



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

INVITATION TO TENDER

FOR

UP GRADATION OF PURIFIED WATER GENERATION & DISTRIBUTION SYSTEM

Tender Document No.- GIA-010
Tender Document Cost Rs. 1000./-

4,Jun.- 2013



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

INDEX-SHEET

Sr. No.	Description	Page No.
1	Site Data	2
2	Tender Form	3
3	Notice Inviting Tender	5
4	Instructions to Tenderer	8
5	Water Looping System- Contract Conditions	14
6	Design Basis	26
7	Bill of Quantity	29
8	Treatment Scheme	32
9	List of Make	41
10	Price schedule	45
11	Annexures I&II- Drawings	



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

1.0 SITE DATA

1. OWNERS / PURCHASERS : **M/s. RAJASTHAN DRUGS & PHARMACEUTICALS LTD.**
Road No. 12, VKI Area,
JAIPUR – 302 013
2. PROJECT TITLE : Up gradation of purified water generation & distribution system for Formulation Unit.
3. PROJECT SITE : JAIPUR
4. NEAREST RAILWAY STATION: JAIPUR
5. NEAREST AIRPORT : Sanganer, JAIPUR
6. CONDITIONS :
- TEMPERATURE
- SU : DB –110°F / WB- 75°F/RH 20%
- MO : DB –95°F / WB- 78°F/RH 48%
- WI : DB – 46°F / WB- 41°F/RH 65%



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

TENDER FORM



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

2.0 TENDER FORM

M/s. RAJASTHAN DRUGS & PHARMACEUTICALS LTD
Road No. 12, VKI Area,
JAIPUR- 302013

Subject: Up gradation of purified water generation & distribution system

Dear Sirs,

I / We the undersigned have carefully gone through and clearly understood the Tender Drawings and Tender Document comprising the Tender Form, Notice to Contractors, Condition of Contract, Specifications and Schedule of probable Quantities prepared by you.

I / We hereby undertake to execute and complete the whole work at the respective rates at which I/ We have quoted for. I/We have quoted for all the items of the probable Bill of Quantities and at which rates the total value of the work specified amount to **Rs.**

—

I / We further agree to complete the work included in the said Schedule of Quantities within _____ months from the date of Letter of Intent issued to commence the same.

I / We agree not to employ any Sub- Contractors or procure items other than those that may be approved by you.

I/ We agree to pay all Government (State and Central) Taxes and Duties, Insurance and any other statutory dues that may be prevailing and payable from time to time, on such items for which the same are leviable and rates quoted by me/ us are inclusive of the same.

NAME OF THE COMPANY

AUTHORISED SIGNATORY
NAME AND SEAL OF THE COMPANY.

DATE:



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

NOTICE INVITING TENDERS



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

3.0 NOTICE INVITING TENDERS.

Sealed Items Rate tenders in two bids system are invited in the prescribed form by **RAJASTHAN DRUG & PHARMACEUTICALS LTD. JAIPUR**, for the work detailed below. Contractors, who have experience in carrying out Up gradation of Purified Water Generation & Distribution System work of PharmaFactories, shall be given preference.

Name of work	Estimated value of work (in lacs of Rs.)	Earnest Money (in lacsRs.)	Time of completion	Tender Cost
Up gradation of Purified Water Generation & Distribution System	Rs.60 Lacs	1.00 lacs	4 months	Rs. 1000/-

The tender documents, Instructions to Tenders, Bill of quantities, Conditions of Contract, Technical Specifications can be collected from the office of **RAJASTHAN DRUG & PHARMACEUTICALS LTD. JAIPUR**, on payment of Cost of Tender Documents (Rs.1000/- Rs. One Thousand only) in cash or demand draft drawn in favor of the Company payable at Jaipur.

The Tenderer is required to deposit Rs.1.00 lacs as Earnest Money along with the tender in shape of Bank draft drawn in favor of M/s **RAJASTHAN DRUG & PHARMACEUTICALS LTD.** Payable at **JAIPUR**, (Branch of any Public Sector Bank) The earnest money will be refunded to the unsuccessful tenderers without any interest / Bank Commission/Collection charges subject to the relevant provisions in the tender Document.

Dear Sirs,

M/s. RAJASTHAN DRUGS & PHARMACEUTICALS LTD propose to set up a new facility for manufacture of various pharmaceutical formulations to meet WHO GMP standards. The facility is located at: JAIPUR

The completed bid (Technical & Financial) in all respects with all its accompaniments shall be enclosed in two different sealed envelopes and hand delivered or sent by courier so as to reach on or before 27/06/2013 Up to 3.PM. Only the Technical bid shall be opened on 27/06/2013 at 4.PM. Bidders who qualify in the technical bid shall be intimated the date & time of opening the financial bid. The representatives of bidders may remain present at the time of opening of tenders.

The tender documents should be filled in English and all the entries must be made by hand and written in ink.

Initials of tenderer must attest all erasures and alteration made while filling the tender. Overwriting of figures is not permitted.

The tenderer must obtain for himself on his own responsibility and at his own expense all the information which may be necessary for the purpose of filling this tender and for entering into a contract for execution of the same and must examine



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

the drawings and inspect the site of the works and acquaint himself with all the local conditions and matters pertaining thereto.

In case where the same item of work is mentioned at one or more places in the Schedule of Quantities, the lowest of the rates quoted by the contractor for the item shall be taken for the payment of this item.

The quantities contained in the Schedule are only approximate. The work as actually carried out and measured from time to time will be considered for payments subject to the terms and conditions of the contract.

Time being the essence of this Contract; the work should be completed in 4 months. From the date of the letter of the intent issued to the contractor to commence the work. The successful contractor will have to submit a bar chart for various items of work to be done so that the work gets completed within the stipulated time.

If the successful contractor fails to complete the work by the scheduled date of completion or within any sanctioned extension, liquidated damages at the rate of 0.5% per cent of the contract value per week of delay subject to a maximum of 5% of the total contract value shall be recovered from the contractors' bills.

The Company does not bind itself to accept the lowest bid and reserves the right to accept or reject any or all tenders either in whole or in part without assigning any reason for doing so. **The contract may be awarded either in part or full at the sole discretion of the Company.**

The offer should be valid for 60 days from the due date of submission.

Factory Manager



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

INSTRUCTIONS TO TENDERERS



4.0 INSTRUCTIONS TO TENDERERS

01. TENDERER TO BE CONVERSANT WITH THE DOCUMENTS

The tenderer is expected to read all the documents hereof and be conversant with their contents and when tenders are signed it will be understood and inferred that all the documents have been read and understood. Any difficulty experienced in interpreting the documents may be communicated to the Company in writing, and, should any written clarification be required it will be made available to all tenderers. No extra cost will be entertained because of the tenderers mistakes, ignorance or misinterpretation of drawing and documents.

02. ADDENDA

Addenda may be issued prior to the date set for submission of tenders to clarify the documents or to effect modifications in the Up gradation of Purified Water Generation & Distribution System contract terms or design of the project.

03. VISIT TO SITE

The tenderers should visit the site and satisfy themselves as to the accessibility thereof, the local conditions, the construction and occupation of the building, the full extent and nature of the operations, the conditions affecting the supply of labor, carriage, carting, unloading, storage and safe custody of materials, scaffolding, tackle and tools, supply of light, power and water for the execution of the Up gradation of Purified Water Generation & Distribution System Contract generally. Claims on grounds of want of knowledge in such respects or otherwise shall not be entertained. Same.

04. WORKING DRAWINGS

The tenderer is to include for the preparation of all working drawings (shop drawings), which will be required for the proper execution of the works. All working drawings shall be submitted to the Company for approval before executing the work.

05. FINAL AS INSTALLED DRAWINGS

After completion of the installation, the Up gradation of Purified Water Generation & Distribution System Contractor is to provide tracings and five copies each of drawings showing runs and locations of all the plant, equipment, controls, piping, electric wiring, etc. giving all necessary details of the works as actually installed.



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

06. INCLUSIONS AND INCIDENTALS

The Up gradation of Purified Water Generation & Distribution System Contractor will include for providing materials and incidentals, which may be inferred from drawings and / or specifications, in order to ensure a complete and perfect installation although, same may not be expressly indicated or mentioned.

07. ELIGIBILITY CRITERIA

- Bidder should have minimum Five years experience in executing similar jobs in Pharma formulation unit.
- Bidder should have executed minimum 40 lacs (Single project) of Up gradation of Purified Water Generation & Distribution System preferably in Pharma formulation unit during the last calendar year.

08. DOCUMENTS TO BE SUBMITTED ALONG WITH TECHNICAL BID

- (a) Demand draft as earnest money (interest free) deposit of Rs. 1.00 lacs (One lacs only) through D.D. in favor of Rajasthan Drugs & b Pharmaceutical Limited payable at Jaipur.
- (b) Last Three years balance sheet, income-tax returns of last three years.
- (c) BIO DATA of Proprietors or Directors and Key Persons of the Firm.
- (d) Number of projects executed during last 3 years, Monetary value of each project, Address of the companies or firms where these projects have been executed, name and contact telephone numbers of the dealing persons there of.
- (e) List of the performance testing equipment's available
- (f) Projects in hand and anticipated projects during current year.
- (g) Deviation sheet

All these documents must be submitted along with technical bid. Non submission of any of above documents may lead to the rejection of the tender.

09. Documents to be submitted along with financial bid:

- (a) Tender form as per the format given in section 2
- (b) Bill of Quantities with rates (BOQ).
- (c) Payment terms

11. The Up gradation of Purified Water Generation & Distribution System Contractor shall execute the works with materials in accordance with the specifications or if not specified, in accordance with the latest Indian / International Standards.

The specifications are to be read in conjunction with the latest relevant Indian / International Standards & Specifications. Where differences or contradictions appear to arise between the Indian & International specifications these differences or contradictions shall be referred to the Company.

10. Special Conditions:

1. On award of tender the bidder has to submit the DQ document along with a complete program in the form of a bar chart indicating the time taken for various



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

activities from award of the tender up to the final commissioning and validation of entire system.

2. The final water at outlet after treatment shall be tested as current USP (US PharmaCopoeia). The bidder shall stand guarantee for one year from the date of validation & commissioning of the plant. The bidder shall give 3 years extended warranty for the servicing of the plant.
3. The sensors and the measuring devices should be provided with the calibration certificates with the traceability. Filters and membrane should be provided with integrity test certificate.
4. The pipes should be provided with grit rating certificate.
5. Welding material and welding machine should be provided with certificates and their traceability.
6. The complete installation should conform to good engineering practices and the quality of water should conform to current US pharmacopoeia/ WHO cGMP.
7. Our requirements are indicative key deliverables only. Supplier has to ensure the design, the system as per actual site condition to meet out required parameters like quality and output capacity etc.
8. In principles no water stagnation should be there, the system should be a close loop, sanitizable, sterilizable by steam, heat exchanger should be through jackets, welding quality(boroscopy should ensure for minimum 10 & then every 10th) etc.
9. The vendor should give the traceability of SS 3316L and other wettable parts.
10. Above features are the key feature which has to comply minimum, which is not an exhaustive list.

11. TRAINING OF COMPANY'S STAFF

The Up gradation of Purified Water Generation & Distribution System Contractor shall make suitable arrangements at his own cost to train the operational and maintenance staff of the Company during the installation and maintenance periods according to the conditions of the Up gradation of Purified Water Generation & Distribution System Contract.

12. INSPECTION

The Company reserves the right to arrange inspection of all the items prior to their shipment through an inspector appointed by it. The inspection charges will be borne by the Company unless otherwise stated. The tenderer need not, unless otherwise stated, make any provision for the Inspector's fee in his tender. The Company shall, however, not pay anything extra to the Up gradation of Purified Water Generation & Distribution System Contractor or his suppliers for any expense in connection with the inspection.

13. PRICES

The Tenderer shall give a firm price for the supply of all materials (free delivery at site) and the cost of fabrication, installation, testing etc. to complete the works in working order in all respects.

The Up gradation of Purified Water Generation & Distribution System Contractor shall be responsible, without additional charge to the Company, for a maintenance period of 12 calendar months from the date of issue of completion certificate by the Company.



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

The Up gradation of Purified Water Generation & Distribution System Contractor shall during the maintenance period, service the complete plant at the time of start-up and shut down. The Up gradation of Purified Water Generation & Distribution System Contractor shall also be responsible for rendering any special services during the maintenance period.

The Tenderer shall give a firm price for the supply of all materials (free delivery at site), construction and other cost for demolition & dismantling works wherever required, etc. indicated in the BOQ to complete the works in all respects.

14. PAYMENTS

The tenderer should quote their payment terms. However, the same shall be finalized with mutual discussion at the time of negotiation.

15. TAXES & DUTIES

The bidder has to quote for the price inclusive of all taxes & duties applicable as on date, including local & central sales tax (against C Form), Excise duty, any applicable Import duty, Service tax, etc. Company will furnish you necessary C Forms as per CST Act. However the break-up of such taxes & duty shall have to be furnished.

16. INSURANCE AND INDEMNIFICATION

Bidders shall take adequate comprehensive insurance to cover all Up gradation of Purified Water Generation & Distribution System equipment's, materials, installation, personnel's, etc. till the completion of the project and indemnify RDPL against any damage, loss, claims or liabilities, 3rd party damages, etc. that may arise due to any cause whatsoever till the entire Up gradation of Purified Water Generation & Distribution System on completion is taken over by the Company. Cost of insurance is to be inclusive in your order value. Thus, the bidder will hold RDPL free from any liability in this regard and also shall keep RDPL harmless and indemnified.

17. ACCEPTANCE

Promptly after receiving of all tenders, the Company will undertake a detailed study of the technical bids & only bidders who qualify in the technical bid, their financial bid shall be opened. The date of financial bid opening shall be communicated to the bidders who qualify in the technical bid. The bidders who fail to qualify in the technical bid, their financial bid shall not be opened. The Company does not bind itself to award the Up gradation of Purified Water Generation & Distribution System Contract to the lowest or to any tenderer but will take into careful consideration the tenderer's price and such other factors as are deemed to be applicable for awarding the contract.

18. RIGHTS

The Company reserves the right to re-call the tender or, reject any or all tenders and to waive any formalities in the tenders received (such as deviation in the use and presentation of the specified tender documents and forms), if it appears to be in his best interest to do so.

The tender documents and drawings are the exclusive property of the issuing authority and are subject to be recalled and shall not be used, lent, copied or reproduced by anybody without their written permission.



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

19. EQUIPMENT AND MATERIAL

The Up gradation of Purified Water Generation & Distribution System Contractor shall give written guarantee that all the equipment and material supplied under the Up gradation of Purified Water Generation & Distribution System Contract shall be brand new from the manufacturer and that, the materials and workmanship will be of best class. It will further be guaranteed that these shall be installed in first class manner that it will be complete for operation and nothing shall be omitted by way of labor and material required to make it so, even though not specifically shown or mentioned in the specifications or in the drawings.

The Up gradation of Purified Water Generation & Distribution System Contractor shall execute the works with the materials in accordance with the specifications. All materials, which in the opinion of the Company are not sound or do not meet with the above conditions, shall be immediately dismantled and/or removed from site by the Up gradation of Purified Water Generation & Distribution System Contractor and replaced by appropriate approved materials without claim of any extra payment.

Note: -A) Please furnish the list of clients using the appliances quoted in the tender by giving their complete address phone Nos. and the name of contact person.

B) For any technical clarifications, bidders may e-mail- mukesh.sharma@rdpl-india.in

For, Rajasthan Drugs & Pharmaceutical Ltd.,

Factory Manager

ABOVE TERMS ARE ACCEPTED

(Signature of Tenderer /Supplier)
with rubber stamp

Date: -



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

UP GRADATION OF PURIFIED WATER GENERATION & DISTRIBUTION SYSTEM -CONTRACT CONDITIONS



5.0 SYSTEM-CONTRACT CONDITIONS

1. EXTENT OF Up gradation of Purified Water Generation & Distribution System CONTRACT

The Up gradation of Purified Water Generation & Distribution System Contract comprises the design, manufacture, supply, fabrication, installation, completion, testing, commissioning, validation (DQ,IQ,OQ), documentation and maintenance of complete Up gradation of Purified Water Generation & Distribution System works including supply of all materials, plant and equipment as per requirements of design contained in the Up gradation of Purified Water Generation & Distribution System Contract, drawings, specifications and documents.

2. Up gradation of Purified Water Generation & Distribution System CONTRACT DOCUMENTS

The Up gradation of Purified Water Generation & Distribution System Contract shall be read, construed and interpreted in English language and shall operate in conformity with the laws of India and within the jurisdiction of the courts in Jaipur.

Several documents forming the Up gradation of Purified Water Generation & Distribution System Contract shall be taken as self explanatory, but in case of ambiguities or discrepancies, the same shall be explained and interpreted by the Company who shall thereupon issue to the Contractor, instructions directing the manner, in which the Up gradation of Purified Water Generation & Distribution System works are to be carried out.

One set of the Up gradation of Purified Water Generation & Distribution System Design Drawings and two sets of the approved Up gradation of Purified Water Generation & Distribution System shop drawings shall be kept by the Up gradation of Purified Water Generation & Distribution System Contractor on the site and the same shall at all reasonable times be available for inspection and use by the Company/Company's Representative and by any other person authorised by the Company.

The Up gradation of Purified Water Generation & Distribution System Contractor shall prepare at his own expense any shop drawing/s which will be required for the proper execution of the works.

None of the documents herein before mentioned shall be used by either of the parties hereto for any purpose other than this Up gradation of Purified Water Generation & Distribution System Contract and neither shall divulge or use, except for the purpose of this Up gradation of Purified Water Generation & Distribution System Contract, any information in the schedule of prices and rates.

The Up gradation of Purified Water Generation & Distribution System Contractor shall retain in his office all necessary drawings; data and calculations for the Up gradation of Purified Water Generation & Distribution System work in a methodical manner and shall produce them whenever required by the Company.



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

3. GENERAL OBLIGATIONS

The Up gradation of Purified Water Generation & Distribution System Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender and the rates and prices shall cover all his obligations under the Up gradation of Purified Water Generation & Distribution System Contract and all matters and things necessary for proper completion and maintenance of the Upgradation of Purified Water Generation & Distribution System works.

4. PROGRAMME OF WORKS

The Up gradation of Purified Water Generation & Distribution System Contractor shall, within ten days after the acceptance of his tender, submit in writing, for approval of the Company, a program of works coordinated with the construction program, in the form of a bar chart showing the order of procedure and method in which he proposes to carry out the Up gradation of Purified Water Generation & Distribution System works along with design qualification (DQ) in soft and hard copy.

The program shall cover the full period of works from the date of the acceptance of the tender to the completion of installation, testing, and validation and handing over of the complete plant in working order. The program shall cover the sequence of work for all items showing separately in each case the time allowed for manufacturing, shipment, fabrication, delivery to site, installation, testing, commissioning and starting up.

The program submitted for the Up gradation of Purified Water Generation & Distribution System Contractor may be amended if any part of it is not to the satisfaction of the Company and it shall not be carried into effect until it has been approved (in an amended form, if necessary) by Company.

If the Company under the provision of this clause require the Up gradation of Purified Water Generation & Distribution System Contractor to amend his program of works, the Up gradation of Purified Water Generation & Distribution System Contractor shall not thereby be entitled to any adjustment in the Up gradation of Purified Water Generation & Distribution System Contract price or to any extension of time.

The submission to or approval by the Company of such program or the furnishing of such particulars or information shall not relieve the Up gradation of Purified Water Generation & Distribution System Contractor of any of his duties or responsibilities under the Up gradation of Purified Water Generation & Distribution System Contract.

5. DELAYS AND EXTENSION OF TIME

If in the opinion of the RDPL the works are delayed or are expected to be delayed because of any of the following reasons, the completion period may be extended by such period as may be mutually agreed upon:

- i. Force majeure (Including war, hostilities, invasion, act of foreign enemies, military or usurped power or civil war);



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

- ii. By reason of any exceptionally inclement weather (if acceptable to the Company), flood, tornadoes, earthquakes and landslides;
- iii. By reason of proceedings taken or threatened by or dispute with adjoining or neighboring owners or public authorities arising otherwise, through the Contractor's own default.
- iv. By the work's or delays of other contractors or tradesman engaged or nominated by the owner and not referred to in the Schedule of Quantities and / or specifications.
- v. By reason of civil riot, commotion, local combination of workmen or strike or lockout affecting any of the works / trades.
- vi. By reason of owner instructions.

If and whenever it becomes reasonably apparent to the Contractor that the progress of work is being, or is likely to be delayed, due to reasons not attributable to them, they shall forthwith give written notice to the Owner explaining the circumstances including the cause or causes of such delay. Where the cause or causes of delay refers to any agency other than the Contractor, a copy of such notice shall be sent to them also.

6. PENALTY / DAMAGES FOR DELAY

If the Up gradation of Purified Water Generation & Distribution System Contractor fails to complete the works within the schedule agreed upon, or within such extensions that may be granted to him pursuant to Clause 05 above, then the Company will be at liberty to deduct from the Contractor's bills, by way of penalty a sum equivalent to 1/2 % of the value of the contract for each week's delay subject to a maximum of 5% of the value of the contract. The Company may without prejudice to any other method of recovery deduct the amount of such damages from moneys in his hands due to or which may become due to the Up gradation of unified Water Generation & Distribution System Contractor from his obligation to complete the works or from any other of his obligation and liabilities under the Up gradation of Purified Water Generation & Distribution System Contract.

7. Up gradation of Purified Water Generation & Distribution System CONTRACTOR'S SUPERINTENDENCE

The Up gradation of Purified Water Generation & Distribution System Contractor shall give or provide all necessary superintendence for the proper fulfilling of the Up gradation of Purified Water Generation & Distribution System Contractor's obligations under the Up gradation of Purified Water Generation & Distribution System Contract.

A competent and duly authorized representative of the Up gradation of Purified Water Generation & Distribution System Contractor and who shall have full authority to act for and bind the Up gradation of Purified Water Generation & Distribution System Contractor, is to be constantly at the site of works and shall give his whole time to the



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

superintendence of the Up gradation of Purified Water Generation & Distribution System works.

The representative shall receive on behalf of the Up gradation of Purified Water Generation & Distribution System Contractor directions and instructions from the Company.

The Up gradation of Purified Water Generation & Distribution System Contractor shall provide and employ on the site for the purpose or in connection with the Up gradation of Purified Water Generation & Distribution System Contract, only such Engineers, Supervisors, Technical Assistants as are skilled and experienced in their respective callings and are competent to give proper supervision to the work they are required to supervise, and, such skilled, semi – skilled and Un-skilled labor as are necessary for the proper and timely performance of the Up gradation of Purified Water Generation & Distribution System Contract.

The Company shall be at liberty to object to and require the Up gradation of Purified Water Generation & Distribution System Contractor to remove forthwith from the site any persons employed by the Contractor or any Sub – Contractor who in the opinion of the Company misconducts himself or is incompetent or negligent in the proper performance of his duties or whose employment is otherwise considered by the Company to be undesirable. Such person shall not be again employed for the purpose of or in connection with the Up gradation of Purified Water Generation & Distribution System Contract without the written permission of the Company. Any person so removed shall be replaced immediately by a competent substitute approved by the Company.

8. WATCH & CARE OF WORKS

Except as otherwise specifically provided in the Up gradation of Purified Water Generation & Distribution System Contract the Up gradation of Purified Water Generation & Distribution System Contractor shall make all arrangements for the security and protection of persons and property or for the safety or convenience of persons as is necessary or as required by the Company.

From the commencement to the completion of the works, the Up gradation of Purified Water Generation & Distribution System Contractor shall take full responsibility for the care of all temporary works, materials, constructional plant and other things on the site. In case any damage, loss or injury shall happen to the works or any such materials or constructional plant or other things from any cause whatsoever (save and except the excepted risks like out – break of war or act of invasion), he shall at his own cost, replace, repair and make good the same. It is to be ensured that at completion, the works shall be in good condition and in conformity in every respect with the requirements of the Up gradation of Purified Water Generation & Distribution System Contract.

The Up gradation of Purified Water Generation & Distribution System Contractor shall indemnify and keep indemnified the Company against all losses and claims for injuries or damage to any person or any property whatsoever which may arise out of or in consequence of the performance of the Up gradation of Purified Water Generation



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

& Distribution System Contract and against all claims, demands, proceedings, damages, costs, charges and expenses, whatsoever in respect of or in relation thereto.

9. COMPLIANCE WITH STATUTES, REGULATIONS, ETC.

Up gradation of Purified Water Generation & Distribution System Contractor shall conform in all respects with the provisions of all requirements, local laws, regulations or orders or other laws for the time being in force including all regulations and bylaws of local or other duly constituted authority which may be applicable during the pendency of the contract. He shall indemnify RDPL against all penalties and liabilities of any kind and in any form.

10. SUPPLY OF PLANT, MATERIALS AND LABOUR

Except where otherwise specified the Up gradation of Purified Water Generation & Distribution System Contractor shall at his own expense and risk, supply and provide all the constructional plant, temporary works, scaffolding materials both for temporary and for permanent work, labor (including the supervision thereof), transport to and from the site and in and about the site and other things of every kind required for the purpose of or in connection with the Up gradation of Purified Water Generation & Distribution System Contract.

11. CO – ORDINATION WITH OTHER CONTRACTORS

The Up gradation of Purified Water Generation & Distribution System Contractor shall arrange and administer the Up gradation of Purified Water Generation & Distribution System Contract and the program of work incorporating the program of building construction and other services. He shall coordinate the work with other contractors.

12. WORKS NOT INCLUDED AND FACILITIES PROVIDED BY OTHERS

The Company will not be under any obligation to provide equipment, stores, office, etc. to the Up gradation of Purified Water Generation & Distribution System Contractor for the Up gradation of Purified Water Generation & Distribution System works installation.

However, Company shall at his own discretion arrange open space at site for Up gradation of Purified Water Generation & Distribution System Contractor to have his office, stores and workshop constructed by himself. The Company shall also arrange the following facilities or works to him for proper execution of Up gradation of Purified Water Generation & Distribution System works.

13. GENERAL

The Company will provide at his cost temporary water and electrical points within a reasonable distance from the Up gradation of Purified Water Generation & Distribution System Contractor's place of Work. The Up gradation of Purified Water Generation & Distribution System Contractor shall arrange his own distribution of facilities for lighting, power for tools and welding equipment and water for testing from these points. The Company will provide temporary lighting for safety and security only.



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

The Up gradation of Purified Water Generation & Distribution System Contractor will be responsible for the provision and erection of all scaffolding, etc. required by him during the course of the Up gradation of Purified Water Generation & Distribution System works. However, the erected scaffolding, if not in use of any other contractor the same can be used by the Up gradation of Purified Water Generation & Distribution System Contractor with the written permission of the relevant contractor/ Company.

The Up gradation of Purified Water Generation & Distribution System Contractor will be responsible for the removal and transport of all his rubbish, wrappings, waste and unused materials, etc. every day to a place to be designated by the Company.

The Up gradation of Purified Water Generation & Distribution System Contractor will be responsible for those safety regulations, which, are directly under his control. The Up gradation of Purified Water Generation & Distribution System Contractor will be held responsible for his own safety regulations. Limited First Aid facilities may be provided on site by the Company and can be made available to the Up gradation of Purified Water Generation & Distribution System Contractor at cost.

Any damage caused by the Up gradation of Purified Water Generation & Distribution System Contractor to works of other trades, shall be the sole responsibility of the Up gradation of Purified Water Generation & Distribution System Contractor. He shall take full precautions to prevent such happenings.

14. LABOUR LAWS.

The bidder shall, in relation to the works executed under this contract, strictly comply with the provisions of all current labor laws and statutory amendments or additions thereof and any regulation or orders made there under affecting the works. Any liability arising out of engagement of any persons to execute the works under this contract by the Contractor and falling on the Company later on shall be liable to be paid by the contractor to compensate the Company adequately.

15. CERTIFICATE OF COMPLETION

The certificate of completion shall be given after validation of entire system and meeting all conditions and parameters as stated in the tender. No certificate of completion shall be given nor shall the work be considered to be complete until the Up gradation of Purified Water Generation & Distribution System Contractor shall have removed from the premises on which the work has been executed, all scaffolding, surplus materials and rubbish and cleaned off the dirt, from those parts of the building where the work has been executed or of which he may have had possession for the execution thereof, nor until the work shall have been measured and recorded by Company and checked by the Company which measurement shall be binding and conclusive for the Up gradation of Purified Water Generation & Distribution System Contractor. If the Up gradation of Purified Water Generation & Distribution System Contractor shall fail to comply with the requirements of this clause as to removal of scaffolding etc. and cleaning off the dirt on or before the date of completion of works, the Company may at the expense of the Up gradation of Purified Water Generation & Distribution System Contractor remove and dispose off such scaffolding, etc. and clean off such dirt as aforesaid and the Up



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

gradation of Purified Water Generation & Distribution System Contractor shall forthwith pay to the Company the amount of all expenses so incurred and the said amount shall be adjusted from the amount due to the Up gradation of Purified Water Generation & Distribution System Contractor from the Company and the Up gradation of Purified Water Generation & Distribution System Contractor shall have no claim in respect of such scaffolding and surplus materials as aforesaid.

16. (A) VARIATIONS

The Up gradation of Purified Water Generation & Distribution System Contractor shall not make any variation in the works except in accordance with a written variation order.

The Company may make any variation of the form, quality or any part thereof as he may think necessary and for that purposes, by a written variation order, may order the Up gradation of Purified Water Generation & Distribution System Contractor to do and the Up gradation of Purified Water Generation & Distribution System Contractor shall do any of the following :-

Increase or decrease the quantity of any Up gradation of Purified Water Generation & Distribution System items included in the Up gradation of Purified Water Generation & Distribution System Contract.

Omit any such items in up gradation of Purified Water Generation & Distribution System works.

Change the character or quality or kind of any item Up gradation of Purified Water Generation & Distribution System works.

Execute additional or substituted work of any kind necessary for the completion of the Up gradation of Purified Water Generation & Distribution System Works.

No variation order shall in any way vitiate or invalidate the Up gradation of Purified Water Generation & Distribution System Contract but shall be taken into account in ascertaining the Up gradation of Purified Water Generation & Distribution System Contract price.

For the removal of doubt, it is declared that any increase or decrease of the estimate quantities set out in the schedule of prices ascertained by measurement is not a variation within the meaning of this clause.

The Company shall determine what adjustment (if any) in the Up gradation of Purified Water Generation & Distribution System Contract price shall be made in respect of work done or omitted pursuant to a variation order. All such work shall be valued at the rates and prices set out in the schedules of prices and item rates if in the opinion of the Company the same shall be applicable. If the schedule of prices and item rates do not contain any rate or price applicable to such work, then suitable rates and prices based upon the rates and prices contained in the schedules of prices and item rates and based on the then prevailing market rates shall be agreed upon between the Company and Up gradation of Purified Water Generation & Distribution System Contractor.

17. PERFORMANCE BANK GUARANTEE

The Up gradation of Purified Water Generation & Distribution System Contractor shall submit a performance bank guarantee issued by a PSU Bank in favor of company for a value equivalent to 10% of the aggregate value of contract before the date of completion of the entire works as per contract awarded, to enable the company to have smooth and trouble free operation and running of the whole of Up gradation of Purified Water



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

Generation & Distribution System systems installations as agreed upon to its entire satisfaction with validity for at least one year from the date of certification of commissioning of the system.

18. General:

At the time of submission of invoices following documents need to be submitted for settlement of any claim as per the payment terms

- a. Invoices to be submitted in original plus two extra copies.
- b. Excise Gate passes for RDPL to be able to claim cenvat benefit as per cenvat rules.
- c. Copies of Challan's of materials received at site by the Officer-in-charge of RDPL duly certified as approved.

18.1 Special Conditions

- a. For all the excisable goods, RDPL will claim the Cenvat benefit. All the gate passes required under the provisions of Central Excise Rules and Cenvat Credit rules for the relevant items should be in the name of RDPL. In absence of any documents required for Cenvatcredit, no excise payments against the bills submitted by Up gradation of Purified Water Generation & Distribution System Contractor shall be made.
- b. The rate of excise duty and its value for each item should be indicated separately & will be one of the criteria for evaluating the tender.
- c. The rates of service tax wherever applicable & quantum included in the tender should be indicated separately. The quantum of VAT on item-wise basis, along with its rate should be indicated separately.

19. TRAINING OF COMPANY'S PERSONNEL

The Up gradation of Purified Water Generation & Distribution System Contractor shall make suitable arrangements at his own cost to train the operational and maintenance staff of the Company during the installation and maintenance period. The Up gradation of Purified Water Generation & Distribution System Contractor shall if so desired by the Company, also arrange training facilities at his manufacturers / supplier's offices and factories from whom the equipment and materials for the works are procured without any charge to the Company for the training facilities, except for salaries, traveling and living expenses of the Company's personnel which expenses shall be borne by the Company.

20. GUARANTEE

The Up gradation of Purified Water Generation & Distribution System Contractor shall give a guarantee for the complete installation against defective materials and faulty workmanship for a period of one year from the date of issue of certificate of virtual completion by the Company. The contractor should also offer comprehensive warranty on annual maintenance contract basis for an extended period of three years including calibration All defects of material or workmanship found in the installation during the period of guarantee/ maintenance shall be removed and defective items replaced or repaired by the Up gradation of Purified Water Generation & Distribution System Contractor without any additional cost to the Company.



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

In the event of any defect of material or workmanship occurring or being discovered during the period of guarantee / maintenance, the period shall continue until the cause of the defect has been discovered and remedied to the satisfaction of the Company.

21. DRAWINGS & INFORMATION TO BE SUPPLIED.

The bidder when preparing any detailed working drawing shall carefully check for all clearances, field conditions, and avoidance of any hindrance with architectural features and proper co-ordination with all other services of the project. Each working drawing submitted by the bidder shall include a certificate by the bidder that all related conditions on the site relevant to that particular installation have been checked and that no conflict exists. The Company may not approve any working drawing submitted by the Up gradation of Purified Water Generation & Distribution System Contractor without such a certificate.

Manufacturer's performance data, test certificates and shop drawings of all main items of the plant giving complete information regarding dimensions, materials and other details regarding the adequacy of the equipment to be supplied shall be submitted to the Company for approval along with DQ document .

All working drawings prepared in the required scale, correct and conforming with the Up gradation of Purified Water Generation & Distribution System Contract requirements, shall be submitted to the Company sufficiently in advance of actual requirements to allow ample time for checking and approval and no claim for extension of the Up gradation of Purified Water Generation & Distribution System Contract time will be considered by reasons of the Up gradation of Purified Water Generation & Distribution System Contractor failure to submit the correct drawings in time. The Up gradation of Purified Water Generation & Distribution System Contractor will submit 5 copies of final corrected drawings for approval out of which 2 duly approved copies would be returned to him.

The Up gradation of Purified Water Generation & Distribution System Contractor shall clearly point out the difference, if any between the details submitted and the requirements of the Up gradation of Purified Water Generation & Distribution System Contract in covering letters sent with the submitted documents and drawings. He should also give reasons for his request for substitution so that if substitutions are acceptable, necessary action may be taken for proper adjustment. The Up gradation of Purified Water Generation & Distribution System Contractor will not otherwise be relieved of his responsibility for executing the works in accordance with the terms of the Up gradation of Purified Water Generation & Distribution System Contract.

The Up gradation of Purified Water Generation & Distribution System Contractor shall supply five sets of, as fitted drawings and manufacturer's installation, commissioning, operation, services and maintenance manuals, technical catalogues and detail spare part manuals for the guidance of the Company's operators in operation, servicing and maintenance of the plant. One set shall be supplied to the Company for scrutiny and approval.

The approval by the Company for any submitted data, working drawings, performance curves, test certificates for any item, arrangement or layout shall not relieve the Up



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

gradation of Purified Water Generation & Distribution System Contractor from responsibility of error of any sort in the submitted data and working drawings.

22. NOTICES

Notices for the Company or the Contractor may be served personally or being left at or sent through courier to the last known address of the party to whom the same is to be given or in the case of the Contractor by being handed over to his representative at the works site.

23. TERMINATION OF CONTRACT BY THE COMPANY

If the contractor be adjudged as Insolvent or shall have an order for compulsory winding up made against it and if the Contractor is unable to show to the reasonable satisfaction of the Company that he is able to carry out and fulfil the contract and to give security thereof or has failed to commence the works, or has without sufficient and lawful excuse suspended the progress of work for 14 days after receiving written notice from the Company to proceed or has persistently neglected or defied Company instructions then the Company reserves his right to terminate the contract out rightly & protect all its interests.

24. SETTLEMENT OF DISPUTE (ARBITRATION)

All disputes and differences of any kind whatever arising out of or in connection with the contract or the carrying out of the works, whether during the progress of the works or after their completion and whether before or after the determination or breach of the contract, shall be referred to INTERNATIONAL CENTRE FOR ALTERNATIVE DISPUTE RESOLUTION having its office at plot no.6 ,vasantkunj institutional area , phase –ii ,New Delhi-110070 and its decision/ award shall be binding on both the parties.

25. DEFINITION & INTERPRETATION

In constructing the Up gradation of Purified Water Generation & Distribution System Contract, these conditions, Up gradation of Purified Water Generation & Distribution System Contract agreement and the interpretations of the following words and expressions shall have the meaning herein assigned to them except where the subject or context otherwise requires.

“**Company** means **M/s. RAJASTHAN DRUGS & PHARMACEUTICALS LTD** and includes their administrative and legal representative, assigns or successors.

“**Up gradation of Purified Water Generation & Distribution System Contractor**” means the tenderer whose tender has been accepted and who has been nominated by the Company and shall include his legal and personal representative (s), successors and permitted assigns.

“**Up gradation of Purified Water Generation & Distribution System Contract**” means the agreement contained in the Up gradation of Purified Water Generation & Distribution System Contract agreement and the documents set out in the Up gradation



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

of Purified Water Generation & Distribution System Contract agreement as forming part thereof.

“SITE” means the site or the Up gradation of Purified Water Generation & Distribution Systemworks and the lands, otherwise places buildings and erections thereon, under, in or through where the Up gradation of Purified Water Generation & Distribution Systemworks are to be executed or carried out and any other land (inclusively) as aforesaid allotted by the Company to the Up gradation of Purified Water Generation & Distribution System Contractor’s use.

“APPROVED FOR CONSTRUCTION” means approved in writing including subsequent written confirmation of previous oral approval.

“MONTH” means a Calendar month.

The singular includes the plural and vice versa. The masculine includes the feminine and vice versa. Words importing persons include firms, companies or other bodies corporate.

“TEMPORARY WORKS” means all temporary works of every kind required in or about the execution, completion or maintenance of Up gradation of Purified Water Generation & Distribution Systemworks.

“Up gradation of Purified Water Generation & Distribution SystemDRAWINGS” means the drawing & referred to in these specifications and any modification of such Up gradation of Purified Water Generation & Distribution Systemdrawings approved in writing by the Company and such other drawings as may from time to time be furnished or approved by the Company.

“CONSTRUCTIONAL PLANT“ means all appliances or things of whatsoever nature required in or about the execution, completion or maintenance of the Up gradation of Purified Water Generation & Distribution Systemworks or Temporary works but does not include materials or other things intended to form or forming part of the permanent works.



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

DESIGN BASIS



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

DESIGN BASIS

For Pretreatment System :--

**Opti
on 1 Option
 2**

Design flow rates			
DM Water System (Existing) (MGF - ACF - SAC - DG - SBA - MB - UV)	m ³ /hr	2	NA

For Generation System :--

Design flow rates			
MGF, Softener	m ³ /hr	0.9	1.1
Permeate of CSRO System	m ³ /hr	NA	0.8
Permeate of HSRO - EDI System	m ³ /hr	0.6	0.6
UV System	m ³ /hr	0.6	0.6

Sr. No.	Parameters	Unit	Design data (Analysis report of existing DM water)	Design data (Analysis report of raw water)
1	Source of feed water	NA	DM Water (From Mixed Bed Unit)	Borewell
2	Appearance	NA	Clear Colourless Liquid	Clear Colourless Liquid
3	Turbidity	NTU	Not Specified	Not Specified
4	Conductivity	µs/cm	2.7	526
5	Total dissolved solids	ppm	208	367
6	pH	NA	7.8	8.05
6	Total Suspended Solids	Mg/Lit	12	6
Dissolved Impurities - Cations				
7	Calcium as Ca	ppm	28.06	38.7
8	Magnesium as CaCO ₃	ppm	30.02	33.9
9	Total hardness, as CaCO ₃	ppm	100.1	236
Dissolved Impurities - Anions				
10	M. Alkalinity as CaCO ₃	ppm	50.04	120



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

11	P. Alkalinity as CaCO ₃	ppm	Nil	30
12	Chloride as Cl	ppm	14.2	29.03
13	Sulphate as SO ₄	ppm	Nil	10
14	Reactive Silica	ppm	Nil	Not Specified
Dissolved Impurities - Others				
15	Iron as Fe	ppm	Nil	0.022
Microbial / Biological Impurities				
16	Total organic carbon	ppb	745	<1660
17	Number of bacteria present per ml of sample at 37deg.C.	cfu/ml	2475	2890
18	Number of bacteria present per ml of sample at 20-22 deg.C.	cfu/ml	2425	4520
19	Most probable coli form bacilli per 100 ml of sample (MPN)	cfu/100ml	Absent	Absent
20	Most probable pseudomonas present per 100 ml of sample (MPN)	cfu/ml	Absent	Absent
21	Most probable E COLI present per 100 ml of sample (MPN)	cfu/100ml	Absent	Absent
22	salmonella spp		Absent	Absent
23	staphylococcus aureus		Absent	Absent



TENDER DOCUMENT FOR
UP GRADATION OF PURIFIED WATER GENERATION
& DISTRIBUTION SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

BILL OF QUANTITIES

&

PRICE SCHEDULE



TENDER DOCUMENT FOR
WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

DESIGN BASIS for distribution loops

S.N.	Description	P.W. Loop (Mother)	P.W. Loop (Betalactum)
1	Storage Tank	5000 Ltrs, jacketed & Insulated Storage Tank. Contact Parts SS316L Non Contact Parts SS304 Internally Finish < 0.5 Microns Ra Externally Matt finish. Design Pr.,Shell side -Internal 1 kg/cm ² g & External 3 kg/cm ²	200 Ltrs Insulated Storage Tank, with Top / bottom torispherical dished ends Contact Parts SS316L Non Contact Parts SS304 Internally Finish < 0.5 Microns Ra Externally Matt finish. With Electrical Ceramic Band Heater
2	Tank Inlet flow	600 LPH	200 LPH
3	User point	18 Manual + 1 auto	2 Manual
4	Peak Load	2m ³ /hr	0.2 m ³ /hr
5	Line size	1" OD	3/4" OD
6	Length of piping	550 Mtrs	120 Mtrs
7	Total piping elevation	15 mwc	15 mwc
8	Return line velocity	1.2 M/Sec	1.2 M/Sec
9	Return line Head	15 MWC.	15 MWC.
10	Pump Capacity	Vendor to decide	Vendor to decide
11	Loop Temp working	Ambient	Ambient
12	Loop Temp Sanitisation	85 ^o c	85 ^o c



TREATMENT SCHEME (Option 1)

	EQUIPMENT	
A	Purified Water Generation System	
I	Pretreatment System	
>>	Raw Water storage tank	Existing System (RDPL's Scope)
>>	Hypochlorite & SMBS Dosing System	
>>	Multi Grade Sand Filter	
>>	Activated Carbon Filter	
>>	Strong Acid Cation Unit	
>>	Degasser Tower & Degassed Water Tank	
>>	Strong Base Anion	
>>	Mixed Bed Unit	
>>	Hypochlorite & SMBS Dosing System	
>>	MB Water Storage Tank	
>>	Ultraviolet System	
II	PW Generation System	
	MGF	
	Softener	
>>	Reverse Osmosis - EDI System (Hot water Sanitizable)	
>>	Ultraviolet System	
>>	Chemical Cleaning System	
>>	Common control panel SS304 for generation and mother loop with PLC and HMI 5.5" touch screen.	



Distribution System		
>>	PW Storage & Distribution skid	
I	Mother loop	
1	Purified Water Storage Tank	
2	Distribution / Circulating Pump	
3	UV Sterilizer Unit	
I.a	PW Loop (Betalactum)	
1	Purified Water Storage Tank	
2	Distribution / Circulating Pump	To distribute / circulate the purified water in loop
3	UV Sterilizer Unit	To control microbial growth in purified water distribution system

TREATMENT SCHEME (Option 2)

	EQUIPMENT	PURPOSE
A	Purified Water Generation System	
I	Pretreatment System	
1	Raw Water storage tank	RDPL scope
2	MGF	
3	Softener	
4	Reverse Osmosis (Chemical Sanitizable)	
II	PW Generation System	
1	Reverse Osmosis - EDI System (Hot water Sanitizable)	
2	Ultraviolet System	
3	Chemical Cleaning System	
4	Common control panel SS304 for generation and mother loop with PLC and HMI 5.5" touch screen.	
Distribution System		
>>	PW Storage & Distribution skid	
I	Mother loop	
1	Purified Water Storage Tank	



TENDER DOCUMENT FOR
WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

2	Distribution / Circulating Pump	
3	UV Sterilizer Unit	
I.a	PW Loop (Betalactum)	
1	Purified Water Storage Tank	
2	Distribution / Circulating Pump	
3	UV Sterilizer Unit	

Sr.	Component	Size / Capacity	Tag No.	Specification	Qty.	Unit
II	Purified Water Distribution System (5 KL Storage Tank System) Peak Load : 2 m3/hr					
A	Storage Tank Assembly					
1	Storage tank	5000 Ltrs		Jacketed & Insulated Storage Tank. Contact Parts SS316L Non Contact Parts SS304 Internally Finish < 0.5 Microns Ra Externally Matt finish. (Design Pr.,Shell side -Internal 1 kg/cm ² g & External 3 kg/cm ² , Jacket side-3 Kg/cm ²	1	No
2	Spray ball Assembly	3/4" NB		Rotary Capsule Type, MOC SS 316L,BSP (F)	1	No.
3	Capacitance type level Transmitter			MOC - SS 316L,with TC End Connector,Power supply 24 VDC,having 4-20mA analog output,operating temp.-50° C To 70° C,IP 65,Accuracy 0.1 %	1	No
4	Temperature Sensor (Top mounted)			PT 100, 3 Wire, Contact - MOC SS 316, Top Mounted, Range - 0 -150°C	1	No
5	Temperature Transmitter			PT100 to 4-20 ma head mounted transmitter	1	No
6	Compound pressure gauge	(-1 To + 9) Bar		Diaphragm Type, Glycerin Filled, 4" Dial Size, Wetted Part Material SS 316L, Case MOC- SS 304	1	No



TENDER DOCUMENT FOR
WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

7	Vent filter cartridge	0.2 Micron		10" Long , Polypropylene , Hydro phobic, PTFE cartridge, code 7 sanitary type	1	No.
8	Vent Filter Housing			MOC - SS 316L,Electrical Vent Filter Stat.	1	No.
11	Steam Safety valve For Steam jacket	1/2" NB		MOC - CS , BSPT End Connection	1	No.
12	Syphon type pressure gauge	1/2" NB		Syphon Type, 0 TO 7 Kg/cm2, 2.5" Dial Size, MOC - SS 304, BSPT end connection	1	No.
13	Vent Valve	1/2" NB		Manual Ball Valve, SS304 Construction, Threaded end connection	1	No.
14	On/off Steam valve	1"NB		Pneumatically Angular Piston, Single Acting Actuated With Air TO Open ,PTFE Seal, MOC - SS304,Flange End ASA # 150, 24 vdc solenoid 3/2,	1	Nos.
15	Steam Trap	1/2" NB		Manual Ball Float type, MOC - CI, Operating Pressure-10.5Kg/cm2 And Operating Temperature - 180°C	1	No.
16	Manual Ball Valve	1/2" NB		Manual Ball Valve, SS304 Construction, Threaded end connection	3	Nos.
16	Manual Diaphragm Valve for Tank Drain	1" OD		SS 316L Body, Plastic bonnet, Plastic Hand Wheel ,EPDM Diaphragm TC End Connection. (Invest Casting)	1	No.
B	Distribution Skid					
17	Distribution pump	5 m3/hr @ 73 mwc		Centrifugal Monoblock pump , SS 316L Impeller and Casing, Mechanical Seal : CAR V/S SC	2	Nos.
18	Pump casing drain valve	1/2" OD		SS 316L Body, Plastic bonnet, Plastic Hand Wheel, EPDM Diaphragm TC End Connection. (Invest Casting)	2	Nos.
19	UV Sterilizer	5 m3/hr		With Intensity Monitor & Hour Meter. , SS316L Housing & UV Tube, TC End	1	No.
Instruments						



TENDER DOCUMENT FOR
WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

20	Pressure gauge	0 To 10 Kg/cm ²		Glycerin Filled, Diaphragm Type, Contact MOC SS 316, 4" Dial, Bourdon Type , TC End Connection.	1	No.
21	Temperature Sensor	0 TO 150°C		RTD Sensor, 50 mm Long TC end.	1	No.
22	Temperature Transmitter			PT100 to 4-20 ma head mounted transmitter.	1	No
23	Conductivity Transmitter	0.01 Cell constant, Range - 0 To 10μ S/cm		4-20 mA Loop Powered Transmitter, Field Mounted, Sensor MOC SS316L, TC End.	1	No
24	Flow transmitter	For 1" OD Line (1/2" NB)		Vortex Type, SS 316, 4-20 mA Loop Powered, 1" NB, Wafer end connection with TC convertor	1	No
	Valves					
25	Manual Diaphragm valve For Pump suction valve	2" OD		SS 316L Body, SS bonnet , SS Hand Wheel ,EPDM Diaphragm TC End Connection. (Invest Casting)	1	No.
26	Manual Diaphragm valve For Pump discharge valve	1" OD		SS 316L Body, Plastic bonnet, Plastic Hand Wheel ,EPDM Diaphragm TC End Connection. (Invest Casting)	1	No.
27	Flow divertor valve	1.0" OD		Pneumatically Actuated Divertor Valve With Air TO Open Contact Parts SS 316, TC end Connection, PTFE Seat, 3/2 Solenoid With 1/4" Pneumatic fitting min. 3 Nos., Electric Coil - 24VDC, Single Acting Actuator.	1	No.
28	Sampling Valve	8 mm		MOC - SS 316 , TC end connection.	2	Nos.
29	Sampling Valve	8 mm		MOC - SS 316 , TC end connection.	1	No.



TENDER DOCUMENT FOR
WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

30	Back Pressure Valve	1" OD		Self Actuated, MOC SS 316, Silicon Seal Material, Max Temp - 120°C, Set Pressure 1 To 3 kg/cm ² , TC End Connection , Spring to be Electro polished.	1	No.
31	Manual Diaphragm Valve for Tank Return line	1.0" OD		SS 316L Body, Plastic bonnet , Plastic Hand Wheel ,EPDM Diaphragm TC End Connection. (Invest Casting)	1	No.
33	Interconnected skid piping	- - -		Interconnected Piping comprising of Tank outlet line to Pump suction & Pump discharge to Loop with Instrument, Bend, Elbow. Eg. Tees, Reducing Tees, Reducers, TC Unions and Pipe Holding Clamp Assembly etc.	1	Lot
34	Base frame			MOC SS 304	1	No.
35	Control Panel & wiring			Common with Generation system	1	No
36	VFD of PW Loop			Suitable for Pump	1	No



TENDER DOCUMENT FOR WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

Sr.	Component	Size / Capacity	Specification	Qty.	Unit
A	Purified Water Distribution System (0.2 KL Storage Tank System) Peak Load : .0.2m³/hr				
1	Storage Tank	200 Ltrs	Vertical, Insulated Storage Tank, with Top / bottom torispherical dished ends Contact Parts SS316L Non Contact Parts SS304 Internally Finish < 0.5 Microns Ra Externally Matt finish. Design Condition: Internal - Atmospheric	1	No
2	Electrical Heater	18 KW	Ceramic Band Heater	1	No
3	Spray Ball	3/4" NB	Rotary Capsule Type, MOC SS 316L, BSP (F)	1	Nos.
38	Capacitance type level Transmitter	Over all length from Tc-1000mm	MOC - SS 316L, End Connection 1.5"o.d. Tc liner	1	No
5	Compound Pressure Gauge	-1 To +9 Bar	Diaphragm Type, Glycerin Filled, 4" Dial Size, Case MOC- SS 304	1	No
6	Vent filter cartridge	0.2 Micron	5" Long , Polypropylene , Hydro phobic, PTFE cartridge, code 7 sanitary type	1	No.
7	Vent Filter Housing		MOC - SS 316L, Electrical Traced	1	No.
8	Temperature Sensor (Top mounted)	Over all Length= 1100mm	PT 100, 3 Wire, Contact - MOC SS 316, Top Mounted, Range - 0 -150°C	1	No.
9	Temperature Transmitter		PT100 to 4-20 ma head mounted transmitter	1	No.
B	Skid				
10	Distribution pump	1.05 m ³ /hr @ 31 MWC	Centrifugal Monoblock pump , SS 316L Impeller and Casing, Mechanical Seal : CAR V/S SC	2	Nos.



TENDER DOCUMENT FOR WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

11	Pump casing drain valve	1/2" OD	SS 316L Body, Plastic bonnet, Plastic Hand Wheel EPDM Diaphragm TC End Connection. (Invest Casting)	2	Nos.
12	VFD	3.0 HP	Variable Frequency Drive	1	No.
13	Ultra-Violet System	1.05 m ³ /hr	Ultra Violet System with Intensity Monitor and Hour Meter	1	No.
14	Manual Diaphragm Valve for Tank Drain	3/4" OD	SS 316L Body, Plastic bonnet, Plastic Hand Wheel EPDM Diaphragm TC End Connection. (Invest Casting)	1	No.
15	Manual Diaphragm valve For Pump suction valve	2" OD	SS 316L Body, Plastic bonnet, Plastic Hand Wheel EPDM Diaphragm TC End Connection. (Invest Casting)	1	No.
39 16	Manual Diaphragm valve For Pump discharge valve	3/4" OD	SS 316L Body, Plastic bonnet, Plastic Hand Wheel EPDM Diaphragm TC End Connection. (Invest Casting)	1	No.
17	Manual Diaphragm valve For Tank Return Line	3/4" OD	SS 316L Body, Plastic bonnet, Plastic Hand Wheel with EPDM Diaphragm TC End Connection. (Invest Casting)	1	No.
18	Flow diverter valve	3/4" OD	Pneumatically Actuated Divertor Valve With Air TO Open Contact Parts SS 316, TC end Connection, PTFE Seat, 3/2 Solenoid With 1/4" Pneumatic fitting min. 3 Nos., Electric Coil - 24VDC, Single Acting Actuator.	1	Nos.
19	Sampling Valve	8 mm	MOC - SS 316 , TC end connection	3	No.
	Instruments				
20	Pressure Gauge	0 To 10 Kg/cm ²	Glycerin Filled, Diaphragm Type, Casing MOC SS 304, 4" Dial, Bourdon Type , TC End Connection	1	Nos.



TENDER DOCUMENT FOR WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

21	Flow Transmitter	Suitable for ¾" OD Tube	Vortex Type Flow Transmitter, 4-20 mA Output	1	No.
22	Temperature Sensor (return line)	0-150 deg C. Over all length form TC:- 50mm	RTD Sensor, 50 mm Long TC end.	1	No
23	Temperature Transmitter.		Transmitter: PT100 to 4-20 mA Head Mounted Transmitter.	1	No.
24	Conductivity Transmitter	0.01 Cell constant, Range - 0 To 10µ S/cm.	4-20 mA Loop Powered Transmitter, Field Mounted, Sensor MOC SS316L, TC End.	1	Nos.
40 25	ICPW		Interconnected Piping comprising of Tank outlet line to Pump suction & Pump discharge to Loop with Instrument, Bend, and Elbow. Eg : Tees, Reducing Tees, Reducers, TC Unions and Pipe Holding Clamp Assembly etc.	1	Lot
26	Base Frame		SS 304 Skid	1	No.
27	Control Panel (For Betalactum PW Dist. System)		SS 304 Panel Box with Electricals & Instruments	1	
27.1	PLC			1	No.
27.2	HMI			1	No.



TENDER DOCUMENT FOR
WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013



TENDER DOCUMENT FOR
WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

LIST OF MOC

Sr.	Description	MOC
	Pre-treatment Section	
1	Skid Frame	MS Painted
2	Skid Piping	U-PVC
3	Interconnecting Piping	U-PVC
4	Centrifugal Horizontal Pump	SS 304 impeller with CI Casing
5	Valves	U-PVC
7	Storage / Dosing / Tanks	HDPE
	Generation System (RO-EDI - UV)	
1	Skid Frame	SS 304
2	Skid / Interconnecting Piping	SS 316L
3	Centrifugal Vertical /Horizontal Pumps	SS 316
4	Instruments	SS 316
5	Cartridge Housing	SS 316
6	Cartridge	PP
7	Valves	SS 316
8	Multipurpose Tank	SS 316
9	RO Pressure Tubes	SS 316
10	RO Membranes	CPA
11	UV Chamber	SS 316L
12	Control Panel for PW Generation & Dist. System	SS 304
	For Distribution System	
1	Skid Frame	SS 304
2	Interconnecting Piping and fittings	SS 316L
3	Pumps	SS 316L
4	Instruments	SS 316 / SS316L
5	Valves	SS 316L
6	Storage Tanks	
	Contact Parts	SS 316L
	Non Contact Parts	SS 304



TENDER DOCUMENT FOR
WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

LIST OF MAKES

Item	Manufacturer
Purified Water Generation System	
MGF / Softener FRP vessel	Structural
SS Tank	As per vendor
MCF Housing	As per vendor
Dosing Pumps	Prominent or equivalent
pH Transmitter	Forbes /Emerson / GF
Vertical Centrifugal Pumps	ITT Lowara / Grundfoss
Micron Cartridge	Pall / Meissner / Sartorius / Millipore
RO membranes	Dow / Hydranautics / GE (Osmonics) / Toray
RO Pressure Tube	As per vendor
EDI	Ionpure or eq.
SS tubes & fittings	Rath Gibson
SS Diaphragm Valves	Make of international repute
Float type Level Switch	Impulse / Spinks / Pune Techtrol
43 Capacitance Type Level Transmitter	Toshbro / Spinks / Pune Techtrol
Flow Transmitter	Burkert / E&H / Emerson
Pressure Gauges	Waree /Wika / Mass / GI
Pressure Switch	Indfoss / Switzer / Waree / Orion / GI / Mass
Flow Indicator	Krohne Marshall
Conductivity Transmitter	Forbes /Emerson / Metler Toledo / E&H
Temperature Transmitter	Radix / E&H
UV System	Alfa
PLC & MMI	ABB / AB



TENDER DOCUMENT FOR
WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

VFD	ABB / AB
Control Box	As per vendor
For Distribution System	
UV Sterilizer	Alfa
Centrifugal Pump	Alfa Laval
Cartridges	Meissner / Pall / Millipore / Sartorius
SS Tank	As per vendor
SS tubes & fittings	Rath Gibson
SS Diaphragm Valves	Make of international repute
Pressure Gauges	Waree /Wika / Mass / GI
Flow Transmitter	Emerson / Krohne Marshall / E&H
Conductivity Transmitters	Forbes Marshall / Emerson / Metler Toledo / E&H
Temperature sensor	Radix
Level Transmitter	Toshbro / Pune Techtrol /E&H
VFD	ABB / AB



TENDER DOCUMENT FOR WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013**ANEXXURE - P**

Sr.	Section	Item Description	Component	Size / Capacity	Specification	Qty.	Unit
I	Purified Water Distribution System Mother Loop						
		Variable Piping					
1			SS Tube	1.0 " OD	SS 316L Internal EP , External Matt Finished , 16SWG Sanitary tube	550	Mtrs.
2			Bend	1.0 " OD	MOC - SS316L Plain End	200	Nos.
3			Pipe holding Clamp Assembly	1.0 " OD	Pipe Holding Clamp, Hexagonal Nut with Anchor bolt and Support plate, MOC SS 304.	275	Nos.
4			TC clamp	1.0 " OD	MOC - SS304	125	Nos.
5			TC liner	1.0 " OD	MOC - SS316L	150	Nos.
6			TC gasket	1.0 " OD	MOC - Silicon	125	Nos.
7			Manual Zero Dead Leg Valve	1.0 " OD	SS 316L Body, Plastic bonnet , Plastic Hand Wheel , EPDM Diaphragm TC End Connection. (Invest Casting)	18	Nos.
8			Actuated Zero Dead Leg Valve	1.0 " OD	SS 316L Body, Plastic bonnet , Plastic Hand Wheel , EPDM Diaphragm TC End Connection. (Invest Casting)	1	Nos.



TENDER DOCUMENT FOR WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013**II Purified Water Distribution System (Betalactum)**

		Variable Piping				
1		SS Tube	3/4" OD	SS 316L Internal EP , External Matt Finished , 16SWG Sanitary tube	120	Mtr.
2		Bend	3/4" OD	MOC - SS316L Plain End	40	Nos.
3		Pipe holding Clamp Assembly	3/4" OD	Pipe Holding Clamp, Hexagonal Nut with Anchor bolt and Support plate, MOC SS 304.	60	Nos.
4		TC clamp	3/4" OD	MOC - SS304	16	Nos.
5		TC liner	3/4" OD	MOC - SS316L	28	Nos.
6		TC gasket	3/4" OD	MOC - Silicon	16	Nos.
46		Manual Zero Dead leg valve	3/4" OD	SS 316L Body, Plastic Bonnet , Plastic Hand Wheel, EPDM Diaphragm TC End.(Invest Casting)	2	Nos.



TENDER DOCUMENT FOR
WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

PRICE

Sr.	Module	Item Description	Total Amount in INR
For Supply			
I		Purified water Generation System (MGF-SF - HSRO-UV, Capacity – 0.6m³/hr)	
II		Purified water Storage & Distribution system (MOTHER LOOP	
A		Purified water Storage Tank & Assembly	
B		Purified water Distribution Skid	
C		Purified water Piping Variable (Scope as per Annexure - P)	
III		Purified water Storage & Distribution system (BETALACTUM)	
A		Purified water Storage Tank & Assembly	
B		Purified water Distribution Skid (Including PLC Based Control Panel)	
C		Purified water Piping Variable (Scope as per Annexure - P)	
Total Supply			-

47

Sr.	Description	Total Amount
For Installation		
IV	Installation Charges Breakup as per attached Annexure - E	
Total Installation		-
Total - Supply + Installation		-
OPTIONAL PRICES		
1	Purified water Generation System (MGF-SF - CSRO - HSRO-UV, Capacity – 0.6m³/hr)	



TENDER DOCUMENT FOR
WATER LOOPING SYSTEM

GIA-010
Version : 02
Date : 04/06/2013

Annexure – E

Sr.	Item Description	Size in Inch	Qty.	Unit	Rate per unit	Amount
A	Installation Charges					
	For Generation System					
			1	No.		
B	For Purified Water Distribution System (Mother loop)					
1	Laying of Pipes	1.0"	750	Mtrs.		
2	Orbital Welding		410	Dia.		
3	Supporting of Pipe(Supports only with Anchor Bolt)		275	Nos.		
4	Hydro Testing & Passivation		750	Mtrs.		
c	For Purified Water Distribution System (Betalactum)					
1	Laying of Pipes	3/4"	200	Mtrs.		
2	Orbital Welding		90	Dia.		
3	Supporting of Pipe(Supports only with Anchor Bolt)		60	Nos.		
4	Hydro Testing & Passivation		200	Mtrs.		
	10% Boroscopy (For Total no's of Piping Mentioned above)	---	1	Time		
5	Engineering Charges	---	1	Time		
48 6	Documentation Charges :alongwith DQ, IQ, OQ, SOP, Test Certificate and with as Built drawing.	---	1	Set		
7	Commissioning & Training	---	1	Time		