

Ralph Campbell, Jr.
State Auditor

STATE OF NORTH CAROLINA
Office of the State Auditor

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May 23, 2004

Dr. Marye Anne Fox, Chancellor
North Carolina State University
Box 7001 Holladay Hall
Raleigh, North Carolina 27695-7001

Dear Chancellor Fox:

We received an allegation through the State Auditor's Hotline that North Carolina State University (NCSU) violated North Carolina's competitive bidding process when awarding the chemical treatment services contract for the University's water treatment services. Specifically, the allegation asserted that a vendor had submitted an unrealistically low bid resulting in the University incurring significant cost overruns for the contract.

We have completed a special review of these allegations and are submitting the following findings and recommendations for your review and written response. Our review consisted of interviewing current and former University employees, as well as a vendor representative and reviewing applicable University policies and State regulations.

While we estimate that NCSU incurred approximately \$115,203.54 in water treatment expenses that exceeded the contract amount, our examination did not substantiate the allegation that the vendor intentionally submitted an unrealistic bid for the purpose of generating cost overruns. However, the review of bid and contract documentation revealed internal control weaknesses in the University's request for proposal and contract award processes.

In early 2000, the University's Facilities Operations Division issued a Request for Proposal (RFP) to contract with a vendor to supply and administer materials for a water treatment program to protect the boilers, steam systems, closed loop hot and chilled water systems and cooling towers located on the main campus and at the College of Veterinary Medicine campus. For this specific contract award, the University required that bidders submit a technical proposal and a separate cost proposal. A departmental evaluation team, led by the Project and Facilities Operation Manager and knowledgeable about the technical and operational aspects of the University's water treatment program, evaluated the technical proposals.

The Evaluation Team Leader was responsible for creating the RFP and ultimately responsible for the bid award decision. A Purchasing Manager from the University's Purchasing Office was designated to issue the RFP and issue the final award to the selected vendor.

While investigating the original allegation, we determined that the Evaluation Team as well as the University Purchasing Office awarded the water treatment contract without documenting the resolution of potential bidding compliance issues. During the bid review and evaluation process, the Evaluation Team Leader raised several concerns regarding the winning bidder's proposal. We reviewed copies of emails dated from March 9, 2000, through March 14, 2000, from the Evaluation Team Leader to the Purchasing Manager that listed his concerns about unrealistically low bids. According to the Team Leader, he had concerns that the services required could not be performed at the cost proposed by the winning bidder and wanted further clarification on some of the chemical dosages proposed in the bid. He also noted that the vendor had made an error in a chemical cost formula that would reduce their bid price even further when corrected.

The Evaluation Team Leader stated in one email if the vendor could not provide the information he requested he would like to eliminate the vendor from consideration. He also asked the Purchasing Manager if he should contact some of the vendor's references to determine the chemical dosages used at facilities comparable in size and scope to the water treatment system at the University. In emails responding to the Evaluation Team Leader, the Purchasing Manager suggested the Evaluation Team Leader determine if the dosages proposed by the vendor met industry standards. She also agreed that the Evaluation Team Leader could contact the vendor's references to confirm the dosages used at those facilities. In the final email from the Team Evaluation Leader to the Purchasing Manager, he outlined the detailed information he would like to receive from the vendor before making his decision. Again, he stated his desire to eliminate the vendor from consideration if the information was not provided.

No documentation exists to substantiate the resolution of these concerns prior to awarding the contract. When contacted, the Area Manager for the vendor stated he does not recall anyone from the University contacting him to request additional information regarding the bid price or chemical dosages. The Evaluation Team Leader said he resolved the issues with the vendor prior to making the award but could not provide any specifics of the resolution.

The North Carolina Department of Administration's Purchase and Contract Manual requires the following documentation must be maintained for purchase transactions:

- Original offers if in writing, or written documentation of verbal offers received;

- Reasons for award or cancellation;
- Worksheets/evaluations;
- Mailing list, if used;
- Written justification for waiver or emergency purchase;
- Tabulation of offers received;
- Copy of purchase order(s);
- Related correspondence;
- Reason(s) for receiving only one offer in response to a solicitation;
- Negotiated contracts; and
- Reasons for not accepting technical proposals.

None of the documentation on file indicates the reason the vendor was selected despite the Evaluation Team Leader's concerns over the proposal or if these concerns were ever addressed with the vendor.

We recommend that bid evaluation teams and Purchasing Office personnel ensure they have sufficiently identified, resolved and documented any issues raised when qualifying bid proposals. In addition, we recommend that all documentation regarding resolution of such issues be maintained in the files for that particular award.

There was a discrepancy between actual operating conditions and those specified in the RFP. During our special review we noted that NCSU incurred \$115,203.54 over the proposed contract cost for the water treatment program during a three-year period. It appears this cost overrun was caused by a significant increase from proposed chemical dosages to actual chemical dosages and the purchase of new water treatment equipment.

The RFP required the vendor to prepare annual performance reports that, "state the amounts and costs of chemicals proposed by the vendor in the initial proposal and the actual amounts and cost of chemicals used by the University. Any discrepancies between the proposed and actual amounts shall be identified and explained." In a January 26, 2001, interim report to the Director of Facilities Operations, the vendor Area Manager stated, "actual operating conditions are at a variance with the bid specifications which should result in adjustments in costs that any company being awarded the bid would have necessarily experienced." In this letter and all subsequent performance reports, the vendor details the variation in the amount of chemicals used and the number of treatment cycles that occurred from those originally proposed.

The Area Manager for the vendor said his company aggressively bid for the contract and they proposed their cost based upon maintaining the conditions listed in the RFP. In addition, the vendor's Area Manager said that the main steam plant boilers needed aggressive cleaning, the steam plant chemical feed systems needed replacing and the University needed to build up a chemical inventory on campus. He reiterated that the specifications in the RFP were inaccurate and more appropriate for a system with new equipment in an "ideal" situation.

Several evaluation team members agreed with the Area Manager that water treatment system conditions as described in the RFP were inaccurate. The Plant Maintenance Supervisor stated that since the original RFP did not reflect the actual conditions at the University, the actual cost figures would not match the proposed ones. The Plant Maintenance Supervisor for the College of Veterinary Medicine campus said the cost overruns were reasonable.

Evaluation team members acknowledge that the RFP did not accurately reflect operating conditions and do not dispute the vendor's explanations for the cost overruns. Without contradictory evidence, we must rely upon the University employees' technical knowledge of the water treatment system to evaluate the vendor's service performance and reasons for cost overruns.

It is apparent that no vendor could have provided an accurate cost proposal for servicing the University's water treatment system with inaccurate conditions reflected in the RFP. By awarding a contract under such conditions, the University lost the ability to hold the vendor to the proposed costs.

We recommend that the University Purchasing Office and departmental staff work together to ensure that all RFP's include accurate specifications for operating conditions. For technical proposals, we recommend that University staff conduct physical tests when applicable to determine actual operating conditions.

At the conclusion of our special review we met with the Director of Purchasing and the Purchasing Manager involved in this contractual process to discuss these issues. During this meeting, the Purchasing Manager said that the water treatment services RFP was reissued March 25, 2004. The new RFP has specifications based on actual historical use for the past year as opposed to the "theoretical" conditions included in the prior RFP. In addition, she explained the new RFP has been simplified, with less complicated calculations, to reduce the error factor.

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We are presenting these findings and recommendations for your review and written response. The purpose of the response is to allow you the opportunity to outline any corrective actions taken or planned. We request the delivery of your written response by May 19, 2004.

General Statute 147-64.6(c)(12) requires the State Auditor to provide the Governor, the Attorney General, and other appropriate individuals with written notice of apparent instances of violations of penal statutes or apparent instances of malfeasance, misfeasance, or nonfeasance by an officer or employee. In accordance with this mandate, and our standard operating procedure, we will be providing copies of the management letter to the Governor, the Attorney General, the State Treasurer, and the Director of the State Bureau of Investigation.

If you have any questions or wish to discuss this matter further, please contact us. We appreciate the cooperation received from the employees of North Carolina State University during our review.

Sincerely,

A handwritten signature in black ink that reads "Ralph Campbell, Jr." in a cursive script.

Ralph Campbell, Jr., CFE
State Auditor

Management letters and responses receive the same distribution as audit reports.

Auditor's Note To North Carolina State University's Response:

The original complaint to the State Auditor's Hotline concerned significant cost overruns caused by potential bidding violations. As stated in the report, our special review found no evidence to support bidding violations or intentional "lowball" bidding by the vendor. Accordingly, we do not question the necessity or legitimacy of the additional costs. However, we did note the lack of accurate specifications listed in the RFP. Although accurate specifications would not have eliminated the additional expenses, the university and the vendor would have been able to provide a more realistic contract estimate. The university's recent decision to use historical data in the Water Treatment Program RFP as opposed to the previously used "theoretical" conditions should aid in reducing contract overruns and the appearance of questionable bidding procedures.

As requested, we are including a schedule to demonstrate our computation of expenses in excess of the proposed contract cost.

**NCSU Water Treatment Program
Proposed and Actual Expenses for May 1, 2000 – June 30, 2003**

Year	Annual Estimated Expenses Per Cost Proposal	Actual Annual Expenses Per Performance Reports	Actual Cost In Excess of Proposed Cost
May 1, 2000 - June 30, 2001	\$ 59,397.41	\$ 160,706.38	\$ 101,308.97
July 1, 2001 – June 30, 2002	62,367.30	65,053.69	2,686.39
July 1, 2002 – June 30, 2003	65,485.69	82,810.75	17,325.06
TOTAL	\$ 187,250.40	\$ 308,570.82	\$ 121,320.42
			(6,116.88)*
Actual Cost In Excess of Proposed Cost			\$ 115,203.54

*Credit for inventory 06/01/01 – 06/30/02

NC STATE UNIVERSITY

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May 13, 2004

Mr. Ralph Campbell, Jr.
State Auditor
2 S. Salisbury Street
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Raleigh, NC 27699-0601

Dear Mr. Campbell:

This is our response to your draft letter of May 4, 2004 regarding the special review recently completed by your office concerning the 2000 bidding of a contract for chemical treatment services for the building systems. Facilities Operations and the Purchasing staff have reviewed the information, findings, and recommendations. We offer the following responses.

Auditor's Draft Recommendation: We recommend that bid evaluation teams and the Purchasing Office personnel ensure they have sufficiently identified, resolved, and documented any issues raised when qualifying bid proposals. In addition, we recommend that all documentation regarding resolution of such issues be maintained in the files for that particular award.

NC State University Response: Our procedures have been modified to ensure that documentation in the Purchasing Office reflects the decisions of our RFP Evaluation Teams. We also pledge to file and retain the documentation so that it is readily available for review.

Auditor's Draft Recommendation: We recommend that the University Purchasing Office and departmental staff work together to ensure that all RFP's include accurate specifications for operating conditions. For technical proposals, we recommend that University staff conduct physical tests when applicable to determine actual operating conditions.

NC State University Response: The specifications in our RFP were based on the most accurate data that was available at the time. Changes in weather, campus growth, city water hardness, and system condition impacted the actual conditions experienced. The recently completed RFP, that was advertised March 25, 2004 for these same services, was completely revised including metered production output for central plants; billing instructions; a statement defining the "basis of award;" a revised technical & cost evaluation procedure; clarified treatment levels; clarified input parameters (including operating conditions) for the cost model; and equipment responsibilities of the vendor. Annual costs for the central plants will now be determined by applying the quoted unit costs to actual metered production data. Annual costs for distributed systems will be determined with a revised cost model that will be used only as a basis for award of the contract. Annual reporting and business reviews will monitor actual vs. modeled costs and insure contract compliance.

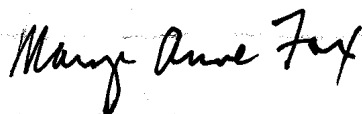
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Auditors Draft Notation: That NCSU incurred approximately \$115,203.54 in water treatment expenses that exceeded the contract amount.

NC State University Response: The contract for chemical treatment services is configured as a variable cost contract, which is a standard in this industry. Due to the high number of variables such as weather, production rates, city water chemistry, etc., the risk associated with a fixed price contract would be cost prohibitive and not in the best interest of the University. The purpose of the bid is to establish the unit costs of products provided by the vendor during the course of the contract. The variability of vendor's products, feed rates, and percent of active ingredients necessitates the use of a cost model to insure that a fair bidding environment is established. The cost model serves only to establish a "basis for award" that is common to all vendors bidding on the contract. The \$115,203 of additional expenses, was incurred over the three years that the contract has been in effect, includes additional fuel oil treatment due to weather conditions, special boiler cleaning chemicals, required pH meters, probes, & test supplies, miscellaneous equipment including replacement sensors, controllers, and feed pumps, and supplemental treatment chemicals. These are legitimate and appropriate expenses that would have been experienced by any vendor during the term of the contract. All expenses are documented, reasonable and within expectations when the total cost of chemical treatment and the number of systems (over 40) are considered. It should also be noted that the total annual cost of services under this contract, including the supplemental costs, averages \$108,000, a savings of over \$40,000 per year over the previous contract. We request a more complete explanation of the additional expenses be included in the final draft.

In summary, all issues identified in your May 4 letter have been addressed and are in use for the procurement process that is underway. Thank you for this opportunity to respond to the draft report.

Sincerely,



Marye Anne Fox
Chancellor

cc: George Worsley, Vice Chancellor for Finance and Business