

APPA GUIDELINES FOR UNIVERSITY WATER TREATMENT BID SPECIFICATIONS

Our facility has an established system for submitting water treatment program proposals. A simple 5-step procedure is used and consists of the following:

STEP ONE: PRE-BID MEETING

STEP TWO: ISSUANCE OF "REQUEST FOR PROPOSAL"

STEP THREE: VENDOR QUALIFICATION

STEP FOUR: REVIEW OF QUALIFIED PROPOSALS AND PRESENTATIONS

STEP FIVE: CONTRACT AWARD.

Additional Information

APPENDIX A: TERMS & CONDITIONS

APPENDIX B: PROPOSAL FORMAT

APPENDIX C: BOILER SYSTEM DETAILS

APPENDIX D: COOLING SYSTEM DETAILS

NOTE: ONLY VENDORS THAT MEET OR SURPASS THE QUALIFICATIONS SET FORTH IN STEP 3 WILL BE ALLOWED TO PROGRESS TO STEP 4.

STEP ONE- PRE-BID MEETING

A **mandatory** pre-proposal conference will be conducted for all prospective offerors. This conference is scheduled for "**DATE & TIME**", at the "**University Name**" Purchasing Offices. The conference agenda is as follows:

- Review of the requirements listed in the RFP.
- Question and answer period.
- **ATTENDANCE IS MANDATORY AS IT IS A NECESSARY COMPONENT TO A COMPLETE UNDERSTANDING OF THE REQUIREMENTS. TO ENSURE APPROPRIATE ARRANGEMENTS, PLEASE CALL "**Bid Contact Name & Phone Number**" WITH THE NAMES OF YOUR REPRESENTATIVES THAT WILL ATTEND.**

STEP TWO – REQUEST FOR PROPOSAL

This Request for Proposal (RFP) is Step Two of our acquisition process for a comprehensive, service oriented water treatment program. *If your firm did not complete Step One, or your firm did not meet our Qualification Requirements, you may not submit a proposal for a water treatment program.*

For step two, terms and conditions will be brought forward from Appendix A. The agreed upon terms and conditions will be incorporated in any contract which results from this Request for Proposal.

In order to simplify our task of evaluating all of the proposals that will be submitted, we have developed a format in which all proposals must be prepared. This format is specified in Appendix B. Failure to adhere to this format or to omit any of the information that is required will result in your firm's proposal being disqualified.

Detailed information regarding the boiler and cooling systems can be found in Appendices C and D respectively. Basic information that is necessary to determine the program cost can be found in these two appendices. Make no assumptions regarding the system data or the water chemistry, call if you have any questions. If a vendor finds an error in the boiler or cooling system specifications, and we agree the error is significant, then all vendors will be notified in writing of the specification change.

Requests for additional information must be submitted directly to the following persons:

Contractual: "NAME"
"TITLE"
"Phone Number"

Boilers/Cooling System: "NAME"
"TITLE"
"Phone Number"

All requests for clarification of this Request for Proposal and its specifications must be made to the "Assigned Department" to the attention of "NAME". Questions concerning this request for proposal must be submitted in writing and received **prior to "Date"** in the office of the issuing agency.

After the evaluation of each proposal is complete, your firm *may* be scheduled to make a presentation of your proposal and to answer any questions we may have.

It is our goal to contract for a complete service-oriented water treatment program. The contract will be awarded to the vendor who best satisfies all of our water treatment needs at optimum cost performance. *Cost will not be the sole criteria for determining the contract award.*

OVERVIEW

The water treatment program will include all boiler systems, all cooling towers, all hot water loops, and all chilled water loops. In addition, the water treatment program will include all chemical products, any required equipment, and professional consulting services to:

- Improve program safety and reduce program risk / liability.
- Reduce fuel and electrical consumption through improved heat transfer efficiency. This is accomplished by minimizing scale, corrosion, fouling, and microbiological growth, which create deposits on heat transfer surfaces.
- Minimize repair and maintenance costs associated with replacement and cleaning of equipment due to scale, corrosion, fouling, or microbiological activity.
- Provide professional, knowledgeable and involved sales/service personnel to ensure program success.
- Accurately monitor program results and communicate appropriate recommendations with quantifiable business oriented justifications.
- Thoroughly train maintenance personnel on the implementation and control of the program.

Vendors are to use the format specified in Appendix B in order to assure that each section of the RFP is addressed. Failure to use the specified format will result in disqualification of your proposal.

PROPOSALS

The deadline for submitting proposals is **“Date”**. The vendors written proposal and **“X”** copies must be submitted in a binder (see Appendix B) and delivered to **“Contact Name, Title, Department”**, **“University Name”**. Proposals not submitted in accordance with Appendix B shall be rejected. All proposals are subject to the conditions specified herein. Those, which do not comply with these conditions, are subject to rejection. Proposals will be opened on **“Date”**.

EXECUTION OF PROPOSAL

The proposal must contain an original signature of an authorized representative in the space provided and must be typed or printed in ink. Use of erasable ink is not permitted. All corrections made by the vendor to his proposal must be initialed.

LENGTH OF CONTRACT

The term of the resultant contract shall be for a **“time period”** commencing approximately **“month/day/year”** and terminating on **“month/day/year”**. We reserve the right to extend the resultant contract.

NON-CONFORMANCE TO CONTRACT CONDITIONS

Any and all items or services may be tested and/or inspected for compliance with specifications. Items, which are not in conformance with specifications, may be rejected and returned at vendor's expense. Failure to meet program goals may result in termination of contract with as little as 30 days notice.

LEGISLATION CHANGES

In the event any governmental restrictions are imposed which would necessitate alteration of the material, quality, workmanship or performance of the items offered in this proposal prior to their delivery, it shall be the responsibility of the successful bidder to notify the buyer at once indicating in writing the specific regulation which requires an alteration. We reserve the right to accept or reject any such alteration, including any price adjustments occasioned thereby.

GOVERNMENT REGULATIONS

All chemicals proposed for use at our facility shall be verified as acceptable for use in the State of "state name" and must be approved by our facility. Chemicals used for water treatment must comply with all EPA, NC and DOT requirements, including packaging and labeling. The submitting vendor shall include MSD sheets and product bulletins/fact sheets with initial proposal for review.

It is our intent that all steam produced to be acceptable for use around food materials, thereby, requiring FDA approval for all boiler treatment chemicals, including oxygen scavengers, scale and corrosion inhibitors, and steam/condensate treatments.

All discharges into the sewerage system from cooling tower bleed-off, boiler blowdown, or system draining must meet all standards of the local municipality, the State of "state name", and any Federal regulations that apply.

INTERPRETATIONS AND QUESTIONS

Any questions concerning conditions and specifications shall be directed in writing to us for receipt no later than five (5) days prior to the proposal review. These questions and their respective answers shall be available to all qualified bidders.

CONFLICT OF INTEREST

All vendors must disclose in their proposal the name of any officer, director, or agent who is also an employee of our facility or any of its agencies. Further, all vendors must disclose the name of any facility employee who owns, directly or indirectly, an interest of five (5%) percent or more in the vendor's firm or any of its branches.

RIGHT TO INSPECT SUPPLIER FACILITIES

We reserve the right to inspect the vendor's facilities at any time with prior notice.

PROGRAM GOALS

The water treatment program will provide scale and corrosion protection for condenser water systems, cooling towers, chillers and chilled water systems, steam boilers, deaerator, steam/condensate lines, and closed hot water loops, while maximizing program safety, efficiency and performance.

VENDOR'S COMMITMENT

Vendor's chemical program and his/her consulting services are to produce clean heat transfer surfaces which are substantially free of scale, sludge, deposits, corrosion, pitting, and biological growth when treatment is administered in accordance with vendor's directions and recommendations.

EQUIPMENT INSPECTION

The vendor shall provide a written statement of the condition of all equipment made available for inspection. All equipment will be made available for inspection within three (3) months of award of contract.

MATERIAL COMPATIBILITY

The vendor shall ensure that the chemicals used in the water treatment program shall have no detrimental effect on the metallic or non-metallic materials in the equipment being treated when used in accordance with vendor's instructions. It is our responsibility to inform the vendor of all the materials contained in the system. The proposed chemical products must also be completely compatible with the existing chemical treatment program.

MONITORING AND CONTROL

The vendor will provide a comprehensive chemical testing program with written instructions and test procedures for all control tests. The vendor will provide a summary chart with frequency and time of day for each test.

FEED AND CONTROL EQUIPMENT

The vendor will supply our facility with any chemical feed or control equipment which is required to assure reliable operation of our boiler and cooling systems as outlined under REQUIRED EQUIPMENT in appendices C and D. Costs will be included in these appendices as well. The vendor will review the benefits of installing this equipment and discuss any savings we will realize as a result.

ANNUAL BUSINESS REVIEW

The vendor must present a yearly review of the treatment program, and a final review ninety (90) days prior to the expiration of the contract. Vendor's representative shall meet at these times with the designated representatives of The Facility to discuss all treatment programs, their effectiveness, and future objectives.

IDLE SYSTEMS

Vendor representatives shall be responsible for recommending treatment dosages and methods for protecting idle systems such as laying up boilers during summer months and laying up air conditioning systems during winter months.

SPECIAL STUDIES

Vendor shall conduct corrosion studies in critical systems at least quarterly to ensure program performance. Vendor should outline what other studies it might recommend.

WATER CONSERVATION

The vendor shall make an effort to maximize cycles of concentration in both boilers and cooling towers to minimize water, energy and chemical consumption.

Vendor name and address: _____

**Name of person authorized
To obligate vendor:** _____

**Title of person authorized
To obligate vendor:** _____

Signature: _____

STEP THREE- VENDOR QUALIFICATION

Vendors are to use the format specified in Appendix B in order to ensure that each section of the Vendor Qualification Criteria is addressed (i.e. each subheading: Vendor Experience, Representative Experience, etc. must be addressed in its own section within the binder). Failure to use the specified format for your response will disqualify your firm as a potential vendor.

In addition to the materials you provide, the decision team may utilize site visits or may request additional material, information or references from your firm. The team will determine how effectively each vendor's response satisfies the needs of our facility. Failure to complete and return Step 3 "Vendor Qualification" by the closing date, or failure to provide a response to each question will result in automatic non-approval of your firm as a qualified vendor.

Vendors who meet the qualification criteria will be designated as qualified vendors and will have their proposals opened. If required, the qualified vendors must be prepared to give a presentation of their products and services. The evaluation of products and services will be based upon the proposal and presentation (if required), and will be used in determining the final award.

The criteria listed below are considered mandatory to establish the responsibility and capability of firms to meet our requirements. Please provide sufficient information regarding each of the items below so we can thoroughly evaluate your firm's qualifications to submit a proposal for our water treatment needs. You may include supporting literature and attachments to the information requested below.

A copy of the form used to evaluate the individual criteria is included following the discussion of the items.

VENDOR EXPERIENCE

The vendor must be a company primarily engaged in selling water treatment chemicals and services for boiler and cooling systems. In order to be considered, your firm must have been in business for a minimum of 5 years. The company must be focused on the development of new technologies. ***Please enclose a copy of your firm's annual report or equivalent (include a list of all U.S. and foreign patents relating to water treatment).***

REPRESENTATIVE EXPERIENCE

The vendor shall appoint two members of its company to represent the company in dealings with our facility. Both representatives must have college degrees with a Bachelor of Science in a scientific or engineering discipline. Both vendor representatives shall be full-time employees of the Vendor Company. Only these individuals will represent the vendor regarding services for this contract unless otherwise specifically authorized. ***List name, home address, phone number, educational background, years experience in water treatment industry, and years with the vendor for each of the appointed representatives. Provide a copy of diploma and college transcripts.***

REFERENCES

Vendor shall submit a list of at least 5 customers in the surrounding area, handled by the representatives named above. Be sure to include the customer's name, address, contact name, and contact phone number. We reserve the right to contact or visit customers so listed and to disqualify vendors not performing satisfactory service. These references should have systems similar in complexity and size to this facility.

SERVICE LEVEL AND RESPONSE TIME

Both vendor representatives must live within 2 hours driving distance (150 mi.) of our facility. A representative shall visit the site a minimum of **“Choose: Weekly/Monthly/Semimonthly or Bimonthly”**. The representatives must be available for calls on specific problems should they occur. The representatives shall be available to us on 24-hour notice, and under emergency circumstances, should be able to visit our site within four (4) hours after being notified. *Please indicate the residential address of each representative for compliance with this requirement.*

QUALITY

An organization's commitment to quality is an indication of its ability to satisfy customer needs. A vendor's dedication to quality means fewer problems and less risk for our facility. As such, all vendor-manufacturing facilities and Labs must be ISO 9000 certified. *Please provide a two- (2) page summary of your company's Quality Improvement Process. Include an outline of The Quality Education that your firm's employees receive and how many have received it. Supporting literature or pamphlets may be included. Include a copy of the servicing plants ISO certification.*

PROGRAM ADMINISTRATION

Organization is key to a well-run water treatment program. In order to have quick access to all technical and safety information regarding the water treatment program, we require that the vendor provide an Administration Notebook. At the very least, this notebook must contain an outline of the chemical program, all chemical control test procedures, Log Sheets, Product Bulletins, Material Safety Data Sheets, Feed and Control Equipment Specifications and Service Reports. *Please provide a two- (2) page summary of how your firm administers and manages a water treatment program. Include a sample of your Administration Notebook and its contents.*

EQUIPMENT FINANCING

Please demonstrate your firm's financial capability to lease any equipment, which may be required to improve our system performance. For example, we may require a new water softener piece of automation equipment to improve system performance. Instead of purchasing this equipment from another vendor, we may elect (for budgetary reasons) to lease this equipment through your firm. The Facility will also need the option of buying out the equipment at specific times during the lease. *Please provide a summary of your firm's equipment financing program. If you do not have such a program, please indicate such.*

SUBCONTRACTORS

No subcontractors are to be used in any portion of your service other than those associated with the

equipment discussed in "EQUIPMENT FINANCING" above. If your firm uses subcontractors this will disqualify your firm as a potential vendor. ***Please indicate compliance with this requirement.***

CHEMICAL STORAGE AND HANDLING REQUIREMENTS

We are concerned with chemical storage, drum handling and disposal at our site. To reduce our risk associated with drum handling, all product deliveries must be made to the point of feed. Plastic and mild steel drums of any size are not acceptable. 5-gallon pails are not acceptable for biocides. To eliminate chemical handling by site personnel, all products must be capable of being fed neat (without dilution or contact) by our operators. In order to minimize our liability in this regard, we require the following regarding chemical delivery and storage:

*****Chemical Storage Requirements:**

- a) Storage container material of construction must be stainless steel. It must have an appropriate lining if storing corrosive chemical material. Exteriors must be stainless for strength.
- b) Secondary containment volume must be at least 150% of the delivered chemical storage container volume.
- c) Storage tanks must have bottom drain capabilities to insure positive, flooded suction for chemical pumping and injection and to allow complete emptying of the vessel.
- d) Storage containers must have a clear sight glass with inventory and drawdown capabilities for monitoring and control of the chemical program.
- e) Pumps must be located ***inside*** the containment.
- f) The supplier must retain ownership of tanks.
- g) Tanks must be vented and fitted with fume suppression equipment during delivery.
- h) Tanks must be fitted with automated inventory control and re-ordering equipment to prevent running out of chemical unexpectedly and to notify supplier of use rate abnormalities.

*****Chemical Delivery Requirements:**

- a) Chemical transport equipment must comply with DOT requirements for transporting hazardous material.
- b) Chemical transport equipment brought on site must be stainless steel on exterior for strength.
- c) No empty or full chemical transport equipment is to be stored on-site.
- d) Deliveries must be made by chemical handlers who are:
 - i) Certified in HAZMAT compliance
 - ii) Equipped with PPE on-site for delivery and transfer of chemical.
 - iii) Equipped with items required to handle spills and any unexpected incidents.
- e) Chemicals must be transportable up steps if needed.

Please outline your firm's program to handle the above requirements. Include copies of your firm's training program for chemical delivery personnel as well as photos of storage and handling equipment. Please indicate where similar systems may be seen locally

TRAINING

This training should include how to perform tests and monitor chemical program results, how to work safely with chemical products, and general training regarding boiler and cooling systems. Samples of training materials must be included. ***Please provide a two-page summary of the training your firm can provide to our maintenance staff.***

EFFICIENCY MONITORING

Since one of the major goals of any water treatment program is improved heat transfer efficiency through clean heat transfer surfaces, we require that water treatment vendors have the capability of on-site computer analysis of energy efficiency. Boiler efficiency, overall chiller efficiency, condenser efficiency, and evaporator efficiency must be performed on a regular basis. ***Please submit a two-page summary of your firm's capability in this area along with sample computer outputs (from at least one of the accounts referenced above) for all applicable computer efficiency studies.***

HEALTH AND SAFETY

Your firm must provide Material Safety Data Sheets to ensure a safe work environment for our personnel and to comply with all state and federal laws concerning the handling of hazardous materials. We require that a Material Safety Data Sheet accompany all first time orders and that the vendor operate an ***in house*** 24-hour, 7 day per week emergency phone number which can be called for emergency information regarding chemical spills and/or accidents involving your products. Subcontracting this service is not acceptable. ***Provide a two-page summary of your Material Safety Data Sheet program; include your emergency phone number and a sample copy of your firm's Material Safety Data Sheet for a BIOCIDES you might use at our site.***

All vendor representatives MUST BE Safety Trained and Certified in all aspects of chemical handling associated with water treatment. ***Documentation must be provided to certify vendor representative training completion date, and follow-up on-going training.***

TROUBLESHOOTING CAPABILITIES

The vendor must have laboratory facilities capable of performing a wide array of analytical work to facilitate monitoring, control, and troubleshooting of our systems. The vendor shall provide all laboratory services. Subcontracted work or the use of independent laboratories is not allowed unless specifically authorized. Laboratory services which shall be available include: corrosion coupon analysis, water analysis, deposit analysis, microbiological analysis, ion exchange resin analysis, analex cartridge analysis, fuel oil analysis, and metallurgical analysis. ***Include a sample analytical report for a corrosion coupon analysis, a deposit analysis and a microbiological from a local customer (no need to disclose customer name but location should be evident) as evidence of your firm's laboratory capabilities.***

ON-SITE MICROBIOLOGICAL TESTING

We are very concerned with microbiological control in our cooling systems. Therefore, we require the vendor to have the capability of determining organism levels within 30 minutes of taking a water sample. This test will be used by our personnel to adjust biocide feed so that system cleanliness is maintained without having to overfeed biocide. ***Please submit instructions for such a test that you would use.***

STATISTICAL PROCESS CONTROL

To help ensure that we receive quality products, your firm must be currently practicing statistical process control or equivalent in the manufacture of chemical products. In addition, vendors must have a statistical process control program specifically designed for monitoring and controlling boilers and cooling towers. ***Please submit a two- page summary of your firm's capability in these areas along with SPC reports for all products that you will propose for our systems. These SPC reports must be based on a minimum of 25 data points. Supporting literature may be included.***

EQUIPMENT INSPECTION

Thorough equipment inspection is important in determining the effectiveness of a water treatment program as well as potential operational problems for a given system. Therefore, the vendor must have the capability of inspecting our boilers and chillers using fiber optics equipment and must be able to provide us with narrated videotape of the inspection. ***In order to demonstrate compliance with this requirement; please enclose a sample video from one of the accounts referenced above. This video will be available after the bid process is completed.***

TRANSPORTATION REQUIREMENTS

The program price must be F.O.B. Destination, freight prepaid. The price quoted will be considered to include all charges for transportation, packaging, pallets, containers, etc., necessary to complete delivery on a F.O.B. destination basis. ***Indicate your ability to use freight paid invoices.***

INSURANCE REQUIREMENTS

Your firm must meet our insurance requirements. ***Please provide a certificate of insurance listing our facility as an additional insured for up to \$5,000,000 per incident.***

TERMS AND CONDITIONS

Terms and conditions for your firm's products and services will include our Terms and Conditions of Agreement for Services in Appendix A. If your firm intends to modify our Terms and Conditions, these modifications must be included in your response. If no modifications or comments are included in your response, we will conclude that your firm will accept Appendix A.

STEP THREE

VENDOR QUALIFICATION EVALUATION

Place an X in one of the three fields (not qualified, meets, or exceeds) for each category. Total the number of X's to determine if a vendor is qualified to proceed to Step 4. Refer to STEP THREE – VENDOR QUALIFICATION for the specific requirements of each of the following criteria.

	Unqualified	Qualified	Exceeds
VENDOR EXPERIENCE <i>A copy of firm's annual report or equivalent is enclosed.</i>			
REPRESENTATIVE EXPERIENCE <i>Name, home address, phone number, educational background, years in water treatment industry, and years with the vendor for each of the two appointed representatives is provided.</i>			
REFERENCES <i>A list of at least 5 customers in the surrounding area, handled by the representatives named above is provided including the customer's name, address, contact name, and contact phone number.</i>			
SERVICE LEVEL AND RESPONSE TIME <i>The living address of each representative is within 150 miles of our facility.</i>			
QUALITY <i>A two-(2) page summary of the company's Quality Improvement Process including an outline of The Quality Education that the firm's employees receive and how many have received it. Includes a copy of the servicing plant ISO certification.</i>			
PROGRAM ADMINISTRATION <i>A summary of how your firm administers and manages a water treatment program is included. Includes a sample of the Administration Notebook and its contents.</i>			
EQUIPMENT FINANCING <i>A summary of the firm's equipment financing program included and is satisfactory.</i>			
SUBCONTRACTING <i>Supplier uses no subcontractors.</i>			
CHEMICAL STORAGE AND HANDLING REQUIREMENTS <i>Supplier meets all requirements including stainless steel storage, delivery vessels, stainless containment at 150% volume and trained chemical deliverers. A copy of training materials is included. Photos of storage and handling equipment and local use references are included.</i>			

TRAINING <i>A summary of the training the firm provides to our maintenance staff.</i>			
EFFICIENCY MONITORING <i>A summary of the firm's capability in this area along with sample computer outputs for computer efficiency studies are included.</i>			
HEALTH AND SAFETY <i>A summary of the firms Material Safety Data Sheet program, including their emergency response phone number and a sample copy of the firm's Material Safety Data Sheet for a BIOCIDE is included. The MSDS information and format meets our facilities needs. Documentation is provided that certifies vendor representatives have had OSHA training and follow-up training is on going.</i>			
TROUBLESHOOTING CAPABILITIES <i>A sample laboratory analytical report for a corrosion coupon analysis, a deposit analysis and a microbiological analysis from a local customer (no need to disclose customer name but location should be evident) is included.</i>			
ON-SITE MICROBIOLOGICAL TESTING <i>Instructions for the 30-minute microbio test are included.</i>			
STATISTICAL PROCESS CONTROL <i>A summary is included of the firm's capability in these areas along with SPC reports</i>			
EQUIPMENT INSPECTION <i>A sample video is included of a fiber optic inspection indicating the ability of the rep to perform this service if needed.</i>			
TRANSPORTATION REQUIREMENTS <i>Firm can use freight paid invoicing.</i>			
INSURANCE REQUIREMENTS <i>A certificate of insurance listing our facility as an additional insured for up to \$5,000,000 per incident is included.</i>			
TERMS AND CONDITIONS <i>Firm accepts terms and conditions or provides acceptable alternatives.</i>			
TOTALS			

If a vendor has any X's in the "not qualified" field, that vendor does not meet the qualification of the RFP and will not be allowed to proceed to Step Four - Review of Qualified Proposals.

APPENDIX A
TERMS AND CONDITIONS OF AGREEMENT FOR SERVICES

1. USER: “University Name & Address”.

2. DESCRIPTIVE LITERATURE: All proposals must be accompanied by complete descriptive literature, specifications and other pertinent data necessary for their evaluation as required by the solicitation, otherwise such proposals will be subject to rejection.

NOTE: THE OMISSION OF COMPLETE DESCRIPTIVE LITERATURE AND SPECIFICATIONS OR THE ATTACHMENT OF "TERMS AND CONDITIONS OF SALE" THAT CONFLICT WITH THOSE HEREIN AND ATTACHED WILL BE GROUNDS FOR THE REJECTION OF THAT PROPOSAL.

3. DELIVERY: Deliveries of Water Treatment supplies must be between the hours of 8:00 A.M. and 5:00 P.M. Monday through Friday at “Name/ Location”. Contractor agrees to make delivery within “# of Days” business days after receipt of any valid order and delivery within forty-eight (48) hours for emergency orders. Routine service calls must be made between the same hours as those specified above.

4. FACILITIES: “University Name” reserves the right to inspect the contractor's premises during normal business hours at any time during the contract period with prior notice.

5. TRANSPORTATION CHARGES: Prices quoted will be considered to include all transportation charges including packaging, pallets, containers, etc., necessary to complete delivery on an FOB “Location” basis.

6. PERSONNEL AND EQUIPMENT: The Contractor shall furnish all necessary facilities, personnel, and any equipment for the performance of the work under contract. The Physical Plant will, however, provide for any electrical or plumbing connections to equipment necessary.

7. WORKMANSHIP: The workmanship shall at all times be of good grade accepted as the best practice of the particular trade involved and as stipulated in written standards of recognized organizations or institutes of the respective trades as qualified by these specifications.

8. EMPLOYEE CONDUCT: If at any time during the performance of work covered by these specifications, the conduct of any employee of the contractor be adjudged a nuisance to the Owner, or if any workman be considered detrimental to the work, the contractor shall order such employee or party removed immediately from the grounds.

9. QUALIFIED CONTRACTOR: All work under this contract shall conform to the state of “State Name” Building Code and other state, local or national codes as are applicable. All persons, firms or corporations engaged in the business of this contract shall be approved to provide service in the State of “State Name” and meet all specific requirements of this document.

10. PREMISE PROTECTION: The Contractor shall take proper and adequate measures for the protection of all property and personnel while in the performance of work included in this

proposal. Contractor shall be held responsible for the protection of all walks, drives, grounds, and building and glass surfaces. Any damage will be repaired at the expense of the contractor.

11. SAFETY: The contractor shall adhere to the rules, regulations and interpretations of the “State Name” Department of Labor relative to Occupational Safety and Health Standards pertinent to the work specified herein. Rev: 09/05/96

12. WORK INSPECTION: It is a condition of this contract that the work described herein shall be subject to inspection by the designated official representative of the Physical Plant, and those persons required by state law to test special work for official approval. Unless otherwise specified, work shall be inspected during the normal working hours of 8:00 A.M. to 5:00 P.M.

13. WARRANTY: Any proposed equipment identified in the solicitations response will be fully maintained (all parts, labor, travel, and routine maintenance) for a period of 12 months from date of equipment acceptance at no additional cost to the University. In addition, all maintenance costs associated with any proposed equipment must be clearly identified and included in the cost proposal.

14. GUARANTEE: The contractor(s) shall guarantee the material and workmanship against defect due to faulty workmanship or negligence for a period of twelve (12) months following the final acceptance of the work. Where items of equipment or material carry a manufacturer's warranty for any period in excess of twelve (12) months, then the manufacturer's warranty shall apply for that particular piece of equipment or material. The contractor shall replace such defective materials, equipment, or workmanship without cost to the Owner within the stipulated guarantee period.

15. LAWS: Contractor shall comply with all laws, licenses, ordinances, rules and regulations bearing on conduct of his work.

16. LIABILITY: Contractor shall assume liability for wrongful act(s) and/or negligence of its employees while engaged in the performance of the contract.

APPENDIX B PROPOSAL FORMAT

In order to simplify the task of evaluating all of the proposals which will be submitted, we have developed a format in which all proposals must be prepared. The response, which you submitted in Step One “Vendor Qualification”, will become a part of your proposal. *Please use the same binder and add the new sections, which are required.*

Your proposal must be submitted in a 3-ring binder and must be organized in the order indicated below. Each item below represents a separate section within the binder. Each section must be separated by an 8 1/2" x 11" sheet with an index tab for quick reference.

	COVER LETTER
1	MONITORING AND CONTROL
2	FEED AND CONTROL EQUIPMENT
3	ANNUAL BUSINESS REVIEW
4	IDLE SYSTEMS
5	WATER CONSERVATION
6	SPECIAL STUDIES
7	ADDITIONAL INFORMATION
8	OVERALL PROGRAM COST
9	SIGNED PROPOSAL DOCUMENT
10	PRODUCT BULLETINS
11	MATERIAL SAFETY DATA SHEETS
**	(Begin Step 3) VENDOR QUALIFICATION
12	VENDOR EXPERIENCE
13	REPRESENTATIVE EXPERIENCE
14	REFERENCES
15	SERVICE LEVEL AND RESPONSE TIME
16	QUALITY
17	PROGRAM ADMINISTRATION
18	EQUIPMENT FINANCING
19	SUBCONTRACTORS
20	CHEMICAL STORAGE AND HANDLING REQUIRMENTS
21	TRAINING
22	EFFICIENCY MONITORING
23	HEALTH AND SAFETY
24	TROUBLESHOOTING CAPABILITIES
25	ON-SITE MICROBIOLOGICAL TESTING
26	STATISTICAL PROCESS CONTROL
27	EQUIPMENT INSPECTION
28	TRANSPORTATION REQUIREMENTS
29	INSURANCE REQUIREMENTS
30	TERMS AND CONDITIONS
31	BOILER SYSTEM PRODUCT SPECIFICATIONS
32	COOLING SYSTEM PRODUCT

	SPECIFICATIONS
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APPENDIX C
BOILER SYSTEM SPECIFICATIONS

These specifications and operating conditions must be used in making proposal calculations. If certain products are not required as part of your chemical program, then type "NOT REQUIRED" in the space provided. You will need to explain why a particular boiler system product is not required and submit it with your proposal in **Section 31**. Failure to follow this request will result in disqualification of your proposal. The price that is to be quoted for the overall program should be based on the operation and guaranteed performance of the following items for the period of one (1) year. Costs are to be based upon our site holding a maximum inventory of 90 days.

The scope of the boiler system, which requires treatment and service, is as follows:

- Feedwater treatment system
- Boiler water treatment system
- Condensate line treatment system

MAKE UP WATER ANALYSIS (City Water)

MAKE-UP WATER QUALITY ANALYSIS (Average)

<u>Analysis</u>	<u>Units</u>	<u>Monthly Average</u>
Alkalinity	Mg/L	“Data”
Aluminum	Mg/L	“Data”
Cadmium	Mg/L	“Data”
Calcium	Mg/L	“Data”
Carbon Dioxide	Mg/L	“Data”
Chloride	Mg/L	“Data”
Chlorine (Free)	Mg/L	“Data”
Color	Co	“Data”
Copper	Mg/L	“Data”
Fluoride	Mg/L	“Data”
Hardness	Mg/L	“Data”
Iron	Mg/L	“Data”
Lead	Mg/L	“Data”
Magnesium	Mg/L	“Data”
Manganese	Mg/L	“Data”
Nickel	Mg/L	“Data”
Nitrate	Mg/L	“Data”
pH	pH	“Data”
Phosphorous Total	Mg/L	“Data”
Potassium	Mg/L	“Data”
Sodium	Mg/L	“Data”
Specific Conductance	umho/cm	“Data”
Sulfate	Mg/L	“Data”
Total Dissolved Solids	Mg/L	“Data”
Turbidity	NTU	“Data”
Zinc	Mg/L	“Data”
Arsenic	Mg/L	“Data”
Barium	Mg/L	“Data”
Chromium	Mg/L	“Data”
Mercury	Mg/L	“Data”
Selenium	Mg/L	“Data”
Silica	Mg/L	“Data”
Silver	Mg/L	“Data”

This is a representative analysis of our make-up source. The vendor should make no assumption of water chemistry and is urged to conduct his own analysis.

BOILER SYSTEM DESCRIPTION
(Use one system description per boiler)

Boiler Name:
Location:
Type:
Make/Model:
Date Installed:
Date Last Inspected:
Boiler Pressure:
Size: Hp/ft2
Boiler Tube Type:
Primary Fuel:
Stack Temperature: °F
Rated Capacity: lb/hr
Actual Capacity: lb/hr
Known Embrittlement: Yes/No
Known Carryover: Yes/No
Known Tube Failures: Yes/No
Tube Blisters: Yes/No
Tube Warping/Bulges: Yes/No
Irregular Flame Pattern: Yes/No
Broken Refractory: Yes/No
Missing Refractory: Yes/No
Broken Baffles: Yes/No
Missing Baffles: Yes/No
Discolorations: Yes/No
Ash Deposits: Yes/No
Vanadium Slag: Yes/No
Erractic Waterline: Yes/No
Feedwater Line Holes Plugged: Yes/No
Feedwater Line Holes Facing Up: Yes/No
Feedwater Line Corrosion: Yes/No
Feedwater Line Deposits: Yes/No
Feedwater Line Loose: Yes/No
Blowdown Line Holes Plugged: Yes/No
Blowdown Line Holes Facing Up: Yes/No
Blowdown Line Corrosion: Yes/No
Blowdown Line Deposits: Yes/No
Blowdown Line Loose: Yes/No
Blowdown Line Below Water Level: inches
Chip Scale in Steam Drum: Yes/No
Localized Tube Scale: Yes/No
General Tube Scale: Yes/No
Old Scale Deposits: Yes/No

New Scale Deposits: Yes/No
Pitting Corrosion: Yes/No
Acid/Chelant Attack: Yes/No
Chip Scale in Mud Drum: Yes/No
Sludge Depth in Mud Drum: inches
Blowdown Line Holes Plugged: Yes/No
Localized Tube Scale: Yes/No
General Tube Scale: Yes/No
Old Scale Deposits: Yes/No
New Scale Deposits: Yes/No
Pitting Corrosion: Yes/No
Acid/Chelant Attack: Yes/No
Average Cycles of Concentration: Yes/No
Average Percent Blowdown: %
Operating Days Per Year: days
Operating Hours Per Day: hours
Automatic Blowdown: Yes/No
Steam Separator(s): Yes/No
Turbine(s): Yes/No
Superheater(s): Yes/No
Attemperator(s): Yes/No
Economizer(s): Yes/No
Blowdown Heat Recovery: Yes/No
Separate Feedwater Meter: Yes/No
Separate Steam Meter: Yes/No
Separate Fuel Meter: Yes/No
Separate O2 Analyzer: Yes/No
Stack Dampers: Yes/No
Summer Fuel Usage: BTU/hr
Summer Steam Load: lb/hr
Winter Fuel Usage: BTU/hr
Winter Steam Load: lb/hr
Average Fuel Usage: BTU/hr
Average Steam Load: lb/hr
Days per Year at Idle Load: days
Daily Load Swing: lb/hr
Date of Last Tune-up:
Combustion Efficiency: %
Excess Air: %
Stack O2: %
Rated Steam/Fuel Efficiency: %
Actual Steam/Fuel Efficiency: %
Rated Total Efficiency: %
Actual Total Efficiency: %
Boiler Conductivity: mmhos
Feedwater Conductivity: mmhos

Operating Data

Deaerator Temperature	X° F
Deaerator Pressure	X psig
Feedwater Temperature to Boiler	X° F + X° F economizer rise on #X,X,X
Boiler Drum Pressure	Xpsig
Condensate Return Temperature	X° F

BOILER SYSTEM PRODUCT SPECIFICATIONS (See ASME.doc file for appropriate limits)

The following listed ASME control limits shall be the end result of the treatment used. Use these figures for bidding purposes.

*******INSERT ASME Control Limits based on your type of boiler(s)*******
(see ASME.doc)

BOILER SYSTEM PRODUCT SPECIFICATIONS

(The following information shall be returned with the proposal as a subset in Section 31)

OXYGEN SCAVENGER

Name/No. _____

Generic Type _____

PPM product required per 1 ppm Oxygen in feedwater _____

PPM product required per 1 ppm residual in feedwater _____

SCALE AND CORROSION INHIBITOR

Name/No. _____

Generic Type _____

PPM required per 1 ppm T.A. Hardness in feedwater _____

PPM product required per 1 ppm residual in feedwater _____

ALKALINITY ADJUSTMENT

Name/No. _____

Generic Type _____

PPM product required to raise O-Alkalinity 1 ppm _____

CONDENSATE TREATMENT

Name/No. _____

Generic Type _____

PPM product per million pounds steam produced _____

APPENDIX D
COOLING SYSTEM SPECIFICATIONS

These specifications and operating conditions must be used in making proposal calculations. All of the blanks must be completed on the forms provided. If certain products are not required as part of your chemical program, then type "NOT REQUIRED" in the space provided. You will need to explain why a particular product is not required and submit it with your proposal in *Section 32*. Failure to follow this request will result in disqualification of your proposal. The price that is to be quoted for the overall program should be based on the operation and guaranteed performance of the following items for the period of one (1) year. Costs are to be based upon our site holding a maximum inventory of **“XX”** days.

COOLING SYSTEM DESCRIPTION

The scope of the cooling system, which requires treatment and service, is as follows:

- A. Chilled Water System
- B. Cooling Tower Water System
- C. Equipment

COOLING SYSTEM DESCRIPTION
(Use one system description per chiller)

Chiller Name:		Date of Last Eddy Current:	
Location:		Tube Sheet Corrosion:	Yes/No
Type:		Tube Sheet Corrosion Type:	
Make/Model:		Tube Sheet Corrosion Status:	
Date Installed:		Tube Corrosion:	Yes/No
Daily Chiller Operation:	hours	Tube Corrosion Type:	
Yearly Chiller Operation:	days	Tube Corrosion Status:	
Average Current:	amps	Number of Plugged Tubes:	
Voltage:	volts	Number of Tubes Replaced:	
Phase:		Percent of Tubes Out of Service:	%
Tube Metallurgy:		Number of pH Excursions per Year:	
Sheet Metallurgy:		Tube Deposition:	Yes/No
Shell Metallurgy:		Recurring Problem:	Yes/No
Refrigerant Type:		Deposit Composition:	
Sacrificial Anode:	Yes/No	Deposit Location:	
Rated Tonnage:		Deposit Thickness:	mils
Design Efficiency:		Tube Slime Fouling:	Yes/No
Chiller Water Flow:	gpm	Recurring Problem:	Yes/No
Condenser Water Flow:	gpm	Slime Composition:	
Chilled Water Entering Temp:	°F	Slime Location:	
Chilled Water Leaving Temp:	°F	Slime Thickness:	mils
Condenser Water Temp. In:	°F	System Contamination:	Yes/No
Condenser Water Temp. Out:	°F	Contamination Frequency:	per year
Date Last Inspected:		Contamination Duration:	hrs
Type of Last Cleaning:		Main Contaminants:	

A. CHILLED WATER SYSTEM:

System Specifications:

- 1) System Type: Closed recirculating water.
- 2) System volume: _____ gallons.
- 3) System leakage rate: _____ gal/day.
- 4) Materials of construction (for use of chemical treatment compatibilities):Mild steel, admiralty brass, copper
- 5) Charge-up and Make-up: “Water Source”

Chill Water Treatment Specifications:

- 1) Chemicals: Those necessary to treat the chilled loop system for scale, corrosion, microbiological growth, and fouling.
- 2) Corrosion Inhibitor: The bidder shall furnish the chemicals necessary to achieve the following:
 - a) Maximum Corrosion rate of 0.2 mils per year (mild steel) and 0.1 mils per year on yellow metals.
 - b) Iron and suspended solids dispersion
 - c) Produce no foam
 - d) pH control: 8.5 - 10.0
 - e) Buffering to prevent pH swings

Note: The above inhibitor must be a single product that is blended to provide all specified protections. This will ease in the feed of the product. The active ingredients must include Molybdate, Nitrite, Azole, Polymer and buffering agent.

- 3) Biocides: Used to prevent the growth of microbiological contamination in the loop.

Non-Oxidizing: Gutraldehyde or Isothiazoline are acceptable. Isothiazoline must meet all storage container requirements and may not be pumped (may be educted) or handled by operators. Isothiazoline neutralization kits must be provided. Carbamates are not recommended due to the sensitivity above 8.0 pH. Quaternary compounds are also not recommended due to the potential reaction between the quaternary and certain inhibitor programs causing both to deactivate.

CHILLED WATER INHIBITOR: (Include in Section 32 of proposal)

Name/No.	Generic Active Name	Target Concentration
Generic Types		
For Yellow Metal Corrosion Inhibition		Ppm
For Mild Steel Corrosion Inhibition		Ppm
For Scale Inhibition		Ppm
For General Dispersancy		Ppm
PPM product required in the condenser water to achieve targets		Ppm

CHILLED WATER BIOCIDES: (Include in Section 32 of proposal)

Name/No. _____	Dosage to Achieve Expected Concentration
Generic Name _____ _____ % active	(quote in lbs. / 1000 gal system volume)
Planned Dosing Frequency _____	_____ per week

B. COOLING TOWER WATER SYSTEM:

System Specifications:

- Cooling Tower 1 X tons
- Cooling Tower 2 X tons
- Cooling Tower 3 X tons
- Cooling Tower 4 X tons
- Cooling Tower 5 X tons
- Cooling Tower 6 X tons
- Cooling Tower 7 X tons
- Cooling Tower 8 X tons
- Cooling Tower 9 X tons
- Cooling Tower 10 X tons
- Cooling Tower 11 X tons
- Cooling Tower 12 X tons
- Cooling Tower 13 X tons
- Cooling Tower 14 X tons

Cooling Tower Water Treatment Specifications:

- 1) Chemicals: Those necessary to treat the cooling tower/condenser water system for scale, corrosion, microbiological growth, and fouling. Chemicals must be compatible with present treatment program.
 - a) Scale and corrosion Inhibitor(s): Treatment chemical shall be a liquid non-chromate, non-polluting program that is capable of copper corrosion inhibition and biodispersion.
 - b) Biocides: To prevent algae and microbiological growth in the tower and the condenser system. To maintain a total aerobic microorganism level below 10,000 cfu/ml.
 - i) Oxidizing: A bromine formulation that maintains the halogen level in accordance with CTI standards for Legionella risk control dated Feb 2000 (See APPA website for more information). (0.5-1.0 ppm frees halogen for non-stabilized halogens in liquid and dry form. Measurable residuals for stabilized products.)
 - ii) Non-Oxidizing: Broad-spectrum back-up microbiocide that is active in a pH range of 8.5 to 9.0. Gutraldehyde or Isothiazoline acceptable. Isothiazoline must meet all storage container requirements and may not be pumped or handled by operators. Isothiazoline neutralization kits must be provided. Carbamates are not recommended due to the

sensitivity above 8.0 pH. Quaternary compounds are also not recommended due to the potential reaction between the quaternary compound and certain inhibitor programs causing both to deactivate.

c) Foam control: Foam control is required as a preventative measure. The anti-foam will consist of a fast-acting liquid blend of surface active agents that will control and prevent foaming.

d) *Acid is not recommended. Recommending acid requires firm justification be included with your submittal.*

C. **EQUIPMENT:**

a) **Chemical Control**: The existing control equipment will be used to monitor and control where ever possible. The existing equipment will control the conductivity in the system.

Required System Capabilities

- Graphically reporting the chemical dosage in the cooling water systems.
- Capable of compensating for un-metered make-up and/or blowdown.
- Capable of controlling chemical levels regardless of the number and/or control of the cycles of concentration.
- Capable of correlating dosage and inventory usage to calculate water losses on the cooling water system.
- Capable of data collection for analysis in SPC formats.
- Capable of data collection and of sending data via 4-20 ma signal to the DCS for monitoring

*All calculations for chemical consumption must be based on your recommended **average** concentration.

PRICE OF ANNUAL CONTRACT

****Includes boiler and cooling system chemicals and service**

SUGGESTED GRADING PROCEDURE

FOR INTERNAL USE ONLY

NOT TO BE GIVEN TO POTENTIAL VENDORS

STEP 2

REQUEST FOR PROPOSAL

The following measurable criteria will be used to evaluate all proposals. The maximum point value for each requirement is shown to the right of the blank. The minimum point values for each requirement is zero. Simply assign a point value, which represents how well a vendor satisfies a particular requirement by comparing the proposals from all vendors' point by point.

<u>VENDOR EXPERIENCE</u>	Points	Suggested Points Possible
Degree of experience in treating boiler/cooling systems		200
Number of similar facilities serviced in this area		200
Years in water treatment business		200
Annual sales volume		200
<u>REPRESENTATIVE EXPERIENCE</u>		
Educational background of all representatives		300
Years of experience in water treatment industry		200
Years of experience with vendor		200
<u>REFERENCES</u>		
Degree to which references gave favorable review		500
<u>SERVICE LEVEL AND RESPONSE TIME</u>		
Rep availability, ability to meet special needs that may arise.		300
Quality of service report		300
<u>QUALITY</u>		
Formal quality improvement process		200
Reps understanding of how quality affects water treatment.		300
<u>PROGRAM ADMINISTRATION</u>		
Suitability of reps service plan for site. Ability to work w/ people		300
Quality of administration notebook		200
<u>EQUIPMENT FINANCING</u>		
Flexibility of financing program		200
<u>SUBCONTRACTORS</u>		
No subcontractors are used in any portion of vendor's service		300
<u>CHEMICAL HANDLING AND STORAGE</u>		
Lowest Risk of chemical storage and handling incidents		300
Long-term durability of containers.		300
Degree to which chemical wastage is minimized		100
Containers easily adapted for control and troubleshooting		100
Inventory automation.		100
<u>TRAINING</u>		
Completeness and quality of training program		500

EFFICIENCY MONITORING		
Are computer printouts understandable?		100
Extent to which computer calculates costs		100
HEALTH AND SAFETY		
Completeness and confidence in firm's MSDS's.		300
Amount of health and safety information on MSDS		300
TROUBLESHOOTING CAPABILITIES		
Completeness and confidence in analytical reports provided		500
ON-SITE MICROBIOLOGICAL TESTING		
Simplicity of test		100
STATISTICAL PROCESS CONTROL		
Capabilities of commercially available SPC program		200
EQUIPMENT INSPECTION		
Fiber optics equipment can inspect enhanced chiller tubes		200
MONITORING AND CONTROL		
Written instructions enclosed for all recommended control tests		300
Control test summary chart included		200
FEED AND CONTROL EQUIPMENT		
Benefits and dollar savings of equipment discussed		200
Ability to meet control specs under all conditions.		200
ANNUAL BUSINESS REVIEW		
Vendor provides annual business review		300
Sample business review enclosed		100
IDLE SYSTEMS		
Programs, products, and dosages discussed for all systems		200
SPECIAL STUDIES		
Validity of recommendations to improve monitoring or control.		300
POINTS DUE TO PROGRAM RATINGS		9100
POINTS DUE TO RELATIVE COST*** (see below)		200
GRAND TOTAL POINTS		9300

*****OVERALL BOILER AND COOLING PROGRAM COSTS**

Highest cost vendor for the total boiler and cooling program cost (line 47 from Appendix D, plus line 38 from Appendix E) shall receive 100 points, and the lowest cost vendor shall receive 200 points. Other vendors shall receive points in a linear relationship between the highest and lowest cost vendors.