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Briefing Report to the Honorable John E. Porter, House of Representatives

June 1987

CONTRACTING

Air Force Procurement of Prototype Fuels Dispensing System

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National Security and
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June 12, 1987

The Honorable John E. Porter
House of Representatives

Dear Mr. Porter:

In your November 14, 1986, letter, you asked us to address issues raised by Liquid Controls Corporation concerning the Air Force contract for an automated data collection and fuels dispensing prototype system. These issues concerned the interpretation of the solicitation's specifications requiring "off-the-shelf" equipment and components and delays in the contractor's performance of the contract. We briefed your Office on our findings on March 3, 1987. On March 20, 1987, you asked us to address additional points and questions concerning these issues. This briefing report responds to both of your requests. Responses to your specific questions are included in appendix I.

Our review of Air Force documents and discussions with Air Force officials associated with the contract indicate that the term off-the-shelf does not mean that a commercially available system was to be provided to the Air Force. The solicitation for the contract contemplated that the contractor would do more than just tie together (integrate) the off-the-shelf items since it stated the successful contractor would be responsible for any required research, development, and testing.

The Air Force and the contractor contributed to performance schedule slippage. Our review of the contract modifications and discussions with Air Force officials indicate that the contractor's research and development activities and its problems in obtaining system components from vendors accounted for most of the delays.

SOLICITATION, AWARD, AND PROTEST

On July 29, 1985, the Air Force issued a solicitation to 15 potential sources to design, fabricate, furnish, test, and install a functional automated data collection and fuels dispensing prototype system with associated software and related data. The Data Systems Design Office, Gunter Air

Force Station, Alabama, developed the concept. The following three proposals were received in response to the solicitation:

Offeror	Price
Gull, Incorporated	$ 251,686
Liquid Controls Corporation	587,528
Ametek, Incorporated	1,210,914

According to the Air Force, the proposals were reviewed by an Air Force technical panel without disclosing prices. The panel found all three proposals technically acceptable. It made an on-site preaward survey of Gull and found that it had the technical expertise, resources, and ability to meet all solicitation requirements and specifications. As a result, Gull was determined to be the technically acceptable offeror whose proposal offered the lowest total price to the government.

On September 24, 1985, Gull was awarded a firm, fixed-price contract to design, fabricate, furnish, test, and install an automated data collection and fuels dispensing prototype system to determine the feasibility and cost effectiveness of automation for improved petroleum fuels accountability. The contract requires that the equipment and components needed to fabricate the prototype be off-the-shelf. It specifies that any research and development of equipment and components will be accomplished at no additional cost to the Air Force and that the prototype system will be tested at Mather Air Force Base in California. Originally the system installation was to be completed within 180 days of the contract award, however, contract modifications now require that the system installation be completed by June 5, 1987.

On October 1, 1985, Liquid Controls Corporation protested the award of this contract to Gull. In accordance with bid protest regulations, the protest was dismissed because it did not state a basis for the protest. On October 10, 1985, Liquid Controls filed another protest. It did not contest the award on improper award practices or ethics violations but contended that the successful bidder's product would not meet the contract specifications.

In accordance with bid protest regulations, the Air Force prepared a written report on November 20, 1985, responding to these allegations and gave a copy to Liquid Controls. The report concluded that the allegations were speculative

and did not show a deficiency in the Air Force determination of responsible bidder. It recommended that the protest be denied as being without merit. Under bid protest regulations, Liquid Controls had 7 days to respond to the Air Force's report.

Since Liquid Controls had not (1) provided written comments on the Air Force report, (2) stated in writing that it wanted the case to be decided on the existing record, or (3) requested an extension of time to respond within the required time limits, the General Accounting Office dismissed the protest on December 6, 1985.

CONTRACT STATUS

The equipment installation date has been extended by over 14 months through three modifications. The latest modification provides for delivery of the hardware to be completed by May 15, 1987, and installation of the prototype system by June 5, 1987.

Our discussions with Air Force officials and review of the contract file showed that the Air Force has performed contract status reviews at the contractor's plant to evaluate Gull's performance. During the contract status review performed July 22 through 24, 1986, Gull demonstrated the operation of the prototype system for Air Force representatives.

Air Force officials stated that Gull had delivered most of the prototype equipment to Mather Air Force Base and had begun installing some equipment. Installation was to continue as long as the electrical portion was not connected. Once the equipment had been certified and proven intrinsically safe or explosion-proof, Gull would be allowed to connect the electrical portion.

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In responding to your concerns and issues, we used information provided to us by the Air Force during our interviews and from Air Force contract and bid protest documents. We did not independently verify this information, but we did have the Air Force review a draft of this report to ensure that the information is current and accurate. As you requested, we did not obtain official agency comments. Our work was conducted in accordance with generally accepted government auditing standards.

As arranged with your Office, unless you publicly announce its contents earlier, we plan no further distribution of this briefing report until 30 days from the date of issue. At that time, we will send copies to the Secretaries of Defense and Air Force, and to other interested parties.

Should you have any further questions, please call me on 275-4268.

Sincerely yours,

Harry R. Finley
Senior Associate Director

ANSWERS TO QUESTIONS ON AIR FORCE CONTRACT F-41689-85-C-0035

1. What is the interpretation of "off-the-shelf" equipment and components used in the solicitation to the contract? Include the source of the definition and when it was first used.

The solicitation to the contract does not define the term off-the-shelf equipment and components. The contract provides for the development of a prototype system from off-the-shelf equipment and components. Section C, paragraph 2.0 of the solicitation defines the statement of work as the effort required to design, fabricate, furnish, test, and install an automated data collection and fuels dispensing prototype system with associated software and data. Paragraph 4.2 of that section specifies that the "components/equipment needed from the contractor to accomplish this task must be off-the-shelf" and any research and development of the equipment and components will be accomplished at no additional cost to the Air Force.

Early correspondence from officials within the Data Systems Design Office (DSDO), which developed the concept for the system and evaluated the technical adequacy of the proposals, indicate that the term off-the-shelf equipment and components does not equate to an off-the-shelf system. The Chief of the Supply Systems Management Branch, DSDO, in an October 22, 1985, memorandum pertaining to the contract award protest, stated that language in the solicitation

> "acknowledges the fact that a complete system required by Section C is not readily available in its entirety, but all components/equipment are available in industry. This means the system in Section C would require manufacturing, design, and modification of hardware/software to meet the requirements set forth in the contract."

The Chief of the Munitions and Fuels Section, DSDO, also in responding to the contract award protest, stated in an October 31, 1985, memorandum that the accepted proposal:

> "acknowledges that the parts, components, microcircuits, and sensors are off-the-shelf, however, a basic application engineering and manufacturing job ... will require a series of engineering tasks to design, develop and then manufacture the system to meet the specifications of the contract. This acknowledgement and proposal are within the boundaries

> of the request for proposal (RFP) and the contract as specified in Section C, paragraph 4.2."

In his October 21, 1986, letter to Congressman Porter, the Deputy Secretary of Defense said that

> "the contract requires many of the components, but not the entire system, to be off-the-shelf items. However, the contract always contemplated development and testing as part of the contractor's responsibility."

Our review of contract and bid protest documents indicates that the Deputy Secretary's interpretation is consistent with the terms of the contract and the earlier interpretations of off-the-shelf.

In a March 10, 1987, bid protest decision, involving the Sony Corporation of America, (B-224373.2), we concluded that the requirement for off-the-shelf equipment did not mean that a commercially available system was to be provided to the Army. In that case, we rejected an argument that a system resulting from the integration of off-the shelf components was unacceptable. In the subject case, the request for proposal contemplated that the contractor would do more than just tie together (integrate) the off-the-shelf items by providing for research, development, testing, and equipment modification.

2. If the Air Force did not contemplate the system to be designed from off-the-shelf items which would require a minimum effort in the design, development, and manufacture of the system, then why did the solicitation originally state that the entire system is to "be operational within 120 days of the award of the contract" (later amended to 180 days)?

Section F of the solicitation initially required that the system hardware be delivered within 90 days and installation completed within 120 days after receipt of contract. On August 27, 1985, the delivery and installation periods were changed to 150 and 180 days of contract award, respectively. The contract file indicates that these were extended to promote competition and to allow for modification of existing commercial equipment.

We and the Air Force officials with whom we spoke do not know exactly why the 120-day period was originally chosen. Air Force officials responsible for the contract indicated that the delivery and installation periods were probably "best estimates" of the times a potential contractor would require

to assemble a prototype system from off-the-shelf equipment and components and to install that system.

3. The solicitation required that the equipment and components were to be intrinsically safe or explosion-proof as supplied off-the-shelf. On what basis did the General Accounting Office (GAO) conclude that the equipment and components used in the system development must be modified to be intrinsically safe or explosion proof?

Section C, paragraph 4.3 of the solicitation identified equipment and components to be used to fabricate the system. Some equipment and components were required to be explosion-proof or intrinsically safe as defined by the Underwriters Laboratories.

According to a current DSDO official, commercially available equipment and components are not intrinsically safe or explosion-proof; the contractor must develop and fabricate safe and explosion-proof equipment and components from those which are commercially available. This position agrees with an earlier statement by the Chief, Munitions and Fuels Section, DSDO, who, in an October 31, 1985, memorandum, stated that Gull proposed to use off-the-shelf parts and components to design and develop intrinsically safe or explosion-proof equipment and that this was within the boundaries of the request for proposal and the contract. We agree that such modifications are within the scope of the contract, however, we did not conclude that the equipment and components used in the system development must be modified to be intrinsically safe or explosion proof.

4. How much actual time is attributable for each of the factors contributing to the delivery schedule slippage?

The contract originally required complete installation of the prototype system by March 23, 1986. The Air Force has extended this date to June 5, 1987, by three modifications to the contract. The latest modification provides for delivery of the hardware to be completed by May 15, 1987, and installation of the prototype system by June 5, 1987.

In our March briefing, we cited three primary factors mentioned by Air Force officials and indicated by contract documents that contributed to the schedule slippage:

1. The Air Force did not provide the necessary technical documentation on time, which delayed start up by the contractor.

2. The Air Force did not realistically estimate the time required to install the system without interfering with air wing operations at Mather Air Force Base.

3. The contractor required more time to research and develop the prototype system and to obtain system components from vendors.

Air Force officials responsible for the contract told us that the contract documents do not clearly identify the actual time slippage caused by each of these three factors. Our review of the contract modifications and discussions with Air Force officials indicate that Gull's research and development activities and problems obtaining system components from vendors accounted for most of the delays.

5. When and why did the Air Force decide that the cold weather test at K. I. Sawyer Air Force Base (AFB) in Michigan is no longer necessary? On what does the GAO base its conclusion that cold weather testing at Sawyer would require an additional prototype system at an additional cost of $140,000? Since the test was deemed as no longer necessary, why was the system installation date not moved back to the October 30, 1986, deadline?

The contract requires that each item furnished and installed on fueling equipment and fuels bulk storage fill stand areas be able to operate in temperatures of -60° to +130°. DSDO officials told us that Gull, which is responsible for ensuring that the equipment meets temperature requirements, has conducted cold weather tests at its plant. These officials said that on May 16, 1986, the Air Force Strategic Air Command requested that testing be conducted under actual cold weather conditions at K. I. Sawyer Air Force Base. The need for and cost of the tests were being explored in October 1986, when the Deputy Secretary of Defense wrote to Congressman Porter on October 21 that:

> "Although the currently required installation date is October 30, 1986, we anticipate two changes to the contract that will extend that deadline. The most important modification requires changing the site for the contractually required cold weather test from Mather AFB to K. I. Sawyer AFB, Michigan. This change is essential since the government-run test was to be

done in a lab at Mather AFB and it was determined that this would not be acceptable. We project a revised completion date of March 31, 1987."

The Deputy Secretary's letter mentions two changes to the contract that would extend the October 30 installation date: (1) the cold weather test at Sawyer and (2) a change requested by Gull because it needed more time for research and development and for obtaining system components and equipment from vendors. The Air Force approved Gull's request, extended the installation completion date to March 31, 1986, and penalized Gull by reducing the contract price by $1,800. The decision on the cold weather test was still pending when the time extension was approved.

The Air Force concluded that the time extension was in the best interest of the government because

1. default by the contractor would result in much higher costs based on the need to recompete the contract and the price offered by the second low bidder was $587,528, compared with Gull's price of $257,585,[1] after contract modifications;

2. Gull had not received progress payments and had nothing to gain by delaying the project;

3. delays were caused by problems normally associated with new systems; and

4. DSDO and contracting officials believed that Gull would be able to meet all system specifications.

According to Air Force officials responsible for the contract, the Air Force decided early in February 1987 against having Gull conduct additional cold weather tests at Sawyer because (1) DSDO personnel observed cold weather tests at Gull's plant that met contract

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[1]Gull's price reflects the net increase for additional equipment items requested by the Air Force less reductions for contractor delays.

specifications, (2) Gull proposed to undertake the additional tests at Sawyer for an additional $140,000, which exceeded available funding, and (3) additional cold weather prototype system testing can be conducted by the Air Force once it assumes ownership of the prototype.

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