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UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548

PROCUREMENT AND SYSTEMS
ACQUISITION DIVISION

B-133394

SEPTEMBER 12, 1979

The Honorable Robert A. Frosch
Administrator, National Aeronautics
and Space Administration

Dear Dr. Frosch:

Subject: Review of Selected Contracts Awarded
by NASA's Goddard Space Flight Center
(PSAD-79-103)

In our survey of contract administration at the Goddard Space Flight Center, we identified three service contracts out of nine that we reviewed that were either written improperly or appeared to lack the essential internal controls for minimizing fraud and assuring that contracted services are actually provided. These three contracts are for painting, operation of the Goddard health unit, and computer support. In our opinion, the National Aeronautics and Space Administration's (NASA's) partial payments for the painting and health unit contracts appear excessive and there is a need to improve the internal controls over the computer support contract.

We discussed our findings and recommendations with Goddard managers. However, because the painting contract was written and administered so poorly, we also briefed members of your Inspector General staff. They have agreed to investigate to determine if any fraudulent actions occurred.

Certain changes are required in NASA's procurement regulations and policies concerning floor checks and the use of cost-plus-award-fee contracts to prevent a recurrence of the problems we found at Goddard. You should instruct the appropriate NASA officials to implement the recommendations contained in the enclosure on pages 4, 8, and 10 and advise us of the actions taken or planned.

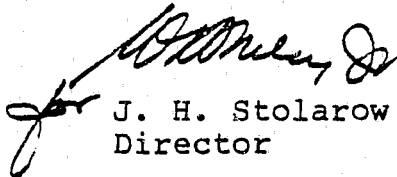
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As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement of actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the four committees mentioned above; the House Committee on Science and Technology; its Subcommittee on Space Science and Applications; the Senate Committee on Commerce, Science and Transportation; its Subcommittee on Science, Technology, and Space; and the Director, Office of Management and Budget.

Sincerely yours,



J. H. Stolarow
Director

Enclosure

SUMMARY OF FINDINGSPAINTING CONTRACT

On March 29, 1979, NASA negotiated a sole-source contract (NAS5-25229) with a private firm under the Small Business Administration section 8a program 1/ for maintenance painting of buildings 5, 6, and 7 at the Goddard Space Flight Center in Greenbelt, Maryland, for a fixed price of \$82,180. The contract contains an option to paint building 10 for \$23,480 for a total contract price of \$105,660. NASA provides all paint and materials.

Fixed-price contract undefined

The specifications in the contract do not adequately define the work to be performed. Although the contract includes a fixed price for painting each of the four buildings, it does not state what portions of each building are to be painted, how many coats of paint are to be applied, or any other finite measure of work. Also, there is no indication of the square feet of surface area to be painted or the number of hours of painting to be performed for the contract price of \$105,660. These and other contract performance decisions are to be made by the contracting officer's technical monitor. Firm fixed-price contracts should not be used unless reasonably definite performance specifications are used and fair and reasonable prices can be established.

Incorrect Goddard estimate of the work to be performed

Goddard's technical monitor estimated 3,780,000 square feet of surface area to be painted in buildings 5, 6, 7, and 10. This estimate was 8 times larger than it should have been because he mistakenly multiplied the number of hours it took the prior contractor to paint the buildings times a standard of 500 square feet, rather than the number of days times 500 square feet (a standard used by Goddard's Plant Operations and Maintenance Division). Using the correct standard, the estimate should have been 472,500 square feet, not 3,780,000 square feet.

1/Section 8(a) of the Small Business Act of 1953 authorizes the Small Business Administration to enter into procurement contracts with Federal agencies and, in turn, to subcontract the work to small businesses owned by socially or economically disadvantaged persons.

The contracting officer used the technical monitor's inaccurate square foot figure to arrive at an estimated cost of 2.8 cents per square foot. Corrected, the estimate should have been 22.4 cents per square foot (8 times 2.8 cents). NASA actually paid the contractor about 27.8 cents per square foot, not including the cost of paint or materials. This price of 27.8 cents per square foot appears to be excessive when compared to the 10.5 cents per square foot price in another Goddard contract (NAS5-25228) that includes the cost of all paint and materials.

Improper contract administration

Painters do not meet contract qualification requirements

Although the contract specifically requires four apprentice painters in their second year of training, the contractor is only providing three apprentice painters in their first year of training. The technical monitor permitted this contract violation to continue despite the fact that the wages paid by the contractor for first-year apprentices are lower than the wages the contractor would have to pay for apprentices in the second year of training.

Also, the technical monitor's son is one of the three apprentice painters on this contract. When we brought this fact to the monitor's attention, he admitted knowing his son was working on the contract. Although he recognized the problems this might create, he said his son needed a job.

Contractor's request for payment appears excessive

On May 2, 1979, the contractor submitted an invoice to the technical monitor for \$14,716 for painting 47 percent of building 5. The monitor signed the invoice and approved it for payment with no attempt to determine if in fact 47 percent of building 5 was painted. When asked why he did this, he explained that he would not give the contractor the remaining funds for painting building 5 until the building was completed to his satisfaction.

The contractor's payroll records showed that the contractor had paid only \$6,096 in painters' wages as of May 2, 1979, the date of the invoice for \$14,716. When we discussed the large difference with the technical monitor, he said he thought the contractor's invoice may be too high. As a result, he retrieved the May 2, 1979, invoice that he had approved earlier for \$14,716 and arbitrarily reduced it to \$12,524.

We question the technical monitor's approval of this invoice without first measuring the actual square feet painted.

Calculation of actual square feet
of surface area painted is incorrect

After approving the invoice, the technical monitor attempted to measure the actual number of square feet painted as of May 2, 1979. Using the floor plan for building 5, he said he added the square feet for all the rooms that were actually painted. In this manner, he calculated that 104,491 square feet had been painted as of May 2, 1979.

To evaluate this calculation, we multiplied the 100 gallons of paint that Goddard provided to the contractor through May 4, 1979 times the manufacturer's specifications of 450 square feet per gallon. This calculation shows that the contractor could not have painted much more than 45,000 square feet (100 gallons times 450 square feet equals 45,000) as of May 2, 1979.

The technical monitor could not explain why his calculation of 104,491 square feet was more than double the 45,000 square feet possible with the paint provided by Goddard. We inspected building 5 at this time and found that several offices the monitor indicated had been painted were in fact not painted. In addition, large office areas covered with wallpaper were included in the monitor's calculation of surface area painted.

Building 10 may not
need to be painted

The need to paint building 10 is questionable because the building was not scheduled to be painted this year and it is not the type of building normally requiring maintenance painting. Goddard's Plant Operations and Maintenance Division has a maintenance painting schedule to show when each building at Goddard should be painted. Buildings 5, 6, and 7 were scheduled to be painted this year, but building 10 was not. The technical monitor said he randomly selected building 10 without determining whether it needed to be painted.

The monitor also said that maintenance painting normally includes painting only such areas as office space and stairwells, not those areas devoted to laboratories, testing stations, or experiments. Building 10 contains very little office space with practically the entire building devoted to

experimental and testing areas that would not normally be painted under the maintenance painting concept.

Recommendations

We recommend that Goddard officials:

- Terminate or renegotiate the painting contract with new specifications to better define the work to be performed.
- Determine why the imperfections in this contract were not detected during the contract review process prior to award and make any necessary changes to the review process to preclude a similar occurrence.
- Remove the technical monitor on this contract because of the conflict-of-interest situation.
- Determine whether the contractor has received any excess payments and, if so, recover them.
- Determine whether building 10 needs to be painted before exercising the option to paint it.

HEALTH SERVICES CONTRACT

On March 27, 1979, Goddard awarded a cost-plus-award-fee contract (NAS5-25624) to a private firm to provide various medical services, including operation of the Goddard health unit. The contract contains an option allowing NASA to renew it for an additional 2 years. For the reasons discussed below, we believe use of an award-fee contract was inappropriate.

Misuse of contract type

The same firm has operated the Goddard health unit under a cost-plus-fixed-fee contract for the last 4 years. The Director, Administration and Management Directorate, decided to convert to an award-fee contract to stimulate competition and motivate the contractor to improve its performance. In our opinion, these objectives were not achieved since only one other proposal was received and the current contract is not structured in such a way as to motivate the contractor to improve.

The maximum award fee possible under this contract is 8 percent. There is no base fee. The contract is structured so that the contractor automatically receives 7 of the maximum 8-percent fee unless performance falls below a "sustained acceptable level." At that point, the Performance Evaluation Board can convene to determine if the 7-percent award fee should be reduced. However, the contract does not define what is meant by sustained acceptable level.

This contract, in our opinion, is inconsistent with NASA's policy that award-fee contracts should not be used when a sound description of what constitutes acceptable or improved levels of work cannot be outlined. In such cases, it is NASA's policy to use a fixed-fee contract. This policy is contained in NASA Handbook 5104.3a. NASA procurement regulations, however, do not contain this limitation.

The contract technical monitor stated that neither he nor anyone else at Goddard is technically qualified to evaluate the contractor's performance or to tell the contractor how to improve. For that reason, Goddard officials structured the contract so that 7 percent of the award fee is awarded automatically without evaluating the contractor's performance.

The 1-percent balance of the award fee is reserved, and the amount earned is to be determined at the end of each contract year. The contractor may earn all or part of the 1-percent fee based on events which demonstrate the contractor's "initiative" and "innovativeness." These terms are also not defined in the contract. The provisions of this contract, in our opinion, are contrary to the concept of using award-fee contracts to motivate the contractor through the potential of increased profits. The 1-percent balance is too small to effectively motivate the contractor. In addition, we question the need for an award-fee contract in light of Goddard officials' statements that they have been very satisfied with the contractor's performance for the last 4 years under fixed-fee contracts. The previous contract with the firm provided for a 6.5-percent fixed fee.

Failure to verify that services
paid for are actually received

The Goddard contract for operation of the health unit requires the contractor to provide approximately 33,000 staff-hours per year, or the equivalent of about 17 personnel consisting of doctors, nurses, technicians, and others. In addition, the contract requires that five named key personnel provide a certain number of hours each week.

The NASA technical monitor assigned to this contract said he does not perform onsite inspections (floor checks) to verify whether the contractor is actually providing the number of direct labor hours submitted for reimbursement. He does not see any reason to make floor checks because he feels the contractor is performing satisfactorily. Instead of floor checks, he relies upon the contractor's monthly and quarterly financial reports as the basis for certifying that all required labor hours are provided.

This is consistent with a current Goddard policy that technical monitors should not perform periodic floor checks. When the NASA Office of Audit recommended that Goddard's technical monitors should perform periodic floor checks and document their observations for use in approving the contractor's invoices, 1/ Goddard management disagreed. Goddard's Office of Chief Counsel interpreted a 1973 District Court decision 2/ to mean that NASA technical monitors should not perform periodic floor checks because they would be subject to criticism for directly supervising contractor employees. NASA Headquarters agreed with the position taken by Goddard management that technical monitors should not perform floor checks. It identified auditors from the Defense Contract Audit Agency located at Goddard as the individuals who should perform this work. Technical monitors can assist the auditors, if requested.

We disagree with this position for several reasons. The 1973 District Court decision that led to Goddard's policy against floor checks was finally decided by the U.S. Court of Appeals for the District of Columbia on March 20, 1978. The court held that only relatively continuous, close supervision of a substantial number of contractor employees was sufficient to constitute a basis for declaring a contract to be illegal. Consistent with this latest opinion, which discusses in detail the type of supervision necessary to constitute an employee relationship, we believe that periodic floor checks would not place the technical monitor in the position of assuming the prohibited supervisory relationship with contractor employees as long as the monitor does not attempt to direct or control their work.

1/Audit Report No. NE-10-76.

2/Lodge 1858, American Federation of Government Employees v. Webb, Administrator, NASA.

In addition, the technical monitor, not the Defense Contract Audit Agency auditor, is often the only person in a position to know whether the labor hours are properly applied and whether the contractor's payroll reflects the actual work required under the contract. Also, usually only the technical monitor knows the technical nature of the work and the movement of contract personnel to various work locations.

Furthermore, the auditor at Goddard said he has only performed three floor checks from September 1978 to April 1979 because of limited time and higher priorities. We doubt that three floor checks in 8 months is sufficient to act as a deterrent to false contractor claims when there are about 3,000 contract employees located at Goddard.

We believe Goddard's policy prohibiting technical monitors from performing periodic floor checks is not in the best interests of the Government because it invites contractor fraud and does not assure that NASA gets what it is paying for. The failure to make such checks may result in NASA's paying for services not received, such as occurred at NASA's Ames Research Center where one contractor was paid approximately \$10,000 for 1,300 hours not provided. (See NASA Office of Audit Report No. NW-6-78.)

We believe that one of the responsibilities of the technical monitor should be to establish a system of surveillance of contractor activities that will insure receipt of the labor hours paid for. The technical monitor should perform periodic floor checks to verify that the contractor's time and attendance reports are accurate. Although the frequency and method of performing floor checks should be determined on a contract-by-contract basis, they should be performed often enough to effectively deter and discourage false claims.

Recommendations

We recommend that:

- The option to renew the health services contract should not be exercised. The renewal contract should be converted back to a fixed-fee contract as it has been for the prior 4 years.
- NASA procurement regulation 3.405.5(d)(1) should be amended to incorporate the limitation contained in the NASA Handbook 5104.3a to prevent the use of award-fee contracts when a sound description of what constitutes acceptable or improved levels of work cannot be

outlined. (Exceptions should require approval from NASA Headquarters.)

- NASA Headquarters should determine if any NASA centers have similar award-fee contracts in which most of the award fee is paid automatically. Any such contracts should be reviewed to determine their potential for conversion to a fixed-fee or some other more appropriate contract.
- Goddard's policy prohibiting technical monitors from performing periodic floor checks should be reevaluated in light of the March 20, 1978, Appeals Court decision.
- Then, the technical monitor on this contract should periodically perform floor checks to verify the accuracy of contractor-submitted time and attendance reports to insure that the labor hours paid for are actually received. Furthermore, the monitor should document his observations and use this data in approving the contractor's invoices.
- All NASA centers should be informed that technical monitors should perform periodic floor checks often enough to act as a deterrent to false contractor claims.
- If a NASA center relies partially on Defense Contract Audit Agency auditors to perform floor checks, center management should assure that floor checks are performed often enough to act as an effective deterrent.

COMPUTER SUPPORT CONTRACT

The contract for operating Goddard's computerized management information systems (NAS5-23472) provides for about 50 people to operate a Government-furnished general purpose computer, write computer programs, and perform various software services to meet Goddard's management information requirements. These people have access to the computer 24 hours a day.

Computer support contract has potential for fraud

We are concerned that Goddard's security procedures to detect and prevent fraudulent or unauthorized use of this computer by contract employees may not be adequate because

(1) contractor employees process Goddard's sensitive financial systems, which include the payroll and accounting functions, (2) Goddard's surveillance of contractor employees operating the computer is limited, (3) the technical monitor assigned to this contract acknowledges that controls are not in place to prevent or detect unauthorized use of the machine by contractor employees, (4) no independent review of the security procedures has been done to determine if they are adequate to detect and prevent fraudulent use of the computer by contractor employees, and (5) two NASA contractors have been discovered using NASA computers for fraudulent or unauthorized purposes in the last few years.

Although we did not perform a detailed review of the security procedures currently in place, we did discuss the adequacy of the controls with Goddard officials. They agreed that this computer is susceptible to misuse because of its general purpose capabilities, the contractor's ready access to the computer, and the sensitivity of the information processed by contract employees.

Experience has shown that the greatest threat to security comes from authorized users who have complete access to and control of the computer combined with the sophisticated knowledge to manipulate all computer-generated data.

Although the contract employees have access to the computer 24 hours a day, Goddard surveillance is limited to the 10 or 11 hours during the normal working day. According to the technical officer, large-scale misuse of the computer for an extended period of time was highly unlikely, but there were no controls to prevent the contractor's unauthorized use of the machine for short periods of time.

NASA officials have already commented on this matter of surveillance in response to our May 9, 1978, letter regarding the alleged contractor misuse of a NASA computer at the Johnson Space Center. In commenting on the fact that Johnson Space Center personnel did not provide surveillance of the contractor's work on the second and third shifts, NASA officials concluded that if a contractor or its employees are inclined to misuse Government computers and Government surveillance is not present, the likelihood of misuse is greatly increased. We agree.

The Office of Management and Budget, in July 1978, directed all agencies to develop and implement computer security programs. As a result, NASA developed a program, to be issued shortly, for performing risk assessments on NASA computer facilities.

Recommendations

We recommend that NASA's risk assessment program be applied to this computer facility as soon as possible to determine what threats exist, their significance, and the cost of any additional controls needed to prevent unauthorized or fraudulent use. If the risk assessment shows that the additional security procedures needed are not cost effective, NASA should consider using Goddard employees to provide these services.

END