operation on day to day maintenance.
- b) Daily drinking water supplied to all buildings of ARCI – Campus from time to time.
- c) Deployment of qualified, competent man power as per the list mentioned to ensure smooth operation and day to day water supply.
- d) Water taps, Wash basin & Long body taps, flush tanks, Urinal spreaders should be checked for leakages & malfunctioning and repair immediately at all toilets and Urinals.
- e) Daily water filling in:
  - i. Drinking OH tank.
  - ii. Cooling OH tank.
  - iii. Drinking & cooling sumps.
  - iv. CLPM, Nano Centre & Sic Sumps.
- f) Daily supply line checking inside ARCI – Campus from time to time.
- g) Daily Krishna water discharging from time to time & filling the sumps.
- h) Daily Nano Centre & CLPM sumps hot water return work attending.
- i) Daily technology park valve open & closing.
- j) Arresting water leakages in total ARCI complex.
- k) Log books and complaint register to be maintained at pump house and register all the complaints in writing and allot complaint number and ensure

it's completion as early as possible and should submit along with monthly RA bill.

- l) The work involved is, distribution of water from source to the individual tanks and from tanks to individual taps inside the building. Day to day maintenance are to be carried out to ensure continuous water supply.

## **2.25 Weekly Schedule**

- a) Pump set operation at pump house and at two sumps along with foot valves NRVS, coupling bearings rubber brushes starters (DOL & star delta) glands, lugs, cables to ensure smooth and trouble free working to get or pump the water to designated place as designed.
- b) Carry out preventive maintenance as per the check – list, Equipment manuals.
- c) Prepare list of spares and material required for carrying maintenance work and submit it to ARCI Engineer in advance for better material management.
- d) Maintain inventory of spares, accessories and consumables.
- e) Checking of fire hydrants for free water flow, cleaning, rust removal, painting and water leakages rectification and coordinate with security and fire officer ARCI for good working condition.
- f) Survey of various buildings over head tanks and main 25 mtr over head tank for any leakages or damages.
- g) Checking for smooth operation of all pumps sets if found abnormal same should be taken up for rectification.

## **2.26 Monthly Schedule**

- a) MS/CI/GI pipe line and overhead tank for industrial cooling water inside ARCI campus with valve pits in the cold water line (forward line), transient storage points in the hot water return line (back flow) to ensure the free flow of water through these passages. Works include cleaning the inside of valves pits and cleaning of valve outer to ensure the smooth, operation of valves and arresting any leakage due to loose fittings, cleaning of transient storage points of dirt, silt any other material which can obstruct the free flow of water.
- b) Checking of MCC/Panel switch gears/Equipments at specified points and takes corrective actions in case of abnormality.
- c) Monthly water report and evaluation of water usage efficiency.
- d) Monthly performance review report comprising – Records of PM done on rotary and static equipments, breakdowns occurred and subsequent root cause analysis, corrective and preventive measures. Safety initiatives and report. Repair and maintenance expenses incurred. Analysis and action plan for next month.

- e) Taking up preventive maintenance of items as per O.E.M recommendation ARCI approved maintenance schedule.

### **2.27 Quarterly, Half Yearly and Yearly Schedule**

- a) Electrical: Periodical cleaning, maintenance and checking of LT Panel Boards, Sub – Panel DBS, Switch Boards, Light fitting, Fans.
- b) Preventive maintenance of equipment of Pump House are to be carried out as per approved schedule. All the maintenance service sheets are to be submitted.
- c) Implementation of Zero Accident Plant at site. Safety Trainings for employees, documentation and periodic safety audits as per requirements of OHSAS 18001.
- d) Earth resistance should be measured for earth pits of pump house and watering the earth pits and submit report for the same.
- e) Submit half yearly & annual report to ARCI management inclusive of Reduction in breakdowns, Actions for ZERO BREAKDOWNS, Major overhauls, Consumption of spares, Manpower turnover & suggestions, if any.
- f) To carry out all such jobs to ensure proper health of installation and to ensure uninterrupted water supply to ARCI requirements.
- g) Periodical checking and cleaning of all pumps, motors and control panels.

### **3. FLOW OF WATER AT ARCI**

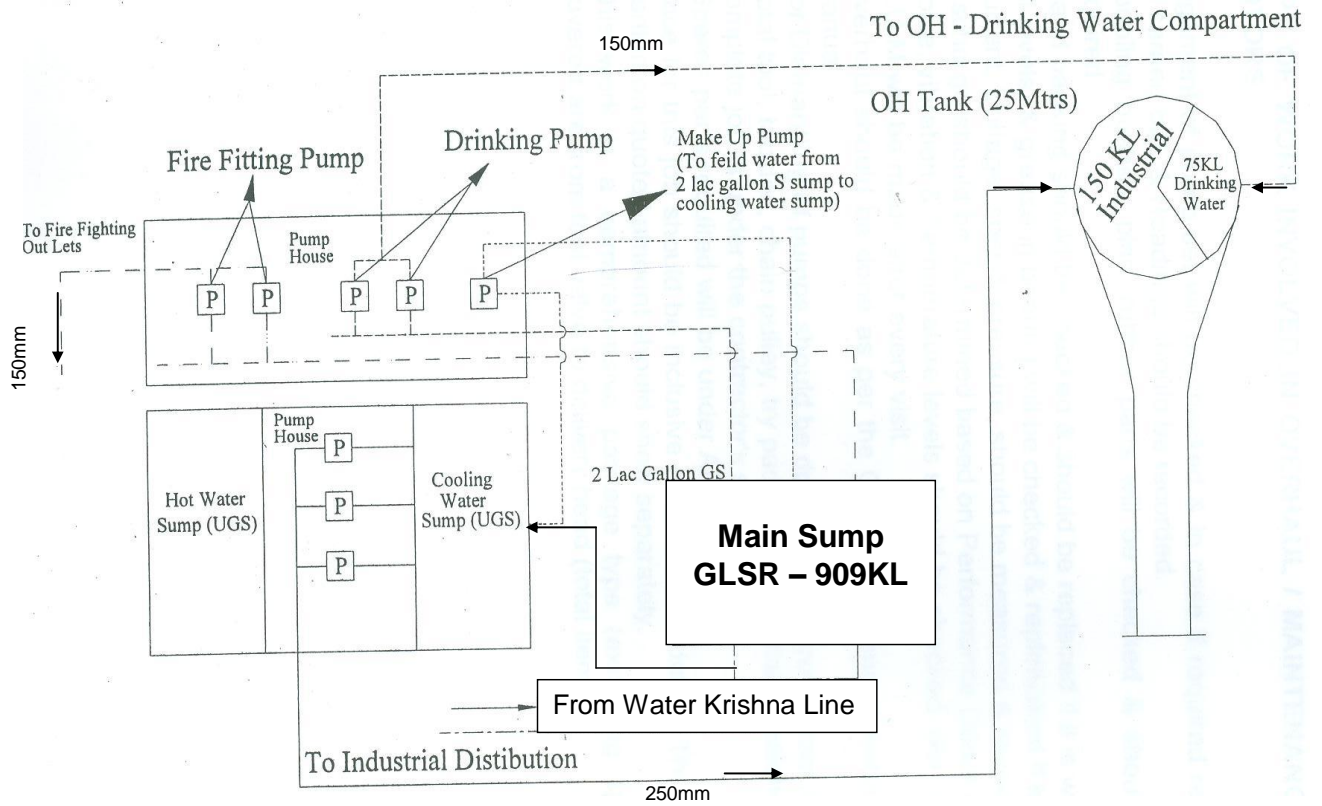
- 3.1 The water will be released by opening the 600 Dia valve on incoming Krishna water pipe line of 600dia and will be routed through two 300dia valves of 300dia pipe line to main 909KL GLSR and 150KL cooling water sump (or intermediate sump) by gravity feed.
- 3.2 By switching on make up pumps 2nos x 5HP (only one pump on at a time) the water will be pumped from 909KL GLSR to 150KL cooling water sump.
- 3.3 There are two compartments in 25mt height OHT one is of 75KL drinking water compartment + second is of 150KL industrial water compartment
- 3.4 By switching on 2nosx20HP pumps (only one pump on at a time) water will be pump to 75KL drinking water compartment from 909KI main GLSR through 150mm MSUG pipe line with gate valve control.
- 3.5 From 75KL OHT tank drinking water will be supplied through 150/100 mm dia to 25mm dia GI pipe lines with gate valve control to building sintex tanks by gravity and to end usage at toilets, urinals & drinking water coolers.
- 3.6 From 150 KL cooling water sump (or intermediate sump) the industrial water will be pump to 150 KL industrial OH tank by switching on 7nos x 20HP pump (only



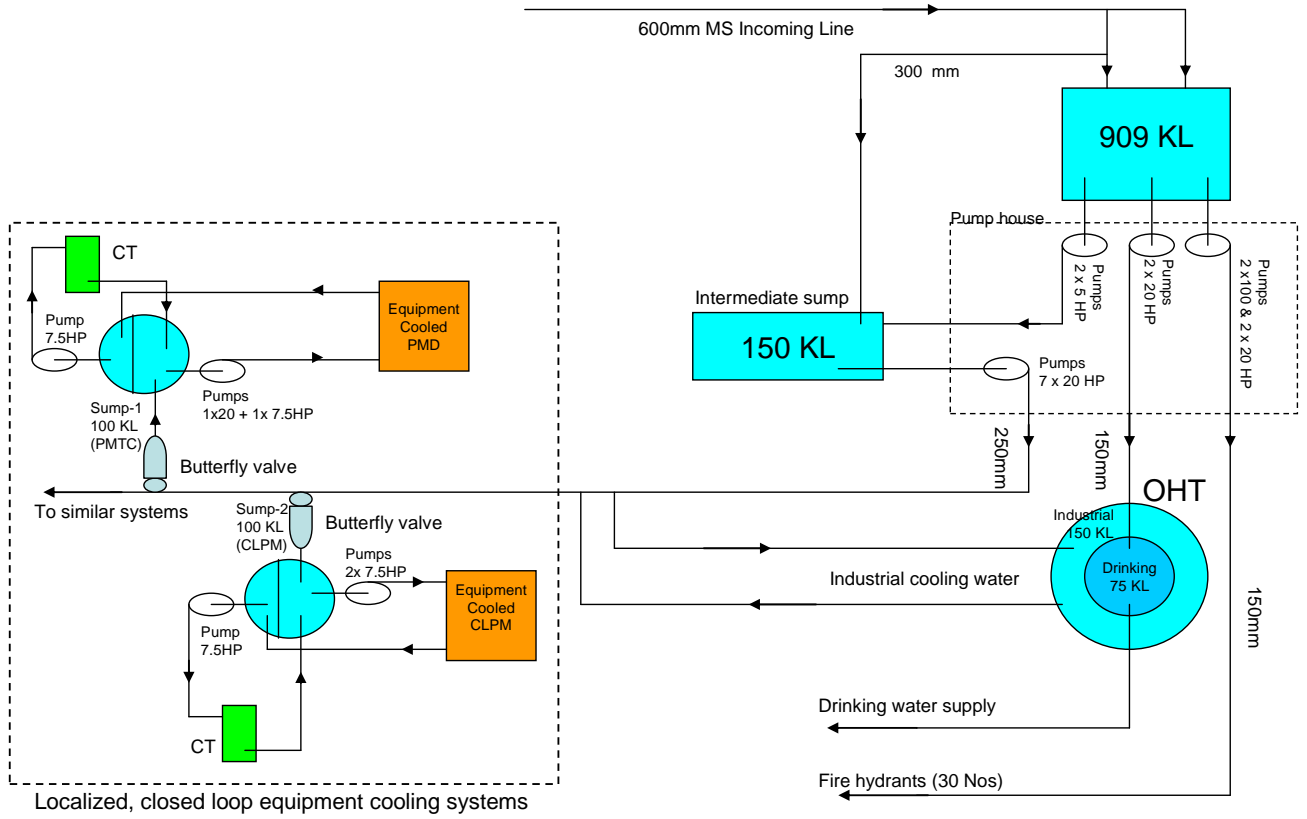
one pump on at a time) through 250mm dia MS Under Ground pipe line with intermediate gate valve controls.

- 3.7 By gravity the industrial water will flow from 150KL OHT industrial tank to closed looping water tanks 2nos one each at CLPM & Nano building of 100KL capacity and to various locating for use.
- 3.8 Cooling water for various sumps of 100KL capacity near to the industrial buildings (One for CLPM & another for Nano Centre) from these sumps the water is supplied to equipments with the help of pumps located near the sumps (i.e. 20HP and 7.5HP – 4nos) the water after circulated through the equipments is collected back to a hot water sump of 50KL capacity (near to the industrial buildings sumps) through a hot return water pipe line network intercepted with 6nos of level equalizing transient storage points. The hot water thus collected is passed through the cooling towers using an array of 1nos. of 7.5 HP centrifugal pump sets (hot water pump sets) and filled back into the cold water sump by gravity for re-circulation. So in this process cooling water is in circulation in a closed loop. To compensate the losses in circulation process water is added to the cold water sump as and when necessary presently cooling tower are by passed.
- 3.9 The fire fighting system consists of another separate pipeline of 150mm dia Under Ground net work with 30Nos of fire hydrants located at various points inside the campus. The pipeline network is always kept at the required pressure levels with an automatic ON – OFF control of the feed motor – pump sets, using pressure switches. An emergency storage is always maintained in the 909KL GLSR for this purpose by keeping the other suction headers at a higher level than that of the fire fighting pump sets on this line 2nosx100HP + 2x20HP pump are operated to get required pressured water from any of the fire hydrants.
- 3.10 There are two bore wells at the ARCI campus the delivery headers are connected to a common loop are connected to the industrial sumps near to the pump house & lawns for gardening, forming an entirely separate water supply system.
- 3.11 Flow chart (2nos) diagram enclosed

# Schematic Water Flow Diagram



# Existing water supply system



## 4. PUMP TROUBLE SHOOTING CHART

- A.** Pump delivers insufficient / less capacity.  
**B.** Pump does not deliver water  
**C.** Pump loses priming after starting / performance deteriorates.  
**D.** Insufficient pressure developed.  
**E.** Pump requires excessive power.  
**F.** Pump delivers too much.  
**G.** Motor gets hot and burns out.  
**H.** Stuffing box leaks heavily.  
**I.** Unsteady running of pump / delivery is interrupted.  
**J.** Pump is noisy or vibrates excessively.  
**K.** Gland packings have short life.  
**L.** Motor does not start or is difficult to start or is jammed.  
**M.** Bearings have short life.  
**N.** Pump and / or bearing overheats or seizes.

S.No	Symptoms / Causes`	Troubles						
		A	B	C	D			
1.	Suction pipe / foot valve choked, defective or too small.	A	B	C	D			
2.	Suction pipe-not sufficiently submerged; has many bends, clearance around suction not sufficient.	A	B	C	D			
3.	Improper position of shut off valve, incorrect layout of Suction line (Formation of air pockets)	A	B		D			
4.	Suction valve not open fully, joints in suction not leak proof, air leaking in Suction and stuffing box.	A	B	C	D			
5.	Suction lift too high, suction head too low, (NPSH not sufficient).	A	B	C	D			
6.	Liquid contains too much gas or air or is too viscous.	A	B		D			
7.	Number of revolutions too high or incorrect direction of rotation		B		D	E	F	G
8.	Number of revolution too low.	A	B		D			
9.	Impeller clogged / damaged / not of correct dia and type.	A	B		D	E		
10.	Casing ring and / or shaft sleeve under st. box worn out.	A	B	C	D			
11.	Cavitation in suction side.	A	B	C	D			
12.	Sealing liquid omitted / insufficient / contaminated.	A			D			
13.	Lantern ring not in correct position (below sealing inlet)	A			D			
14.	Gland packing incorrectly fitted / or tightened too much / slanted / packing not suitable for operating conditions.				D	E		
15.	Bearing worn out / specified lubricant quality & quantity not maintained					E		G
16.	Shaft sleeve worn out in stuffing box region.	A				E		
17.	Ball bearings not of correct size / or incorrectly fitted / or have axial thrust.					E		G
18.	Bearing dirty / rust (corroded)					E		G

19.	Insufficient cooling water to st. box cooling / sediment formation in stuffing box chamber.				D			
20.	Loose coupling / or faulty alignment of coupling / worn out rubber bushes.				E			
21.	Pump casing and / or pipe line under stress / vibration of pipe work.				E			
22.	Shaft runs untrue / shaft bent / or rotating parts not balanced properly or touching the casing.				E		G	
23.	Non return valve choked / or obstruction in delivery line.	A			D			
24.	Delivery flow too much / Low head.				E	F	G	
25.	Pump choice & type unsuitable for existing condition / or pump unsuitable for parallel & series operation.	A			D	E	F	G
26.	Voltage too low / power supply overloaded / or supply frequency not correct.				E		G	
27.	Short circuit in motor or in starter.				E		G	
28.	Setting of starter too high or incorrect.				E		G	
29.	Temperature of delivery liquid too high.						G	
30.	Excessive total head on pump.	A	B					
31.	Suction pipe – not sufficiently submerged / has many bends, clearance around suction not sufficient.		I					
32.	Suction pipe / foot valve choked, defective or too small.		I					
33.	Suction valve not open fully, joints in suction not leak proof air leaking in suction and stuffing box.		I					
34.	Improper position of shut off valve, incorrect layout of suction line (formation of air pocket).		I					
35.	Suction lift too high, Suction head too Low (NPSH) not sufficient)		I					
36.	Number of revolutions too high	H	I	J	K		M	N
37.	Number of revolutions too high or incorrect direction of rotation.		I					
38.	Liquid contains too much gas or air, or is too viscous.	H	I		K			
39.	Casing ring and / or shaft sleeve under st. box worn out or damaged.		I		K			
40.	Sealing liquid omitted / insufficient / contaminated.		I	J				
41.	Impeller clogged / damaged / not of correct dia and type.		I					
42.	Cavitation in suction lines / suction –side of impeller.	H		J	K			
43.	Gland packing incorrectly fitted / or tightened too much/ slanted / packing not suitable for operating conditions.	H	I	J	K		M	
44.	Shaft sleeve worn out in stuffing box region.	H			K		M	
45.	Lantern ring not in correct position (below sealing inlet).			J			M	N
46.	Ball bearings not of correct size / or incorrectly fitted / have axial thrust.			J			M	N
47.	Bearing worn out / specified / lubricant quality & quantity not maintained.				K		M	N

48.	Insufficient cooling water to st. box cooling / sediment formation in stuffing box chamber.				K		M	N
49.	Pump casing and or pipe line under stress / vibration of pipe work.			J			M	N
50.	Bearings dirty / rusty (corroded) or jammed.			J		L	M	N
51.	Delivery flow too much.			J			M	N
52.	Loose coupling / or faulty alignment of coupling / worn out rubber bushes.			J		L	M	N
53.	Pump choice & type unsuitable for existing condition / or pump unsuitable for parallel operation.		I			L		N
54.	Voltage too low / Power supply overloaded / or supply frequency not correct.					L		
55.	Shaft runs untrue / shaft bent / or rotating parts not blanced properly, or touching the casing.	H		J	K	L	M	N
56.	Short circuit in motor or in starter.					L		
57.	Non return valve choked / or obstruction in delivery line.		I	J				
58.	Temperature of liquid too high.						M	
59.	Setting of starter too high or incorrect.					L		
60.	Excessive total head on pump.	H			K		M	

**TIME FRAME FOR MAINTENANCE (BOTH PREVENTIVE AND BREAK DOWN)**

Breakdown rectification works shall be classified into following three categories

- a. Normal Breakdown            -within 24hours from the time of breakdown
- b. Abnormal Breakdown       -1 week to 4 week from the date of break done
- c. Emergency Breakdown    -Immediate without any break.

*Note: - The contractor is presumed to be conversant with the system and be able to decide. The category under which the type of fault/breakdown falls. However, ARCI decision shall be final.*

Preventive Maintenance for every four to six months. Such maintenance shall not last for more than two to four days, generally.

**Penalty:-** In case the Contractor fails to repair/ rectify, the equipment (including replacement of spare parts) or fails to restore the supply, on war footing, without any intermediary break (like holidays) the owner reserves the right to levy penalty @ 0.5% of contract value, per week of delay or part there of, subject to a maximum 5% of contract value.

However, where such delays are due to force majeure (i.e. beyond the contractor's control), no penalty shall be imposed.

The decision of Director, ARCI / competent authority, ARCI shall be final and binding.

**MINIMUM QUALIFICATION OF MANPOWER TO BE EMPLOYED BY THE CONTRACTOR FOR AMC AND MINIMUM MANPOWER TO BE DEPUTED:**

1. The operating personnel shall have thorough knowledge on safety precautions during emergency cases and also conversant with State Electricity rules, regulations and Indian factory act rules and Indian explosive rules & regulations. The contractor shall provide and maintain First Aid box in each installation complete with necessary medicines etc.
2. The following are the qualification of staff to be employed by the contractor for efficient operation and maintenance of the system.
  - 2.1 **Site Engineer-in-charge:**  
A graduate or diploma mechanical engineer having minimum 10 years of practical experience in Pump house operating
  - 2.2 **Plumber, Fitter & Electricians:**  
ITI certificate holder with suitable skilled 5 years practical experience in carrying out operation and maintenance of pumps, motors, pipe line, valves, MCC and etc.
  - 2.3 **Helper:**  
SSC pass certificate holder with 5years industrial experience.
3. **MAN POWER TO BE DEPUTED PER SHIFT**
  - 3.1 General shift :- 1No Site Engineer In charge+1No electrician + 1No Helper (09.00Hrs to 17.30Hrs)
  - 3.2 I<sup>st</sup> shift :- 1No Plumber + 1No Fitter (06.00Hrs to 14.00Hrs)
  - 3.3 II<sup>nd</sup> shift :- 1no Plumber + 1no Fitter (14.00Hrs to 22.00Hrs)
4. **NO OF MANPOWER REQUIRED FOR THE CONTRACT**
  - 4.1 Plumber :- 3nos
  - 4.2 Fitter :- 2nos
  - 4.3 Helper :- 1no
  - 4.4 Electrician :- 1no
  - 4.5 Site Engineer :- 1no
  - 4.6 Total 8nos (i.e. including leave reserve) should be deployed for this contract.
  - 4.7 Operate pump house on 365days x 16Hrs.
  - 4.8 Monday to Friday – General Shift + I<sup>st</sup> shift + II<sup>nd</sup> shift
  - 4.9 Saturday to Sunday – General Shift (for maintenance job)



**5. Note:-**

1. The contractor shall employ only certificate holders as mentioned above proof of documentary evidence for experience, qualification and antecedents should be submitted for approval of the Director, ARCI.
2. At any time, the deployment of manpower per day should be maintain as given above.

# **ANNEXURE – III**

## **TOOLS & TACKLES**

## **ANNEXURE – III**

### **TOOLS & TACKLES:**

The contractor should keep the following minimum tools, tackles, furniture and calibrated instruments at site for carrying – out the, operation maintenance and other jobs as required.

1. Pipe wrenches to handle GI pipe sizes of 12mm to 100mm – 2Nos
2. Pipe wrenches to handle GI pipe sizes for above 100mm – 1no
3. Thread die set for above GI pipe sizes – 1no
4. Ring spanner set – 1no
5. De spanner set – 1no
6. Cutting plier – 2nos
7. Screw drivers – 4nos
8. Multimeter – 1no
9. Tough tester – 1no
10. 1000volts megger – 1no
11. Ln key set – 1no
12. Bearing puller -1no
13. Sprit level indicator – 1no
14. Measuring tape 15 mtrs – 1no
15. Electrical Crimping tool – 185sqmm -1no
16. Testing lamp – 1no
17. Bicycle – 1no for ARCI internal patrolling / coordination
18. Adjustable spanners set – 1set (min four different sizes)
19. Monkey spanners set – 1set (min three different sizes)
20. Nose plier – 2nos
21. Drill machine – 1nos
22. Industrial Knifes – 3nos
23. Tester – 2nos (electrician)
24. Electrical hand gloves – 1set
25. Alluminum ladders will be supplied (2Nos) by ARCI. Same should be returnable after completion of contract in good condition.
26. Any other tools and tackles required for smooth operation of AMC contract from time to time provided items should be in working condition & latest calibrated.
27. Torch light -4 Batteries type :- 2nos
28. Furniture to be deployed – 1no executive table, 1no non - executive table & 6nos of sitting chairs.

### **Safety personal protective equipment (PPE)**

Safety shoes, Helmets, Safety belts, Goggles, Gloves, Ear plug etc.

# **ANNEXURE – IV**

**Bill of quantities  
with  
Technical specifications for AMC  
of Pump House  
at  
ARCI, Hyd**

## Technical Specifications for Price schedule / BOQ

<b>ITEM DESCRIPTION</b>	
Name of the work: <b>Annual Manning, Operation &amp; Maintenance Contract of Pump House</b>	
<b>Annexure IV – Pump House BOQ - Technical</b>	

Sl.no	Item Code	Technical Description
1.	305001041	<p><b>AMC (monthly O&amp;M Charges):</b></p> <ol style="list-style-type: none"> <li>1. The contractor should quote the lump sum price per month for entire scope of work as per tender document for deploying competent following minimum manpower considering the following points               <ol style="list-style-type: none"> <li>a) Required competent manpower.</li> <li>b) Tools &amp; tackles.</li> <li>c) Excluding spares, accessories and consumables items, which will be supplied by ARCI.</li> <li>d) Taxes, duties, services charges, bonus for holidays working and all statutory payments (i.e. ESI, PF &amp; Insurance should be shown separately).</li> </ol> </li> <li>2. Tentative minimum competent manpower requirement during contract               <ol style="list-style-type: none"> <li>a) Total manpower: - 8 nos on 16Hrs x 7 days in a week (in a day two shifts + one general shift).</li> <li>b) Manpower to be deputed per shift:                   <ul style="list-style-type: none"> <li>• 1No Supervisor + 1No Electrician + 1No Helper in General shift</li> <li>• 1no Fitter + 1no Plumber in I<sup>st</sup> &amp; II<sup>nd</sup> shift</li> <li>• 1no Plumber will be leave reserve or stand by</li> </ul> </li> </ol> </li> </ol>

		c) In General from Monday to Friday two shifts + General shift will be operated and Saturday and Sunday general shift will be operated to take maintenance job. The actual operating conditions will depend on actual at that time requirements of pump house.
2	305001043	Deployment of <b>1no Plumber</b> per shift to carryout duties as per ARCI tender document
3	305001044	Deployment of <b>1no Fitter</b> per shift to carryout duties as per ARCI tender document
4	305001045	Deployment of <b>1no Electrician</b> per shift to carryout duties as per ARCI tender document
5	305001046	Deployment of <b>1no Helper</b> per shift to carryout duties as per ARCI tender document
6	305001047	Mechanized cleaning of <b>Over Head Tank of capacity 225KL</b> (Two compartments 150KL + 75KL) 1.Cleaning of the walls and ceiling of the tanks with high pressure rotary jet for removal of dirt and alage 2. Removal of dirty water and sludge with special sludge pump 3. Next stage the remaining dirt is to be removed completely with specially designed industrial vaccum pump. 4. The next important process treatment is to be done for walls, ceiling, roof with anti bacterial agents (which is Biodegradable and Eco friendly in nature). 5. Finally ultra violet radiation treatment is to be done to kill suspended or floating bacteria. 6. The above works should be carried out by competent firms who are in the similar business for last five years and produce the documentary evidence.
7	305001048	Mechanized cleaning of <b>Under Ground Sump of capacity 909KL</b> 1.Cleaning of the walls and ceiling of the tanks with high pressure rotary jet for removal of dirt and alage

		<p>2. Removal of dirty water and sludge with special sludge pump</p> <p>3. Next stage the remaining dirt is to be removed completely with specially designed industrial vacuum pump.</p> <p>4. The next important process treatment is to be done for walls, ceiling, roof with anti bacterial agents ( which is Biodegradable and Eco friendly in nature).</p> <p>5. Finally ultra violet radiation treatment is to be done to kill suspended or floating bacteria.</p> <p>6. The above works should be carried out by competent firms who are in the similar business for last five years and produce the documentary evidence.</p>
8	305001049	<p>Mechanized cleaning of <b>Under Ground Sump of capacity 150KL</b></p> <p>1.Cleaning of the walls and ceiling of the tanks with high pressure rotary jet for removal of dirt and algae</p> <p>2. Removal of dirty water and sludge with special sludge pump</p> <p>3. Next stage the remaining dirt is to be removed completely with specially designed industrial vacuum pump.</p> <p>4. The next important process treatment is to be done for walls, ceiling, roof with anti bacterial agents ( which is Biodegradable and Eco friendly in nature).</p> <p>5. Finally ultra violet radiation treatment is to be done to kill suspended or floating bacteria.</p> <p>6. The above works should be carried out by competent firms who are in the similar business for last five years and produce the documentary evidence.</p>
9	305001050	<p>Mechanized cleaning of <b>Under Ground Sump of capacity 100KL</b> (at CLPM &amp; Nano Centre)</p> <p>1.Cleaning of the walls and ceiling of the tanks with high pressure rotary jet for removal of dirt and algae</p> <p>2. Removal of dirty water and sludge with special sludge pump</p> <p>3. Next stage the remaining dirt is to be removed completely with specially designed industrial vacuum pump.</p> <p>4. The next important process treatment is to be done for walls, ceiling, roof with anti</p>

		<p>bacterial agents (which is Biodegradable and Eco friendly in nature).</p> <p>5. Finally ultra violet radiation treatment is to be done to kill suspended or floating bacteria.</p> <p>6. The above works should be carried out by competent firms who are in the similar business for last five years and produce the documentary evidence.</p>
10	305001051	<p>Mechanized cleaning of <b>Sintex Tank of capacity 500 Ltrs</b> located at buildings over head.</p> <p>1. Cleaning of the walls and ceiling of the tanks with high pressure rotary jet for removal of dirt and alage</p> <p>2. Removal of dirty water and sludge with special sludge pump</p> <p>3. Next stage the remaining dirt is to be removed completely with specially designed industrial vaccum pump.</p> <p>4. The next important process treatment is to be done for walls, ceiling, roof with anti bacterial agents (which is Biodegradable and Eco friendly in nature).</p> <p>5. Finally ultra violet radiation treatment is to be done to kill suspended or floating bacteria.</p> <p>6. The above works should be carried out by competent firms who are in the similar business for last five years and produce the documentary evidence.</p>
11	305001052	<p>Mechanized cleaning of <b>Sintex Tank of capacity 1000 Ltrs</b> located at buildings over head.</p> <p>1. Cleaning of the walls and ceiling of the tanks with high pressure rotary jet for removal of dirt and alage</p> <p>2. Removal of dirty water and sludge with special sludge pump</p> <p>3. Next stage the remaining dirt is to be removed completely with specially designed industrial vaccum pump.</p> <p>4. The next important process treatment is to be done for walls, ceiling, roof with anti bacterial agents (which is Biodegradable and Eco friendly in nature).</p> <p>5. Finally ultra violet radiation treatment is to be done to kill suspended or floating bacteria.</p> <p>6. The above works should be carried out by competent firms who are in the similar business for last five years and produce the documentary evidence.</p>



12	305001053	<p>Mechanized cleaning of <b>Sintex Tank of capacity 2000 Ltrs</b> located at buildings over head.</p> <ol style="list-style-type: none"> <li>1. Cleaning of the walls and ceiling of the tanks with high pressure rotary jet for removal of dirt and algae</li> <li>2. Removal of dirty water and sludge with special sludge pump</li> <li>3. Next stage the remaining dirt is to be removed completely with specially designed industrial vacuum pump.</li> <li>4. The next important process treatment is to be done for walls, ceiling, roof with anti bacterial agents (which is Biodegradable and Eco friendly in nature).</li> <li>5. Finally ultra violet radiation treatment is to be done to kill suspended or floating bacteria.</li> <li>6. The above works should be carried out by competent firms who are in the similar business for last five years and produce the documentary evidence.</li> </ol>
13	128001018	<p>Supply of <b>50MM Ball Valve</b> (Zoloto make) including fixing material  Note: Installation will be done by Pump house AMC staff.</p>
14	128001019	<p>Supply of <b>25MM Ball Valve</b> (Audco make) including fixing material  Note: Installation will be done by Pump house AMC staff.</p>
15	128001020	<p>Supply of <b>50MM Ball Valve</b> (Audco make) including fixing material  Note: Installation will be done by Pump house AMC staff.</p>
16	128001004	<p>Supply of <b>12MM Ball Valve</b> (Zoloto make) including fixing material  Note: Installation will be done by Pump house AMC staff.</p>
17	128001005	<p>Supply of <b>25MM Ball Valve</b> (Zoloto make) including fixing material  Note: Installation will be done by Pump house AMC staff.</p>
18	123001001	<p>Supply of <b>Sintex Tank - 500 LTRS</b> (Sintex Make) along with inlet &amp; outlet GI complete accessories (HB make) class-B type  Note: Installation will be done by Pump House AMC staff.</p>
19	123001002	<p>Supply of <b>Sintex Tank - 1000 LTRS</b> (Sintex Make) along with inlet &amp; outlet GI complete accessories (HB make) class-B type</p>

		Note: Installation will be done by Pump House AMC staff.
20	305001160	Earth work excavation in all kinds of soil such as red BC, ordinary gravel and hand gravelly soils, soft disintegrated rock etc. as directed by dept. officers including all lead and lifts and depositing the same on bank etc. complete for pipe line trenches. After work completion refilling the pipe line trenches with use full soils complying with standard specifications, including breaking clods watering, tamping, ramming and all leads and lifts labour charges etc complete earth work.
21	128001006	Supply of Pressmatic Tap along with standard accessories <b>Pillar Cock Auto Closing System</b> Jaquar Make -Chrome Plated CAT NO: PRS-031 Installation will be done by Pump House AMC staff.
22	128001007	Supply of Pressmatic Tap along with standard accessories <b>Bib Cock Auto Closing System</b> Jaquar Make -Chrome Plated CAT NO: PRS-043 Installation will be done by Pump House AMC staff.
23	128001008	Supply of Pressmatic Tap along with standard accessories <b>Angle Valve Auto Closing System for Urinals</b> Jaquar Make -Chrome Plated CAT NO: PRS-077 Installation will be done by Pump House AMC staff.
24	128001009	Supply of following item along with standard accessories <b>Waste Coupling 32mm Size Full Thread</b> Jaquar Make -Chrome Plated CAT NO: ALD-709 Installation will be done by Pump House AMC staff.

25	128001010	Supply of Continental - Full Turn Fittings along with standard accessories <b>Pillar Cock</b> Jaquar Make -Chrome Plated CAT NO: CON-011 Installation will be done by Pump House AMC staff.
26	128001011	Supply of Continental - Full Turn Fittings along with standard accessories <b>Bib Cock With Flange</b> Jaquar Make -Chrome Plated CAT NO: CON-047 Installation will be done by Pump House AMC staff.
27	128001012	Supply of Continental - Full Turn Fittings along with standard accessories <b>Angular Stop Cock With Wall Flange</b> Jaquar Make -Chrome Plated CAT NO: CON-059 Installation will be done by Pump House AMC staff.
28	128001013	Supply of Continental - Full Turn Fittings along with standard accessories <b>Long Body Bib Cock With Wall Flange</b> Jaquar Make -Chrome Plated CAT NO: CON-107 Installation will be done by Pump House AMC staff.
29	128001014	Supply of Continental - Full Turn Fittings along with standard accessories <b>Swan Neck Tap with Round Spout (Left hand knob operation)</b> Jaquar Make -Chrome Plated CAT NO: CON-123 Installation will be done by Pump House AMC staff.
30	128001015	Supply of Continental - Full Turn Fittings along with standard accessories <b>Swan Neck Tap with Round Spout (Right hand knob operation)</b>

		Jaquar Make -Chrome Plated CAT NO: CON-127 Installation will be done by Pump House AMC staff.
31	305001161	Supply and delivery of 300mm dia MS ERW pipe as per IS:1239, Class 'C' pipe plain ended with a length of 1.0mts fabricated with 10mm thick MS plate, cost of MS plate fabrication charges, coloring with epoxy on both sides and conveyance to work site etc. complete. Make: Tata / Jindal
32	305001162	Supply and delivery of 250mm dia MS ERW pipe as per IS:1239, Class 'C' pipe plain ended with a length of 1.0mts fabricated with 10mm thick MS plate, cost of MS plate fabrication charges, coloring with epoxy on both sides and conveyance to work site etc. complete. Make: Tata / Jindal
33	305001163	Supply and delivery of 150mm dia MS ERW pipe as per IS:1239, Class 'C' pipe plain ended with a length of 1.0mts fabricated with 10mm thick MS plate, cost of MS plate fabrication charges, coloring with epoxy on both sides and conveyance to work site etc. complete. Make: Tata / Jindal
34	305001164	Supply and delivery of 100mm dia MS ERW pipe as per IS:1239, Class 'C' pipe plain ended with a length of 1.0mts fabricated with 10mm thick MS plate, cost of MS plate fabrication charges, coloring with epoxy on both sides and conveyance to work site etc. complete. Make: Tata / Jindal
35	305001165	Supply and delivery of 65mm dia MS ERW pipe as per IS:1239, Class 'C' pipe plain ended with a length of 1.0mts fabricated with 10mm thick MS plate, cost of MS plate fabrication charges, coloring with epoxy on both sides and conveyance to work site etc. complete. Make: Tata / Jindal

36	305001166	Supply and delivery of 300mm dia MS bend 90° ERW pipe as per IS:1239, Class 'C' fabricated with 10mm thick MS plate, cost of MS plate fabrication charges, coloring with epoxy on both sides and conveyance to work site etc. complete. Make: Tata / Jindal
37	305001167	Supply and delivery of 250mm dia MS bend 90° ERW pipe as per IS:1239, Class 'C' fabricated with 10mm thick MS plate, cost of MS plate fabrication charges, coloring with epoxy on both sides and conveyance to work site etc. complete. Make: Tata / Jindal
38	305001168	Supply and delivery of 150mm dia MS bend 90° ERW pipe as per IS:1239, Class 'C' fabricated with 10mm thick MS plate, cost of MS plate fabrication charges, coloring with epoxy on both sides and conveyance to work site etc. complete. Make: Tata / Jindal
39	305001169	Supply and delivery of 100mm dia MS bend 90° ERW pipe as per IS:1239, Class 'C' fabricated with 10mm thick MS plate, cost of MS plate fabrication charges, coloring with epoxy on both sides and conveyance to work site etc. complete. Make: Tata / Jindal
40	305001170	Supply and delivery of 65mm dia MS bend 90° ERW pipe as per IS:1239, Class 'C' fabricated with 10mm thick MS plate, cost of MS plate fabrication charges, coloring with epoxy on both sides and conveyance to work site etc. complete. Make: Tata / Jindal
41	305001171	Supply and delivery of MS reducer 300x250mmdia with a length of 0.5mt fabricated with 10mm thick MS plate. Cost of MS plate and its fabrication, coloring with epoxy on both sides and conveyance to work site etc. complete. Make: Tata / Jindal
42	305001173	Jointing of 300mm dia MS pipe with spot welding hire charges of generator, welding machine, transportation charges to work site, cost of electrodes, labour charges incidental and operational charges etc. complete.

43	305001174	Jointing of 250mm dia MS pipe with spot welding hire charges of generator, welding machine, transportation charges to work site, cost of electrodes, labour charges incidental and operational charges etc. complete.
44	305001175	Jointing of 150mm dia MS pipe with spot welding hire charges of generator, welding machine, transportation charges to work site, cost of electrodes, labour charges incidental and operational charges etc. complete.
45	305001176	Jointing of 100mm dia MS pipe with spot welding hire charges of generator, welding machine, transportation charges to work site, cost of electrodes, labour charges incidental and operational charges etc. complete.
46	305001177	Laying CC(1:2:4) prop using 6 to 20mm guage metal including cost of all materials labour charges, curing etc complete.
47	128001023	Supply of <b>Sintex Tank - 2000 LTRS</b> (Sintex Make) along with inlet & outlet GI complete accessories(HB make) class-B type Note: Installation will be done by Piump House AMC staff.
48	128001024	Supply of <b>Sintex Tank - 5000 LTRS</b> (Sintex Make) along with inlet & outlet GI complete accessories(HB make) class-B type Note: Installation will be done by Piump House AMC staff.
49	128001025	Supply of <b>25MM GI pipe</b> class-B type (Tata make) including all accessories (HB make) such as T,elbows,bends,unions,nipples,couplings,double adaptors,reducers with installation materials. Note:Erection will be done by Pump house AMC manpower, Hence contractor had to quote for supply items.
50	128001026	Supply of <b>50MM GI pipe</b> class-B type (Tata make) including all accessories (HB make) such as T,elbows,bends,unions,nipples,couplings,double adaptors,reducers with installation materials. Note:Erection will be done by Pump house AMC manpower, Hence contractor had to quote for supply items.

**Note: No compensation will be paid for non operation of the above items during AMC period**

1. The contractor should quote the lump sum price for entire scope of work for deploying.
  - a) Required competent manpower
  - b) Tools & tackles.
  - c) Excluding consumables items will be supplied by ARCI.
  - d) Taxes, duties, services charges, bonus for holiday working, leaves and all statutory payments i.e. ESI,PF & Insurance should be shown separately.

**TENTATIVE MINIMUM COMPETENT MAN POWER REQUIREMENT DURING CONTRACT**

Position / Post	Qualification	Minimum Experience	Allocation of man power		
			1 <sup>st</sup> Shift	2 <sup>nd</sup> Shift	Gen Shift
Over all In-charge	BE / Diploma Mech	10 years	---	---	1 no
Plumber	ITI	5 years	1no	1no	1no leave reserve or stand by
Fitter	ITI	5 years	1no	1no	
Electrician	ITI	5 years			1no
Helper	SSC	5 years			1no
<b>TOTAL MANPOWER</b>			<b>8 nos</b>		

# **ANNEXURE – V**

**Price Bid  
for  
Bill of Quantities  
Without  
Technical specifications for AMC  
of pump house  
at  
ARCI, Hyd**



## PRICE BID FOR BILL OF QUANTITIES

<b>BILL OF QUANTITIES</b>							
Name of the work: <b>Annual Manning, Operation &amp; Maintenance Contract of Pump House</b>							
<b>Annexure V – Pump House BOQ – Price to be given here</b>							
<b>Sl. No</b>	<b>Item Code</b>	<b>Technical Description</b>	<b>Units</b>	<b>Qty</b>	<b>Rate(Rs)</b>	<b>GST</b>	<b>Amount in Rs (Amount in words)</b>
1	305001041	AMC of Pump House (monthly O&M Charges)	Months	12			
2	305001043	1no Plumber per shift	No	1			
3	305001044	1no Fitter per shift	No	1			
4	305001045	1no Electrician per shift	No	1			
5	305001046	1no Helper	No	1			
6	305001047	Mechanized cleaning and disinfection of over head tank (OHT) of 25mts height 225KL Capacity (150KL + 75KL )	Ltr	1			
7	305001048	Mechanized cleaning and disinfection of under ground sumps of 909KL main sump	Ltr	1			
8	305001049	. Mechanized cleaning	Ltr	1			

		and disinfection of under ground cooling sump of 150KL					
9	305001050	Mechanized cleaning and disinfection of under ground sumps of 100KL at CLPM and Nano Centre.	Ltr	1			
10	305001051	Mechanized cleaning and disinfection of building sintex tank of 500Ltrs capacity	No	1			
11	305001052	Mechanized cleaning and disinfection of building sintex tank of 1000Ltrs capacity	No	1			
12	305001053	Mechanized cleaning and disinfection of building sintex tank of 2000Ltrs capacity	No	1			
13	128001018	Supply of <b>50MM Ball Valve</b> (Zoloto make)	No	1			
14	128001019	Supply of <b>25MM Ball Valve</b> (Audco make)	No	1			
15	128001020	Supply of <b>50MM Ball</b>	No	1			

		<b>Valve</b> (Audco make)					
16	128001004	Supply of <b>12MM Ball Valve</b> (Zoloto make)	No	1			
17	128001005	Supply of <b>25MM Ball Valve</b> (Zoloto make)	No	1			
18	123001001	Supply of <b>Sintex Tank - 500 LTRS</b> (Sintex Make)	No	1			
19	123001002	Supply of <b>Sintex Tank - 1000 LTRS</b> (Sintex Make)	No	1			
20	305001160	Earth work excavation	Cu.m	1			
21	128001006	Pillar Cock Auto Closing System	NO	1			
22	128001007	Bib Cock Auto Closing System	No	1			
23	128001008	Angle Valve Auto Closing System for Urinals	No	1			
24	128001009	Waste Coupling 32mm Size Full Thread	No	1			
25	128001010	Pillar Cock	No	1			
26	128001011	Bib Cock With Flange	No	1			
27	128001012	Angular Stop Cock With Wall Flange	No	1			
28	128001013	Long Body Bib Cock	No	1			

		With Wall Flange					
29	128001014	Swan Neck Tap with Round Spout	No	1			
30	128001015	Swan Neck Tap with Round Spout (Right hand knob operation)	No	1			
31	305001161	Supply and delivery of 300mm dia MS pipe	Mtrs	1			
32	305001162	Supply and delivery of 250mm dia MS pipe	Mtrs	1			
33	305001163	Supply and delivery of 150mm dia MS pipe	Mtrs	1			
34	305001164	Supply and delivery of 100mm dia MS pipe	Mtrs	1			
35	305001165	Supply and delivery of 65mm dia MS pipe	Mtrs	1			
36	305001166	Supply and delivery of 300mm dia MS bend	No	1			
37	305001167	Supply and delivery of 250mm dia MS bend	No	1			
38	305001168	Supply and delivery of 150mm dia MS bend	No	1			
39	305001169	Supply and delivery of 100mm dia MS bend	No	1			
40	305001170	Supply and delivery of 65mm dia MS bend	No	1			
41	305001171	Supply and delivery of	No	1			

		MS reducer 300x250mmdia					
42	305001173	Jointing of 300mm dia MS pipe	Job	1			
43	305001174	Jointing of 250mm dia MS pipe	Job	1			
44	305001175	Jointing of 150mm dia MS pipe	Job	1			
45	305001176	Jointing of 100mm dia MS pipe	Job	1			
46	305001177	Laying CC(1:2:4)	Cu.m	1			
47	128001023	Supply of Sintex Tank - 2000 LTRS (Sintex Make)	No	1			
48	128001024	Supply of Sintex Tank - 5000 LTRS (Sintex Make)	No	1			
49	128001025	Supply of 25MM GI pipe class-B type (Tata make)	Mtrs	1			
50	128001026	Supply of 50MM GI pipe class-B type (Tata make)	Mtrs	1			