



University of Missouri (UM) Procurement

BID REQUEST NO.: 22041

TITLE: COOLING TOWER CLEANING

ISSUE DATE: OCTOBER 7, 2021

SOURCING CONTACT: WADE A. JADWIN

PHONE NO.: 573-341-4049

E-MAIL: jadwinw@mst.edu

BID DUE DATE: OCTOBER 28, 2021 AT 2:00 PM CT

MAILING INSTRUCTIONS: Print or type **Bid Request No. and Due Date** on the envelope. **Bids are to be contained in a sealed envelope and mailed or hand delivered to the address below by the due date and time noted above. FAXED OR E-MAILED BID RESPONSES WILL NOT BE CONSIDERED. The University assumes no responsibility for any bidder's on-time receipt at the designated location for bid opening.**

**RETURN BID TO: University of Missouri Procurement
Attention: Wade A. Jadwin – Strategic Sourcing Specialist
1201 North State Street – Suite G5C
Rolla, MO 65409**

You are invited to submit a bid on the items or services specified. All bids must be made on this form and shall be subject to the terms and conditions included herein. Bidder offers and agrees to furnish and deliver the items or perform the services upon which prices are quoted herein. Any quotations sent to the University of Missouri prior to this request for bid are void and will not be considered.

The bidder agrees the language of this bid document shall govern in the event of a conflict with supplier's bid response. The bidder further agrees that upon receipt of an authorized purchase order from the University of Missouri or when a Notice of Award is signed and issued by an authorized official of the University of Missouri, a binding contract shall exist between the bidder and The Curators of the University of Missouri.

If you have any questions regarding the RFB, please send them to:

Wade A. Jadwin – Strategic Sourcing Specialist
University of Missouri Procurement
1201 North State Street – Suite G5C
Rolla, MO 65409
jadwinw@mst.edu

All questions regarding the RFB must be received no later than Thursday, October 21, 2021 at 2:00 PM CT.

The University reserves the right to waive any informalities in Request for Bids and to reject any or all bids.

AUTHORIZED BIDDER REPRESENTATION

Authorized Signature	Date
Printed Name	Title
Company Name	
Mailing Address	
City, State, Zip	
Phone No.	Federal Employer ID No.
Fax No.	E-Mail Address
Number of calendar days delivery after receipt of order: _____	Payment Terms: _____ Note: Net 30 is default. Early pay discounts encouraged.
Select Payment Method: SUA ACH Check	
Circle one: Individual Partnership Corporation	
If a corporation, incorporated under the laws of the State of _____	
Licensed to do business in the State of Missouri? ___yes ___no	
Maintain a regular place of business in the State of Missouri? ___yes ___no	

This signature sheet must be returned with your bid.

BID REQUEST AND BID CONDITIONS

This Bid Request and Bid is made upon and subject to the following conditions, all of which are accepted by bidder. Upon acceptance by University, this Bid Request and Bid and the University Purchase Order issued thereon shall constitute the contract for furnishing the items described in the bid in strict conformity with the contract instruments.

- 1.** No oral explanation regarding the meaning of the specifications will be made, and no oral interpretation will be given before the award of the contract. If any person contemplating submitting a bid for this contract is in doubt as to the true meaning of any part of the specifications or any other proposed contract documents, they may submit to the University a written request for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed documents will be made by addendum duly issued or delivered to each person receiving a set of such documents. The University will not be responsible for any other explanation or interpretations of the proposed documents.
- 2.** The University reserves the right to reject any and all bids and to waive any informality in bids.
- 3.** Whenever the name of a manufacturer or vendor is mentioned herein and words "or equal" do not follow, it shall be deemed that the words "or equal" shall follow such designation unless the context specifies "no substitution". University assumes that items bid as equal are equal. University reserves the right to return at the bidder's expense all items that are furnished which are not acceptable as equals to items specified by the Bid Request and Specifications, and supplier agrees to replace such items with satisfactory items at the original bid price.
- 4.** Unless it is so noted on the bid it will be deemed that the article furnished is that designated. If the supplier proposes to furnish an item of a different manufacturer or supplier other than the one specified on the face hereof, the manufacturer or supplier of the substituted items shall be noted and complete descriptive literature describing the items to be substituted must accompany the bid.
- 5.** All items bid shall be new unless otherwise specified by the University.
- 6.** Bidder agrees to unconditionally guarantee all items bid upon against defects in material and workmanship for a period of one year from the date of acceptance by the University unless otherwise specified.
- 7.** Materials and services furnished the University are not subject to either Federal Excise Taxes or the Missouri Sales Tax. Exemption certificates will be furnished on request.
- 8.** Prices quoted are to be firm and final, and prices shall be stated in units of quantity specified with packing and drayage charges included.
- 9.** Shipments shall be marked as directed on the Purchase Order.
- 10.** All deliveries shall be made FOB Destination with freight charges fully included and prepaid. C.O.D. shipments will not be accepted. The seller must pay and bear all freight charges.
- 11.** The University will not be responsible for articles or services furnished without a Purchase Order.
- 12.** Risk of loss or damage to the goods prior to the time of their receipt and acceptance by the University is upon the supplier.
- 13.** All invoices and correspondence shall show the Purchase Order Number. All invoices must contain full descriptive information on items or service furnished. Separate invoices shall be rendered for each order and forwarded to the University.
- 14.** Supplier agrees to defend, protect, and save the University harmless from all claims and actions arising out of patent infringement.
- 15.** University reserves the right to cancel all or any part of orders if shipment is not made as promised. Supplier shall notify the University if shipment cannot be made as promised. Time of proposed delivery must be stated in definite terms in the space provided.
- 16.** The bidder hereby guarantees that no article listed herein is adulterated or misbranded within the meaning of the Federal Food, Drug and Cosmetic Act or an article which may not, under the provisions of Federal Law, be introduced into interstate commerce.
- 17.** Samples, when required, are to be furnished prior to the date specified for receipt of bids.
- 18.** In case of any doubt or difference of opinion as to the items to be furnished hereunder or the quality thereof, the decision of the UM Chief Procurement Officer shall be final and binding upon both parties.
- 19.** The University reserves the right to award an order to the lowest aggregate bidder for all items or on an item basis, or a group of like items, whichever is found to be in the best interest of the University. If a split award is not acceptable to a bidder, it must be stated in the bid response.

- 20.** In awarding the contract, the University may take into consideration the skill, facilities, capacity, experience, ability, responsibility, previous work, the financial standing of the bidder or bidders; the amount of other work being carried on by the bidder; the quality, efficiency, and construction of the equipment proposed to be furnished; the period of time within which the equipment is to be furnished and delivered; and the necessity of prompt delivery of the items herein described. The inability of any bidder to meet the requirement mentioned above may be cause for rejection of his bid.
- 21.** In the event time and materials are a portion of this bid, the University reserves the right to audit supplier's records concerning this bid.
- 22.** All items or services to be furnished hereunder shall meet all applicable State and Federal requirements of the Occupational Safety and Health Standard. All alleged violations and deviations from said State and Federal regulations or standards of the items of services to be furnished hereunder, must be set forth on the Bid Form at the time of submission of the bid. Or if at any later date the items or services contained herein shall not meet all applicable state and federal requirements after the bidder is awarded the contract hereunder, the bidder must notify UM Procurement immediately in writing.
- 23.** The University serves from time to time as contractor for the United States Government. Accordingly, the provider of goods and/or services shall comply with federal laws, rules, and regulations applicable to subcontractors of government contracts including those relating to equal employment opportunity and affirmative action in the employment of minorities (Executive Order 11246), women (Executive Order 11375), persons with disabilities (29 USC 706 and Executive Order 11758), and certain veterans (38 USC 4212 formerly [2012]) contracting with business concerns with small disadvantaged business concerns (Publication L. 95-507). Contract clauses required by the Government in such circumstances are incorporated herein by reference.
- 24.** As required by Section 508 of the Rehabilitation Act (36 C.F.R., Pt. 1194) and other state and federal laws, the University requires that all products provide equivalent ease of use for individuals with disabilities as for non-disabled individuals. To fulfill this obligations, Bidder shall: (1) ensure that all products comply with the Web Content Accessibility Guidelines (WCAG); (2) provide the University with an Accessibility Conformance Report; (3) respond promptly to accessibility complaints or reported deficiencies at no cost to the University; and (4) indemnify and hold the University harmless in the event of any claims arising from inaccessibility.
- 25.** Bidder certifies to the best of its knowledge and belief that it and its principals are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency in accordance with Executive Order 12549 (2/18/86).
- 26.** If this bid involves health care services or products, the Bidder agrees to maintain, and will further assure such compliance by its employees or subcontractors, the confidential nature of all information which may come to Bidder with regard to patients of the University. All services provided pursuant to this bid shall be provided in accordance with all applicable federal and state laws, including The Health Insurance Portability and Accountability Act of 1996, Public Law 104-191, sections 261-264, the Administrative Simplification sections and the regulations promulgated pursuant thereto and regulations of the Joint Commission on Administration. Bidder represents that Bidder is not currently excluded or threatened with exclusion from participating in any federal or state funded health care program, including Medicare and Medicaid. Bidder agrees to notify the University of any imposed exclusions or sanctions covered by this representation.
- 27.** If the contract resulting from this bid involves the acquisition of disposal of services, supplies, information technology, or construction and has a total potential value of \$100,000 or more, and if awarded supplier is a company with ten (10) or more employees, then Supplier certifies that it, and any company affiliated with it, does not boycott Israel and will not boycott Israel during the term of this Contract. In this paragraph, the terms "company" and "boycott Israel" shall have the meanings described in Section 34.600 of the Missouri Revised Statutes.
- 28.** Any contract issued as a result of this RFB shall be construed according to the laws of the State of Missouri. Additionally, the awarded supplier shall comply with all local, state, and federal laws and regulations related to the performance of the contract to the extent that the same may be applicable.
- 29.** In accordance with University policy, preference shall be given to Missouri products, materials, services, and firms when the goods or services to be provided are equally or better suited for the intended purpose. In assessing overall value, consideration will be given to the extent to which proximity or Missouri preference of the supplier provides potential advantages or reduction of risks. Firms are considered "Missouri firms" if they maintain a regular place of business in the State of Missouri.
- 30.** In connection with the furnishing of equipment, supplies, and/or services as a result of this bid, the contractor and all subcontractors shall agree not to discriminate against any recipients of services, or employees or applicants for

employment on the basis of race, color, religion, national origin, sex, age, disability or veteran status. The contractor shall comply with federal laws, rules, and regulations applicable to subcontractors of government contracts, including those relating to equal employment of minorities, women, persons with disabilities, and certain veterans. Contract clauses required by the United States Government in such circumstances are incorporated herein by reference.

- 31.** Due to the changing nature of the COVID-19 pandemic, awarded supplier will monitor and comply with CDC and other federal, state and local guidance; modifications to University operating procedures; and directives of University relating to protection of the health and safety of the University community.

NOTIFICATION TO UNIVERSITY IN EVENT OF POSITIVE COVID-19 CASE: In the event any of the successful Contractor's personnel who have or are presently performing services for the University of Missouri (a) tests positive for COVID-19, or (b) has been in close contact with someone that tests positive for COVID-19, the successful Contractor shall immediately notify the University designated contact, and take immediate action to quarantine such person and any other Contractor Personnel who may have come in contact with the person testing positive for COVID-19, and assist University in identifying any other persons on the University campus who may have come in contact with such person. Contractor must clean and disinfect all areas any infected person may have contacted on University's campus, and any cleaning or sanitation costs resulting from a positive COVID-19 test of Contractor personnel are the sole cost and responsibility of Contractor.
- 32.** Suppliers shall refrain in offering any offers of gifts to the University and all University of Missouri employees in accordance with University of Missouri Policy, #26301, Suppliers.
- 33.** The University reserves the right, in its best interest as determined by the University, to cancel the contract by giving written notice to the Supplier thirty (30) days prior to the effective date of such cancellation.
- 34.** Preferred settlement method is through the use of Electronic Accounts Payable solutions. Payment terms associated with these forms of payment will be issued as net 30 after the date of invoice. Payment terms associated with settlement by check will be net 30 days. Cash discounts for prompt payment may be offered but they will not be considered in determination of award unless specifically stated in the Detailed Specifications and Special Conditions. The University may withhold payment or make such deductions as may be necessary to protect the University from loss or damage on account of defective work, claims, damages, or to pay for repair or correction of equipment or supplies furnished hereunder. Payment may not be made until satisfactory delivery and acceptance by the University and receipt of correct invoice have occurred. For consulting services and/or contract labor services performed for MU Health Care, the hourly rate and the number of hours worked must be included in the agreement and/or on the invoice submitted. Payment may not occur unless this information has been provided. The University encourages suppliers to opt into its Single-Use Account (SUA) credit card program for payment of invoices. The SUA is an electronic, credit card-based paymentsolution that acts like a check. It provides a single 16-digit virtual account number for each payment. Similar to a check, the credit limit on each SUA is set to the specific payment amount. Payment terms for Suppliers who participate in the SUA program are Net 0 as opposed to the standard Net 30 terms. No additional fees shall be charged for the use of University credit cards.
- 35.** The intended coverage of this RFB, and any contract resulting from this solicitation, shall be for the use by all faculty, staff, students, departments, locations, and affiliates of the University of Missouri, including MU Health Care. The University of Missouri System seeks to make the terms and prices of this bid available to other public entities and higher education institutions. Extension of the terms and prices to any or all other higher education institutions and public entities is at the discretion of bidders and shall not be considered in the award of this bid. The bidder shall further understand and agree that participation by other higher education institutions and public entities is discretionary on the part of these institutions, and the University of Missouri System bears no financial responsibility for any payments due the supplier by such entities, nor will the University be responsible for contract administration other institutions.

**UNIVERSITY OF MISSOURI
SPECIAL CONDITIONS & DETAILED SPECIFICATIONS**

University of Missouri Procurement is requesting bids for the furnishing **COOLING TOWER CLEANING** for University of Missouri – Columbia - Energy Management Department.

All quantities are estimated based upon anticipated needs. The University reserves the right to order more or less as needed. Instructions for ordering will be provided at time of notice of award and/or issuance of purchase order.

AWARD:

The award will be based on lowest bid meeting all specifications. The University reserves the right to award an order to the lowest aggregate bidder for all items or on an item basis, or a group of like items, whichever is found to be in the best interest of the University. **If a split award is not acceptable to a bidder, it must be stated in the bid response.**

Note: The University of Missouri reserves the right to negotiate best and final terms with the bidder selected.

SITE TOUR:

Site tours will be offered on an individual basis. **BIDDERS MUST** schedule an appointment to take the tour. Bidders who arrive without an appointment will not be granted a tour. **ALL QUESTIONS** are to be e-mailed to Wade A. Jadwin at jadwinw@mst.edu

Tours & related questions must be completed and submitted by October 21, 2021 at 2:00 p.m. CT

District Cooling:

- | | | |
|------------------|--------------|------------------------|
| • David Atkisson | 573-864-7040 | atkissond@missouri.edu |
| • Bill Wegener | 573-864-7088 | wegenerw@missouri.edu |
| • Burton Heller | 573-884-6935 | hellerb@missouri.edu |

Power Plant:

- | | |
|---------------|--------------|
| • Harry Frank | 573-882-2646 |
| • Jim Wilbur | 573-882-2646 |

The purpose of the tour is to allow potential bidders the opportunity to inspect the area. Each bidder is solely responsible for a prudent and complete personal inspection, examination and assessment of the work site condition, facilities, and/or any other existing condition, factor or item that may affect or impact performance. The bidder shall not be relieved of responsibility for performance under the contract for any reason whatsoever, including but not limited to the bidder's failure to observe existing conditions, etc.

INSURANCE REQUIREMENTS:

Contractor agrees to maintain, on a primary basis and at its sole expense, at all times during the life of any resulting contract the following insurance coverages, limits, including endorsements described herein. The requirements contained herein, as well as the University's review or acceptance of insurance maintained by Contractor is not intended to and shall not in any manner limit or qualify the liabilities or obligations assumed by Contractor under any resulting contract. Coverage to be provided as follows by a carrier with A.M. Best minimum rating of A- VIII.

Commercial General Liability

Contractor agrees to maintain Commercial General Liability at a limit of not less than \$1,000,000 Each Occurrence. Coverage shall not contain any endorsement(s) excluding nor limiting Product/Completed Operations, Contractual Liability or Cross Liability.

Contractor may satisfy the minimum liability limits required for Commercial General Liability or Business Auto Liability under an Umbrella or Excess Liability policy. There is no minimum per occurrence limit of liability under the Umbrella or Excess Liability; however, the Annual Aggregate limit shall not be less than the highest "Each Occurrence" limit for either Commercial General Liability or Business Auto Liability. Contractor agrees to endorse The Curators of the University of Missouri, its officers, employees and agents as Additional Insured on the Umbrella or Excess Liability, unless the Certificate of Insurance state the Umbrella or Excess Liability provides coverage on a "Follow-Form" basis.

Business Auto Liability

(If required in service performance) Contractor agrees to maintain Business Automobile Liability at a limit not less than \$1,000,000 Each Occurrence. Coverage shall include liability for Owned, Non-Owned & Hired automobiles. In the event Contractor does not own automobiles, Contractor agrees to maintain coverage for Hired & Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Liability policy.

Workers' Compensation & Employers Liability (Waiver)

Contractor agrees to maintain Workers' Compensation in accordance with Missouri State Statutes or provide evidence of monopolistic state coverage. Employers Liability with the following limits: \$500,000 each accident, disease each employee and disease policy limit. **Waiver of this requirement** - If Contractor is not required to maintain coverage by Missouri State Statute and they submit a completed UM waiver form.

Contract Language

The Curators of the University of Missouri, its officers, employees and agents are to be Additional Insured with respect to the project to which these insurance requirements pertain. A certificate of insurance evidencing all coverage required is to be provided at least 10 days prior to the inception date of the contract between the contractor and the University. Contractor/Party is required to maintain coverages as stated and required to notify the University of a Carrier Change or cancellation within 2 business days.

The University reserves the right to request a copy of the policy. The University reserves the right to require higher limits on any contract provided notice of such requirement is stated in the request for proposals for such contract.

Indemnification

The Contractor agrees to defend, indemnify, and save harmless The Curators of the University of Missouri, their Officers, Agents, Employees and Volunteers, from and against all loss or expense from any cause of action arising from the Contractor's operations. The contractor agrees to investigate, handle, respond to and provide defense for and defend against any such liability, claims, and demands at the sole expense of the Contractor or at the option of the University, agrees to pay to or reimburse the University for the Defense Costs incurred by the University in connection with any such liability claims, or demands. The parties hereto understand and agree that the University is relying on and does not waive or intend to waive by any provision of this Contract, any monetary limitations or any other rights, immunities, and protections provided by the State of Missouri, as from time to time amended, or otherwise available to the University, or its officers, employees, agents or volunteers.

Failure to maintain the required insurance in force may be cause for contract termination. In the event the Agency/Service fails to maintain and keep in force the required insurance or to obtain coverage from its subcontractors, the University shall have the right to cancel and terminate the contract without notice.

The insurance required by the provisions of this article is required in the public interest and the University does not assume any liability for acts of the Agency/Service and/or their employees and/or their subcontractors in the performance of this contract.

Specifications - Request for Bid
University of Missouri Energy Management

Provide materials and labor as described herein to clean and disinfect cooling towers and to brush and clean tubes, end sheets and doors on shell and tube heat exchangers.

Base Bid will include District Cooling towers and chiller tubes. Alternate Bids will be submitted for the Power Plant cooling tower and condenser tube cleaning.

Contractor must supply an insurance certificate for working on campus.

1.01 Tower General Disinfection & Clean Process - The following highlights the general approach for cleaning and disinfection of cooling water systems. Certain modifications may be required depending on system access, design, operation, etc. All stages in the clean and disinfection process shall require assistance from the Owner regarding scheduling and operations as well as site access. Owner will pre-clean and disinfect prior to Contractor work.

1.02 Tower Pre-Clean and Disinfection – By Owner

Prior to Contractor’s mechanical cleaning, Owner will pre-clean and disinfect tower.

Owner will pre-clean with 35% hydrogen peroxide per 1,000 gallons of system volume. At the conclusion of the pre-clean, Owner will blow down fouled system water.

After pre-clean and disinfection, Owner will drain system.

1.03 Tower Mechanical Cleaning for surface sanitation and removal of deposits

1. Each system cell and basin are isolated and drained for mechanical cleaning.
2. Each system cell is pressure washed from top to bottom, internal and external, as is reasonably accessible to remove deposits. Basins shall be pressure washed and mucked out as necessary.
3. Use scale remover as needed to remove deposits.
4. Special care is to be taken to remove deposits without damaging the fill pack.
5. Deposits are removed for disposal.
6. Disposal will be completed off-campus by Contractor.
7. Any vacuum trucks required for sump cleaning are to be provided by contractor and all removed deposits to be disposed of off campus by contractor.

8. Owner's representative will inspect and approve tower cleaning on each system before cleaning can be considered complete.
9. Some towers may require cleaning one cell at a time, leaving the remainder of the tower in service.

1.04 Tower Post-Clean Disinfection for the destruction of dislodged biofilms and pathogens

All cooling tower fans must be shut OFF, and all recirculation pumps must be ON. The system is disinfected using an oxidizing biocide such as chlorine or an equivalent chemistry. Maintain a 5 PPM free chlorine residual for one hour. Owner will provide oxidizing biocide and method of introducing into condenser water system. Contractor will ensure system is reassembled and ready for disinfection for towers that will return to service.

1.05 Tower Documentation and Certification

The cleaning and disinfection service shall be documented with a service report with photos and a certificate for a record of due diligence. Documentation supports a site risk reduction program for control of Legionella in cooling water systems.

1.06 Tower Special Conditions

1. Owner will make available hose bib connections and 110V power at each location.
2. Contractor shall provide all needed materials including, but not limited to, hoses, hose connectors, pipe fittings, PPE, extension cords, power washers and any other required equipment/materials to complete the job.
3. Contractor is responsible for complete site cleanup before leaving each location. No trash or debris shall be left behind.
4. Owner will operate all pumps and valves as needed for system circulation and isolation.
5. Contractor is responsible for safely performing Lock Out Tag Out.
6. Contractor shall provide all needed PPE.
7. Contractor shall provide an aerial lift for external cleaning of GT Plant cooling towers.

1.07 GT Plant Cooling Towers 23 and 48 Special Conditions

1. Perimeter of GT Plant cooling tower deck, approximately 500 linear feet, must be lined with absorbent gutter guard/sock.
2. Absolutely no silt or debris of any kind can go over the deck side or into the downspouts.

3. All work must be stopped immediately if silt or debris is found to be leaving the deck.
4. All silt and debris must be mucked out and removed using buckets or similar means.

2.01 General Tube Cleaning Procedure - The following highlights the general approach for brushing and cleaning chiller tubes. Certain modifications may be required depending on system access, design, operation, etc. All stages in the tube cleaning process shall require assistance from the Owner regarding scheduling and operations as well as site access.

2.02 Mechanical Cleaning of Chiller Tubes and End Sheets

1. Contractor will brush all tubes, with the appropriate size and type of brush, until tubes are clean.
2. Contractor will flush all tubes after brushing.
3. Contractor will power wash all end sheets and doors down to clean metal surface.
4. Contractor will disassemble evaporators, condensers, and absorbers to be brushed.
5. Contractor will take care not to damage evaporator insulation.
6. Owner's representative will inspect and approve cleaning of tubes, doors, and end sheets on each system before cleaning can be considered complete.
7. Contractor shall provide all needed materials including, but not limited to, hoses, hose connectors, pipe fittings, PPE, extension cords, power washers, tube brushing machines and any other required equipment/materials to complete the job.
8. Contractor shall supply appropriate tube brushes of the correct size and type for each tube bundle.
9. Contractor is required to provide any air compressors needed for brushing.
10. Owner will make available hose bib connections and 110V power at each location.
11. Contractor is responsible for complete site cleanup before leaving each location. No trash or debris shall be left behind.
12. Owner will operate all pumps and valves as needed for system circulation and isolation.
13. Contractor is responsible for safely performing Lock Out Tag Out.
14. Contractor shall provide all needed PPE.

15. Owner will provide an aerial lift as needed in the GT Plant and ECCP.

3.01 BASE BID: District Cooling Towers To Be Cleaned and Disinfected

- | | |
|---------------------------|---|
| 1. ECCP Tower 1 | 4 cells, 53,000 approx. gallons system volume |
| 2. ECCP Tower 2 | 4 cells, 60,000 approx. gallons system volume |
| 3. Life Sciences Tower 1 | 2 cells, 14,200 approx. gallons system volume |
| 4. Life Sciences Tower 2 | 2 cells, 14,000 approx. gallons system volume |
| 5. Life Sciences Tower 3 | 2 cells, 18,000 approx. gallons system volume |
| 6. GT Plant Tower 23 | 4 cells, 17,000 approx. gallons system volume |
| 7. GT Plant Tower 48 | 5 cells, 46,800 approx. gallons system volume |
| 8. Hearnese | 4 cells, 27,000 approx. gallons system volume |
| 9. Med Sciences | 3 cells, 56,000 approx. gallons system volume |
| 10. SRC | 4 cells, 17,000 approx. gallons system volume |
| 11. Research Park Tower 1 | 1 cell, 18,000 approx. gallons system volume |
| 12. Research Park Tower 2 | 1 cell, volume included in Tower 1 |
| 13. Dalton | 2 cells, 4,000 approx. gallons system volume |

3.02 BASE BID: District Cooling Chiller Tubes to be Cleaned and Flushed

Chiller	Evaporator		Condenser		Absorber		Surface Condenser	
	Count	Size	Count	Size	Count	Size	Count	Size
C-ECP CHLR-1	1776	5/8"	1534	5/8"	0	0	0	0
C-ECP CHLR-2	1776	5/8"	1534	5/8"	0	0	0	0
C-ECP CHLR-3	1776	5/8"	1534	5/8"	0	0	0	0
C-ECP CHLR-4	1776	5/8"	1534	5/8"	0	0	0	0
C-ECP CHLR-5	1776	5/8"	1534	5/8"	0	0	0	0
C-ECP CHLR-6	1776	5/8"	1534	5/8"	0	0	0	0
C-ECP CHLR-7	1109	3/4"	717	1"	0	0	525	3/4"
C-ECP CHLR-8	1109	3/4"	717	1"	0	0	525	3/4"
C-GT PLANT CHLR-1	1200	5/8"	232	5/8"	0	0	0	0
C-GT PLANT CHLR-3	1009	3/4"	1413	3/4"	0	0	734	3/4"
C-GT PLANT CHLR-4	1699	3/4"	2505	3/4"	0	0	752	3/4"
C-GT PLANT CHLR-5	1699	3/4"	2505	3/4"	0	0	752	3/4"
C-LIFE SCI CHLR-1	1667	5/8"	1322	5/8"	0	0	0	0
C-LIFE SCI CHLR-2	1776	5/8"	1534	5/8"	0	0	0	0
C-LIFE SCI CHLR-3	815	3/4"	1824	5/8"	0	0	0	0
C-HEARNES CHLR-1	665	3/4"	787	3/4"	0	0	0	0
C-HEARNES CHLR-2	665	3/4"	787	3/4"	0	0	0	0
C-HEARNES CHLR-3	780	3/4"	1037	3/4"	0	0	0	0

C-MED SCI CHLR-1	888	5/8"	747	5/8"	0	0	0	0
C-MED SCI CHLR-3	888	5/8"	747	5/8"	0	0	0	0
C-SRC CHLR-1	1440	1/2"	428	5/8"	740	5/8"	0	0
C-SRC CHLR-2	1440	1/2"	428	5/8"	740	5/8"	0	0
C-DALTON CHLR-1	195	5/8"	395	5/8"	395	5/8"	0	0
C-RCP CHLR-1	800	5/8"	1023	5/8"	0	0	0	0
C-RCP CHLR-2	506	5/8"	507	5/8"	0	0	0	0

Included in Base Bid, Contractor will reassemble evaporators, and condensers when brushing, flushing, and power washing are complete on the following chillers:

- 1) ECCP 1-4
- 2) Life Sciences 2
- 3) Hearnes 1-3
- 4) Research Park 1-2

Owner will provide gaskets for reassembly.

4.01 Alternate Bid 1: Power Plant Cooling Tower

Provide alternate pricing to clean and disinfect the power plant cooling tower. This system must remain in service at all times; however, it is segmented so some of the cells may be taken out of service for maintenance. Cells 1,2,3 may be removed from service at the same time; they drain to a common sump for circulating pumps 1, 2 and 3. Cells 4 and 5 may be removed from service at the same time; they drain to a common sump for circulating pumps 4 and 5. Follow cleaning requirements outlined in 1.03. Individual cooling tower cell basins may be washed down to their respective sump. Troughs and sumps must be completely washed down, cleaned and all debris removed before inspection and restoration by power plant personnel. Disinfection of entire cooling tower, as outlined in 1.04 and 1.05, will commence after all cells and sumps have been cleaned. Equipment isolation and Lock Out Tag Out must be coordinated by power plant operations staff. Cooling Tower troughs and sumps shall be considered permit-required confined spaces; contractor shall furnish personnel air monitors, attendee and retrieval equipment, as required.

Alternate Bid 1: Power Plant Cooling Tower:

5 cells, 200,000 approx. gallons system capacity

Composite Cooling Solutions, Model Phoenix FRP

4.02 Alternate Bids 2-5: Power Plant Condensers

Provide alternate pricing to clean the steam surface condensers for 4 steam turbine generators at the power plant. Price each condenser separately. Only one of the four condensers will be removed from service at any given time. Scheduling, shutdown and LOTO to be coordinated by power plant personnel. Follow condenser cleaning requirements as outlined above.

	Unit	Mfg. #	Tubes	OD in.	Length	Material	*Notes
Alternate Bid #2	Turbine 6	W. House	2070	0.75	192"	Admiralty	
Alternate Bid #3	Turbine 7	Graham	4300	0.75	216"	Admiralty	1
Alternate Bid #4	Turbine 8	Ecolaire	4470	0.875	134"	Admiralty	2
Alternate Bid #5	Turbine 9	Basco	1850	0.875	216"	Admiralty	2

*NOTE 1 - inlet water box has 1/2 inch stainless steel screen which must be removed for cleaning and restored afterwards

*NOTE 2 - first pass tubes have plastic tube guards installed at the inlet end only which must be removed prior to cleaning and replaced afterwards.

5.01 Scheduling

1. ECCP Chillers 1-4 tubes shall be done in November 2021. ECCP Chillers 5-8 must be kept online while Chillers 1-4 are offline. Owner will bring Chillers 1-4 back online prior to taking Chillers 5-8 offline.
2. ECCP Tower 1 shall be done in November 2021. ECCP Tower 2 must be kept online while Tower 1 is offline. Owner will bring Tower 1 back online prior to taking Tower 2 offline.
3. Life Sciences Chiller 2 and Tower 2 shall be done in November 2021. Life Sciences Chiller 3 and Tower 3 shall remain online while Chiller 2 is being cleaned.
4. Hearnese Chillers 1-3 and Tower shall be completed November 2021.
5. Research Park Chillers 1 and 2 shall be done in November 2021. One chiller and one tower shall remain in operation during the cleaning of the offline chiller.
6. The remaining chillers and towers can be scheduled November 2021– March 2022.
7. All scheduling is subject to Owner operational requirements.
8. Power Plant Surface Condensers will be scheduled at a time mutually acceptable to both the contractor and the Owner.

BY CHECKING THIS BOX THE BIDDER ACKNOWLEDGES ALL SPECIFICATIONS CAN BE MET AND ALL REQUESTED INFORMATION PERTAINING TO QUALIFICATIONS IS ACCURATE.

BID PRICING

Item	Amount
• Base Bid: District Cooling Towers & Tubes:	\$ _____
• Alternate 1: Power Plant Cooling Tower:	\$ _____
• Alternate 2: Turbine 6 Condenser Tubes:	\$ _____
• Alternate 3: Turbine 7 Condenser Tubes:	\$ _____
• Alternate 4: Turbine 8 Condenser Tubes:	\$ _____
• Alternate 5: Turbine 9 Condenser Tubes:	\$ _____

List all requirements here, including but not limited to: quantity, type, size, description, delivery timing, required literature and drawings, installation instructions as applicable.

**ATTACHMENT A
SUPPLIER DIVERSITY PARTICIPATION FORM**

The University of Missouri System is committed to and supports supplier diversity as an essential part of the University’s mission and core values. The University’s Supplier Diversity efforts reflect this mission.

Tier 2 Supplier Diversity Information - The University strongly encourages Supplier Diversity participation in all of its contracts for goods and services. Tier 2 Spend is spend reported by primary (non-diverse) suppliers of the University of Missouri who subcontract work to or make purchases from a diverse supplier. Depending upon the contract, primary (non-diverse) suppliers will be asked to submit Tier 2 information with Minority and Diverse Owned companies. Suppliers have two options in reporting Tier 2 dollars depending on the terms of the contract: Direct and Indirect.

- Direct dollars - those dollars directly spent with Women and Diverse Owned suppliers in the fulfillment of the contract.
- Indirect dollars - based on a percentage of revenue the University represents to the supplier. An example is as follows:
 1. Supplier's Total Revenues: \$10,000,000
 2. Revenues from University \$: \$ 4,000,000
 3. University % of Total Revenues: 40% (#2 divided by #1)
 4. Total Minority and Diverse owned Dollars \$: \$ 400,000
 5. University % Attributable Revenue: 1% (#4 divided by #2)

1. Does your company have a Supplier Diversity Program? If so, describe efforts your company has made to increase business with Minority and Diverse Owned businesses (i.e. does your company have a policy statement, participate in outreach activities, promote diverse subcontracting, publicize bid opportunities, provide certification assistance, etc.?) Provide examples (use additional pages if needed):

2. If you are a non-diverse owned company, what percentage of your company's total contracting and procurement spend for the prior year was with Minority and Diverse Owned businesses? _____
Are you able to provide this information specific to University of Missouri business? _____

3. If you are a non-diverse owned company, complete the following table indicating the percentage your company will subcontract with certified Women and Diverse Owned businesses should your company be the successful bidder. Note: If your company does not plan to use Women and Diverse Owned businesses to fulfill your contract obligations, please explain why not.

Supplier Name	% of Contract	Specify Direct or Indirect

If there are questions regarding supplier diversity at the University, contact Teresa Vest, vestt@umsystem.edu.

**ATTACHMENT B
SUPPLIER REGISTRATION INFORMATION**

Completion of this section is strongly encouraged. Please review and check ALL applicable boxes.

SMALL BUSINESS CONCERN: Yes No

NOTE: The term "small business concern" shall mean a business as defined pursuant to Section 3 of the Small Business Act and relevant regulations issued pursuant thereto. Generally, this means a small business concern organized for profit, which is independently owned and operated, is not dominant in the field of operations in which it is bidding. We would consider any firm with 500 employees or less a "small business concern".

WOMAN OWNED BUSINESS (WBE): Yes No

NOTE: A woman owned business is defined as an organization that is 51% owned, controlled and/or managed, by a woman. The determination of WBE status depends solely on ownership and operation and is not related to employment. The firm should be certified by a recognized agency (e.g., state, local, federal, etc.). Please see Public Law 106-554 for more detail.

MINORITY BUSINESS ENTERPRISE (MBE): Yes No

NOTE: A minority business is defined as an organization that is 51% owned, controlled and/or managed by minority group members. The determination of minority status depends solely on ownership and operation and is not related to employment. The firm should be certified by a recognized agency (e.g., state, local, federal, etc.). Please see Public Law 95-507 for more detail. Place an X by the appropriate space below.

Asian-Indian - A U.S. citizen whose origins are from India, Pakistan and Bangladesh

Asian-Pacific - A U.S. citizen whose origins are from Japan, China, Indonesia, Malaysia, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Thailand, Samoa, Guam, the U.S. Trust Territories of the Pacific or the Northern Marianas.

Black - A U.S. citizen having origins in any of the Black racial groups of Africa.

Hispanic - A U.S. citizen of true-born Hispanic heritage, from any of the Spanish-speaking areas Mexico, Central America, South America and the Caribbean Basin only.

Native American - A person who is an American Indian, Eskimo, Aleut or Native Hawaiian, and regarded as such by the community of which the person claims to be a part.

VETERAN BUSINESS ENTERPRISE Yes No

SERVICE-DISABLED VETERAN BUSINESS ENTERPRISE Yes No

NOTE: A Veteran or Service-Disabled Veteran business is defined as an organization that is 51% owned, controlled and/or managed by Veterans. The firm should be certified by a recognized agency (e.g., state, local, federal, etc.). Please see Public Law 109-461 for more detail.

MISSOURI FIRM: Yes No

NOTE: A Missouri Firm is defined as an organization which has and maintains within the State of Missouri a regular place of business for the transaction of their business.

SUPPLIER'S CERTIFICATION:

The undersigned hereby certifies that the foregoing information is a true and correct statement of the facts and agrees to abide by the laws of the State of Missouri and the rules and regulations of the University of Missouri System now in effect, including any subsequent revisions thereof. Supplier acknowledges that it is his/her responsibility to keep the information current by notifying the University of Missouri of any changes.

Signature of Person Authorized to Sign this Form: _____

Title: _____ Date: _____