

NOVEMBER 19, 2013

AUDIT REPORT

OFFICE OF AUDITS

NASA'S USE OF AWARD-FEE CONTRACTS

OFFICE OF INSPECTOR GENERAL



National Aeronautics and
Space Administration

Final report released by:



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Acronyms

AFES	Award Fee Evaluation System
ATMS	Advanced Technology Microwave Sounder
COTR	Contracting Officer's Technical Representative
DOD	Department of Defense
FAR	Federal Acquisition Regulation
FDO	Fee Determination Official
FY	Fiscal Year
GAO	Government Accountability Office
GOES	Geostationary Operational Environmental Satellites
HQ	Headquarters
OIG	Office of Inspector General
OMB	Office of Management and Budget
PIC	Procurement Information Circular
SOFIA	Stratospheric Observatory for Infrared Astronomy

OVERVIEW

NASA'S USE OF AWARD-FEE CONTRACTS

The Issue

The Federal Acquisition Regulation (FAR) outlines the contract vehicles available to Federal agencies for acquiring goods and services, including fixed-price contracts and cost-reimbursement contracts. In fixed-price contracts, the contractor agrees to deliver a product or service at a price not to exceed an agreed amount. Agencies generally use fixed-price contracts when costs and risks can be clearly defined, for example when purchasing commercially available items such as laptop computers. In contrast, in cost-reimbursement contracts the agency agrees to pay for all allowable costs the contractor incurs in delivering the service or product. Cost-reimbursement contracts involve increased risk for the Government and are generally more appropriate when performance uncertainties or the likelihood of changes make it difficult to accurately estimate costs in advance. Because this describes many NASA projects, such as development of spacecraft, cost-reimbursement contracts are quite common at NASA.

Incentive contracts are a type of contract in which a predetermined amount of money is set aside for the contractor to earn based on its performance. Properly structured incentive contracts can reduce the risk of cost overruns, delays, and performance failures by providing a well-performing contractor the opportunity to earn additional money.

Award-fee contracts – which NASA has used since the 1960s – are one type of incentive contract. An award fee is a pool of money a contractor may earn in whole or in part by meeting or exceeding predetermined performance criteria. NASA uses award-fee contracts to motivate contractor performance and as a means to periodically evaluate that performance. However, in past audits the NASA Office of Inspector General (OIG) found that award-fee amounts did not conform to NASA policy, the Agency used these contracts when another contract type would have been more appropriate, and the contracts did not in fact motivate improved contractor performance.¹ Similarly, the Government Accountability Office (GAO) has consistently reported that Federal agencies

¹ NASA OIG, “Final Memorandum on Audit of the Stratospheric Observatory for Infrared Astronomy (SOFIA) Program Management Effectiveness” (IG-09-013, March 27, 2009); “NASA Should Reconsider the Award Evaluation Process and Contract Type for the Operation of the Jet Propulsion Laboratory” (IG-09-022, September 25, 2009); and “Review of NASA’s Microgravity Flight Services” (IG-10-015, June 18, 2010).

paid contractors billions of dollars in award fees regardless of acquisition outcomes.² GAO also found that agencies had not compiled data, conducted analyses, or developed performance measures to evaluate the effectiveness of award fees.

In December 2007, the Office of Management and Budget (OMB) issued guidance aimed at improving the use of award-fee contracts.³ The guidance includes limiting opportunities for contractors to earn fees not awarded in one period in subsequent award periods, linking award fees to acquisition outcomes, designing evaluation criteria to motivate excellent performance, and not paying for unsatisfactory performance. In response to GAO recommendations and OMB guidance, NASA revised its policies in an effort to support increased accountability and effectiveness when using award fees. Additionally, the NASA Assistant Administrator for Procurement requires staff to obtain his prior approval before entering into award-fee contracts.

We initiated this audit to determine whether NASA was effectively using award fees to motivate contractor performance and improve acquisition outcomes. To accomplish our objectives, we identified 186 NASA award-fee contracts with obligations made in fiscal years (FY) 2009 through 2011.⁴ From the 186 contracts, we statistically selected a random sample of 45 with estimated costs and available award fees of approximately \$44.3 billion. Details of the audit's scope and methodology are in Appendix A.

Results

We found that although NASA implemented processes intended to improve contractor performance and acquisition outcomes, a number of questionable practices, including overly complex award-fee formulas and a contract clause designed to hold contractors accountable for the quality of the final product that disregards interim performance evaluations, have diminished the effectiveness of award-fee contracts at the Agency. In addition, NASA failed to collect required data on award-fee contracts, reducing its ability to measure their effectiveness. We identified incorrect payments and questioned costs totaling \$69.7 million.⁵ We also concluded that NASA expended approximately \$7.4 million to administer performance evaluations on contracts for which performance objectives were undefined, determinations that an award-fee contract was the most

² GAO, "Defense Acquisitions: DOD Has Paid Billions in Award and Incentive Fees Regardless of Acquisition Outcomes" (GAO-06-66, December 19, 2005); "NASA Procurement: Use of Award Fees for Achieving Program Outcomes Should Be Improved" (GAO-07-58, January 17, 2007); "Federal Contracting: Guidance on Award Fees Has Led to Better Practices but Is Not Consistently Applied" (GAO-09-630, May 29, 2009); and "Federal Contracting: Application of OMB Guidance Can Improve Use of Award Fee Contracts" (GAO-09-839T, August 3, 2009).

³ OMB Memorandum, "Appropriate Use of Incentive Contracts," December 4, 2007.

⁴ Obligations, as used here, are allotments of funding added to a contract. This differs from the total estimated cost, which is an estimated ceiling of a contract's total cost upon completion of requirements.

⁵ In the text, we rounded dollar figures above \$1 million to the nearest \$100,000 resulting in minor differences when components are totaled. See Appendix C for exact dollar amounts.

beneficial type of contract were not made, and relevant management information for informed decision-making was not gathered.

We found that for 26 of the 45 contracts we reviewed contracting officers incorrectly calculated provisional and interim award-fee payments because the mathematical formulas they are required to use are overly complex and vary depending on whether the contract is for an end-item deliverable or for services. Consequently, NASA incorrectly paid contractors approximately \$66.4 million in provisional and interim payments during evaluation periods than permitted by the NASA FAR Supplement.⁶ Moreover, we found the Agency had no controls for monitoring the accuracy of its provisional and interim payment calculations.

We also found an issue with how NASA applies a clause unique to end-item deliverable contracts informally known as the “look-back clause.”⁷ The Agency developed the Award Fee for End-Item Contracts clause in response to negative publicity in the media and scrutiny from the OIG and GAO. For contracts with this clause, NASA evaluates contractor performance and makes interim award-fee payments throughout the course of the contract, but the amount of award fee the contractor ultimately receives is based upon demonstrated performance of the end-item deliverable. However, NASA includes in the final award pool any funds not awarded to the contractor in interim periods.

We believe the practice of including unearned funds from interim award periods in the final award pool circumvents the FAR provision prohibiting rollover of unearned fees to subsequent performance periods and promotes a philosophy that as long as a mission provides good science data the Agency will overlook cost and schedule overages. Our review included three end-item contracts for which NASA has completed final evaluations of the contractor’s performance. For one of these contracts, NASA paid approximately \$835,470 in award fees drawn from amounts that were “rolled over” from interim evaluation periods. We question the appropriateness of these payments.

We also identified seven questionable evaluation and acquisition practices that contributed to ineffective use of award-fee contracts at NASA. Specifically, we found award fees were incorrectly allocated to post-launch periods; questionable combining of award-fee periods; award fees not justified by contractor performance; excellent ratings not supported by technical, cost, and/or schedule performance; cost control criterion not evaluated at 25 percent as required; available award-fee pool was not defined or allocated; and failure to complete required analysis and documentation to support the contract type used. We determined that because of these questionable practices NASA paid approximately \$2.4 million in excess award fees for the 45 contracts we reviewed.

⁶ Provisional award fees are payments made within evaluation periods prior to an interim or final evaluation for that period. Interim award fees are the amount of fee that a contractor receives at the completion of each award fee period based on the evaluation of its performance by NASA. Incorrect payments made during evaluation periods can be addressed prior to the end of the contract. See OIG Recommendation 4 on page 13.

⁷ NASA FAR Supplement, Section 1852.216-77, “Award Fee for End-Item Contracts.”

We also determined that NASA expended more than \$250,000 evaluating contracts for which performance objectives were undefined or for which it had not determined that an award-fee contract was the most beneficial type of contract for the services provided.

Finally, we reviewed NASA's Award Fee Evaluation System (AFES), which includes contracting officers' evaluations describing how award-fee contracts motivated contractor performance and enhanced contract objectives. We examined 245 of these evaluations and found that 143 did not satisfy FAR requirements, NASA FAR Supplement requirements, or NASA Office of Procurement guidance. Specifically, these statements did not adequately explain whether the use of award fees was a positive factor in motivating contractor performance or enhanced specific acquisition objectives. NASA's failure to ensure the quality of data entered has impaired its ability to measure the effectiveness of current award-fee contracts and reduced its ability to correct deficiencies thereby adversely affecting the quality of future contract sourcing decisions. We also determined that NASA expended approximately \$7.2 million evaluating 143 contract periods for which they did not gather relevant management information for informed decision-making.

We identified 54 instances of improper or questionable practices involving 14 separate issue areas in the 45 contracts we reviewed (see Appendix B for a listing of the issues by contract and Appendix C for the monetary impact by contract). These issues raise significant concerns about NASA's ability to effectively motivate contractor performance and improve acquisition outcomes using award-fee contracts.

Management Action

To improve NASA's administration and oversight of award-fee contracts and ability to motivate contractor performance, we recommended that the Agency reexamine its policies and procedures for (1) calculating interim and provisional payments, (2) using the Award Fee for End-Item Contracts clause, (3) ensuring adequate internal controls are in place to prevent errors in the administration of award-fee contracts, and (4) capturing required award-fee data.

Specifically, for each of the four areas, we recommended that the Assistant Administrator for Procurement take the following actions:

Interim and Provisional Payments

- Simplify the mathematical formulas used to calculate interim and provisional payments and update the NASA FAR Supplement accordingly.
- Require that the same formula be used for service and end-item contracts and update the NASA FAR Supplement accordingly.
- Implement a process to test the accuracy of award-fee calculations on an ongoing basis.

- Direct contracting officers to review on-going award-fee contracts to ensure that calculations are appropriate and accurate for contract type and adjust contract payments as necessary.
- Provide additional training to Agency contracting officers on proper calculation of award-fee payments.
- Consider eliminating provisional award-fee payments.

Award Fee for End-Item Contracts Clause

- Revise NASA FAR Supplement 1852.216-77 so that award fees not earned in interim evaluations are not available to contractors at the end of contract performance or use the end-item contract final evaluation only for downward adjustments following catastrophic events or failures. Alternatively, NASA should designate a specific percentage of the total award pool that will be available for the final performance evaluation.
- Issue guidance requiring performance evaluation plans to contain specific criteria for the final evaluation for end-item contracts.

Evaluation and Acquisition Practices

- Reemphasize or issue additional guidance, as applicable, prohibiting the combination of award-fee periods, reemphasizing that award fees shall be commensurate with the work performed, setting forth the criteria that must be met to receive an overall rating of excellent, establishing that the evaluation of cost shall be at least 25 percent of the total evaluation weighting, and the importance of completing the required cost-benefit analysis prior to contract award.

Award Fee Evaluation System

- Provide examples to assist contracting officers in developing the types of analyses for entry into AFES.
- Require contracting officers to document in AFES an explicit link between contract performance and award fees to ensure the database provides useful data for evaluating contractor performance and to support management decisions on current and future award-fee contracts.
- Develop a process to improve monitoring and analysis of the information entered into AFES to ensure adequate data quality and compliance with the FAR, NASA FAR Supplement, and NASA Office of Procurement guidance and improve outcomes when using award-fee contracts.

In response to our draft report, the Assistant Administrator for Procurement concurred or partially concurred with our recommendations and proposed corrective actions to:

(1) implement a process to test the accuracy of award fee calculations; (2) review on-going award-fee contracts to ensure that calculations are appropriate and accurate; (3) provide additional training on award-fee payment calculations; (4) reemphasize or issue additional guidance to address the evaluation and acquisition deficiencies we identified; and (5) develop a process to improve monitoring and analysis of the information entered into AFES.

We consider the actions proposed by the Assistant Administrator for all but the second of these recommendations to be responsive and will close the recommendations upon completion and verification of those actions. With regard to reviewing calculations related to on-going contracts, the Assistant Administrator stated that he would communicate with Center Procurement Officers to emphasize the importance of correctly calculating payments. However, our recommendation was to review on-going contracts to identify and correct erroneous payments. Because we do not believe the Assistant Administrator's proposed action will achieve our objective this recommendation remains unresolved.

Although the Assistant Administrator concurred with our recommendation to reemphasize or issue additional guidance to address the evaluation and acquisition deficiencies we identified, he challenged our methodology for calculating the \$2.4 million in questioned and unsupported costs associated with the recommendation. However, the Assistant Administrator points to only one example of alleged error – namely, that our assumption regarding the “25 percent rule” is flawed because “it does not take into account the contractor's performance with regard to cost control under this contract.” Our point is simply that NASA did not evaluate cost control as a separate evaluation factor weighted at a minimum of 25 percent as required by the NASA FAR Supplement; therefore, the percentage difference between what was evaluated (0 percent for one contract and 5 percent for another) is unsupported costs.

The Assistant Administrator non-concurred with our recommendations to: (1) simplify interim and provisional payment mathematical formulas; (2) require the same formula for service and end-item contracts; (3) consider eliminating provisional award fee payments; (4) revise NASA FAR Supplement 1852.216-77 to prevent contractors from receiving award fees not earned in previous periods; (5) require specific criteria for the final evaluation of end-item contracts; (6) provide examples to assist contracting officers in developing AFES entries; and (7) require contracting officers to document explicit links between contract performance and award fee.

The Assistant Administrator stated that he disagreed with the analysis and findings that motivated these recommendations and suggested they were based on a misunderstanding of award-fee contract principles. Specifically, he stated that we inappropriately applied the term “rollover of unearned award fee” to NASA's end-item award-fee concept because although NASA pays contractors award fees in interim evaluation periods under these contracts, those payments are not final until the last evaluation period. Therefore, the Assistant Administrator reasoned, interim award fees are not “earned” within the meaning of the FAR until that final evaluation and any unpaid amounts from interim

periods remain available to the contractor without contravening the “no-rollover” rule. He also stated that the report does not provide support for the observation that how NASA administers end-item award fees promotes a philosophy that cost and schedule challenges will be overlooked so long as the end product performs well. We disagree with both points.

First, although we acknowledge that interim award-fee payments are not final in the sense that the Agency can adjust them at the end of contract performance, we believe that the Assistant Administrator’s definition of “earned” is too narrow and elevates form over substance. Neither the FAR nor the NASA FAR Supplement defines the terms “earned” or “unearned.” Although “earned” may mean to receive and retain as the Assistant Administrator suggests, the term “earned” may also be used to signify that an entity “merits” an award and in this context the word does not necessarily denote finality or permanence.

Indeed, as noted in our report NASA itself uses the term “earned” to refer to award fee in interim periods. For example, in the Aerojet General Corporation (Aerojet) contract referenced in our report under Paragraph 4.1, Periodic Performance, “The Government will determine the amount of award fee earned for periodic performance on the basis of a concurrent evaluation...,” and in Paragraph 7, Documentation of Performance, “...documentation will serve as the basis for the evaluation, scoring, and recommendation of earned award fee...” In addition, Fee Determination Official (FDO) letters to the contractor referenced the amount “earned” for the period of performance. Similarly, the contract contains an appendix for documenting award fee paid throughout performance of the contract that contains a column labeled “earned” for each evaluation period.

The FAR defines rollover as “the process of transferring unearned award fee, which the contractor had an opportunity to earn, from one evaluation period to a subsequent evaluation period, thus allowing the contractor an additional opportunity to earn that previously unearned award fee.” We found that NASA’s current practice for end-item contracts permits exactly that because it gives contractors a second chance to receive money the Agency initially determined their interim performance did not warrant. In our judgment, this is the essence of what the FAR aimed to prevent by prohibiting “rollover.”

Moreover, contrary to the Assistant Administrator’s assertion, we provided a clear example of an instance in which application of NASA’s end-item award fee policy resulted in minimizing cost and schedule challenges during the course of a project based on a later successful outcome. Specifically, we pointed to the Aerojet contract in which NASA determined that the contractor’s performance merited only 84 percent of the available award fee in the interim periods due to cost growth, management deficiencies, and program delays but awarded the contractor 95 percent of the total available award fee after final evaluation. We believe NASA’s final evaluation letter to the contractor from the FDO clearly supports our contention that when a mission provides good science, prior poor performance on the part of the contractor will be forgiven:

In the final look back, the evaluation board members concluded that [Aerojet's] development of the [instrument] led to an outstanding instrument, which has been operating flawlessly since on-orbit power up last November. The evaluation team noted that the evaluations declined after Award Fee Period 1 due to subcontractor issues resulting in Award Fee Period 4 scores of 40 percent for Program Management and 64 percent for Milestone and Schedule Management. At that point, [Aerojet] upper management recognized the seriousness of the problem, removed the old management team and added a new aggressive team who turned this project around, resulting in exceptional performance. [Aerojet] is commended for their responsiveness in correcting these issues during the early stages of this contract resulting in the board members adjusting the final scores for Program Management and Milestones & Schedule to 96 percent and 94 percent, respectively.

Although we agree that contractors should be rewarded for improved performance during the course of a project, award fee is designed to incentivize consistent performance over the life of the contract (which presumably will lead to better outcomes overall); therefore, adjusting final performance scores when that performance was appropriately scored during interim periods is inconsistent with the underlying purpose of an award fee contract and not in the best interest of the Government. NASA, as part of the Defense Acquisition Regulations Council, was clear on this point when it responded to a suggestion that the FAR prohibition on rollover be revised to allow it under certain circumstances. Specifically, NASA said:

If a contractor did not perform adequately during an award-fee rating period and was rated appropriately and then allowed to recover that unearned award fee in a subsequent period, the incentive for the contractor to perform consistently throughout the entire contract would be reduced.⁸

The Assistant Administrator also contends that we disregard a GAO follow-up assessment that did not find indications of rollover in NASA contracts. We spoke to the GAO auditors who performed that review and were told that they looked at seven NASA contracts only to determine whether the contracts contained an explicit rollover clause. In addition, none of the contracts GAO reviewed were complete at the time and all of them appear to be service rather than end-item contracts. Moreover, the GAO auditors told us they would not have identified the issue we raised relating to end-item contracts as a result of their limited review. Therefore, the Assistant Administrator's reliance on GAO's assessment that NASA was not utilizing unearned award-fee rollovers in its award-fee contracts is misplaced.

The Assistant Administrator also claims that our report creates the impression that NASA overpaid contractors \$66.4 million due to mathematical errors on interim and provisional award-fee payments. However, we clearly state on page 10 that NASA can correct these erroneous payments at any time over the life of the contract or at the end of the contract.

In addition, the Assistant Administrator takes issue with what he terms "questioned costs" of \$7.2 million we estimated NASA spent to conduct evaluations in 143 award fee

⁸ Federal Register, Volume 75, Number 188, Page 60261, September 29, 2010.

periods we found were not in compliance with requirements and for which the Agency did not gather relevant management information to assist in informed decision-making. However, we did not label this figure as questioned costs and included it simply to illustrate the importance of collecting data of sufficient quality given the expense associated with the evaluation process.

NASA spends approximately 80 percent of its budget each year on contracts to procure goods and services and to provide funding to grant and award recipients. Given the large sums at stake, we intend to continue to monitor NASA's performance with regard to administering these contracts and grants and to work with the Agency to find solutions to the deficiencies noted in our report.

We summarize the Assistant Administrator's response to each of our recommendations and evaluate those responses in the body of the report. Management's full response is reprinted in Appendix D.

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INTRODUCTION

Background

The Federal Acquisition Regulation (FAR) outlines the contract vehicles available to Federal agencies for acquiring goods and services, including fixed-price contracts and cost-reimbursement contracts. In fixed-price contracts, the contractor agrees to deliver a product or service at a price not to exceed an agreed amount. Agencies generally use fixed-price contracts when costs and risks can be clearly defined, for example when purchasing commercially available items such as laptop computers. In contrast, under cost-reimbursement contracts an agency agrees to pay for all allowable costs the contractor incurs in delivering the service or product. Cost-reimbursement contracts involve increased risk for the Government and are generally more appropriate when it is difficult to accurately estimate costs in advance. Because this describes many NASA projects such as development of spacecraft, cost-reimbursement contracts are common at NASA.

Incentive contracts are a type of contract in which a predetermined amount of money is set aside for the contractor to earn based on the contractor's performance. Properly structured incentive contracts can reduce the risk of cost overruns, delays, and performance failures by providing a well-performing contractor the opportunity to earn additional money.

Award-fee contracts are one type of incentive contract. NASA has been using award-fee contracts since the 1960s. An award fee is a pool of money that a contractor may earn in whole or in part by meeting or exceeding predetermined performance criteria. In fiscal year (FY) 2012, NASA spent approximately \$15.1 billion on contracts, \$7.1 billion of which were award-fee contracts.

Advantages of Award-fee Contracts. When properly crafted and administered, award-fee arrangements can be valuable tools for motivating contractor performance in areas an agency deems critical to program success. First, tying monetary incentives to particularly important tasks or goals focuses the contractor's attention on those issues. Second, award-fee contracts provide flexibility to adjust criteria and its weight over time. Finally, because periodic evaluations provide an opportunity to address performance issues, award-fee contracts can enhance communication between the Government and contractors.

Challenges of Award-fee Contracts. Prior work by the NASA Office of Inspector General (OIG) and the Government Accountability Office (GAO) has shown mixed results from NASA's use of award-fee contracts. For example, in March 2009, we reported that managers of NASA's Stratospheric Observatory for Infrared Astronomy

Program failed to include cost control as a performance evaluation factor in two cost-plus-award-fee contracts, which resulted in NASA expending \$233,600 for award fees that did not meet NASA FAR Supplement requirements.⁹ In addition, in September 2009, we reported that although the criteria used to evaluate the California Institute of Technology's (Caltech) operation of the Jet Propulsion Laboratory under a \$7.5 billion award-fee contract were sufficiently specific and measurable, NASA evaluators provided incomplete assessments or assigned inappropriate ratings to Caltech's performance. We also found that NASA had not proportionately weighted evaluation criteria by a project's overall importance to the Agency or by cost, which allowed exceptional performance on smaller projects to mask less impressive performance on larger, more significant projects.¹⁰

For its part, the GAO has consistently reported on inappropriate and ineffective use of contract award fees by NASA and other Federal agencies and has found that contractors across Government were paid billions of dollars in award fees regardless of acquisition outcomes.¹¹ GAO also found that agencies had not compiled data, conducted analyses, or developed performance measures to evaluate their effectiveness in using award fees and, specifically with respect to NASA, that the Agency had not consistently implemented existing guidance on award fees.

Another challenge in using award-fee contracts is the substantial time and effort involved in administering them. In 2001, NASA estimated the average cost of evaluating, documenting, and communicating contractor performance during each award-fee period (generally every 6 to 12 months over the life of a contract) at \$38,700. Adjusted for inflation, this equates to approximately \$50,000 in 2013.¹²

In December 2007, the Office of Management and Budget (OMB) issued guidance to improve agencies' use of award-fee contracts.¹³ The guidance included linking award fees to acquisition outcomes, designing evaluation criteria to motivate excellent contractor performance, and prohibiting payment for unsatisfactory performance. In addition, the guidance limited the opportunities for contractors to collect unearned award fees in subsequent performance periods, a practice known as "rollover." In 2009, the FAR was amended to prohibit rollover.

⁹ NASA OIG, "Final Memorandum on Audit of the Stratospheric Observatory for Infrared Astronomy (SOFIA) Program Management Effectiveness" (IG-09-013, March 2009).

¹⁰ NASA OIG, "NASA Should Reconsider the Award Evaluation Process and Contract Type for the Operation of the Jet Propulsion Laboratory" (IG-09-022, September 25, 2009).

¹¹ GAO, "DOD Has Paid Billions in Award and Incentive Fees Regardless of Acquisition Outcomes," (GAO-06-66, December 2005) and "Guidance on Award Fees Has Led to Better Practices But Is Not Consistently Applied," (GAO-09-630, May 2009).

¹² The estimated costs included the time of five monitors, six board members, one recorder, and one contracting officer.

¹³ OMB, "Office of Federal Procurement Policy Memorandum," December 4, 2007.

In response to a variety of GAO recommendations and OMB guidance, NASA revised its policies to enhance accountability and effectiveness in its use of award-fee contracts. Since October 2009, NASA has required staff to obtain approval from the Assistant Administrator for Procurement before entering into award-fee contracts. As part of the request, staff must document the other contract types considered and the rationale for using an award-fee vehicle.

Award-fee Process. The total amount of award fee available to the contractor – known as the award-fee pool – is established during contract negotiations. For each contract, NASA appoints a Fee Determination Official (FDO). The FDO is responsible for appointing a Performance Evaluation Board (Board) whose members vary depending upon the nature, dollar value, and complexity of the procurement. However, in most cases individuals with overall primary responsibility for the technical and contracting aspects of the contract are appointed to the Board. The Board is responsible for developing a performance evaluation plan that sets forth the criteria by which NASA will evaluate the contractor and specifies the number and timing of evaluation periods and the amount of award fee available in each period.

Project personnel are assigned to monitor contractor performance and prepare a primary performance evaluation report assigning both adjectival and numerical scores for each award period based on the criteria outlined in the performance evaluation plan.¹⁴ The Board considers this report as well as other pertinent information – including the contractor’s self-evaluation – and prepares a report with findings and recommendations for the FDO who makes the final determination regarding the award fee earned each period. According to the NASA FAR Supplement, contractor performance should be evaluated at least every 6 months. The award fee is determined by applying the numerical score as an earned percentage against the available fee for the period (see Table 1).

¹⁴ The Board is responsible for evaluating the contractor’s overall performance based on performance monitor reports and additional performance information obtained from the contractor and other sources. The Board is supposed to bring broader management perspective to the evaluation process than the monitor, and accordingly its members should be at a relatively high management level in the organization.

Table 1. Description of Award-fee Rating Scores^a

Rating	Range of Performance Points	Description
Excellent	91-100	Of exceptional merit; exemplary performance in a timely, efficient, and economical manner; and very minor (if any) deficiencies with no adverse effect on overall performance. <i>In order to receive an overall excellent rating, the contractor would be under cost, on or ahead of schedule, and providing outstanding technical performance.</i>
Very Good	81-90	Very effective performance, fully responsive to contract requirements; contract requirements accomplished in a timely, efficient, and economical manner for the most part; and only minor deficiencies.
Good	71-80	Effective performance, fully responsive to contract requirements; and reportable deficiencies, but with little identifiable effect on overall performance.
Satisfactory	61-70	Meets or slightly exceeds minimum acceptable standards, adequate results, and reportable deficiencies with identifiable, but not substantial, effects on overall performance.
Poor or Unsatisfactory	Less than 61	Does not meet minimum acceptable standards than [sic] in one or more areas; remedial action required in one or more areas; and deficiencies in one or more areas that adversely affect overall performance. <i>No award fee shall be paid for an unsatisfactory rating.</i>

^aIn February 2011, NASA changed the range of performance points for each rating category. This table identifies the range in effect during the period of the contracts reviewed in this audit.

Source: NASA FAR Supplement and NASA Award Fee Contracting Guide.

Types of Award-fee Payments. The intent of award fees is to motivate the contractor through periodic evaluation of its performance against established criteria. Award-fee payments are divided into provisional, interim, and final payments. The limitation for each type of payment differs depending on whether the contract is for a service such as Center facility maintenance or an end-item deliverable such as a sensor for a satellite.

- *Provisional payments* are made prior to the end of a performance evaluation period and are generally used when long evaluation periods make it necessary to consider payments more frequently than at the end of each period. Provisional payments are permitted in both service and end-item deliverable contracts.
- *Interim payments* are specific to end-item contracts and are paid at the end of an award-fee period after an interim evaluation is completed.
- *Final payments* are specific to service contracts and are paid at the end of each evaluation period. All evaluations are considered final and the contractor keeps 100 percent of fee earned in each period.
- *Award Fee for End-Item Contracts clause payments* are made on end-item contracts at the conclusion of the contract and supersede any provisional and interim payments. Designed to measure the overall performance of the contractor, only the overall evaluation is considered final.

Objectives

The overall objective of this audit was to determine whether NASA effectively used award fees to motivate contractor performance and improve acquisition outcomes. Specifically, we examined a sample of 45 contracts (21 end-item and 24 service contracts) with contract obligations made between FYs 2009 and 2011, examining 502 of 557 award-fee evaluation periods, to determine whether:¹⁵

- NASA's use of award-fee contracts and evaluation of contractor performance was consistent with requirements, policies, and procedures;
- NASA was monitoring and revising performance evaluation plan criteria as necessary to better incentivize contractor performance; and
- NASA was collecting and analyzing information on award fees to evaluate their effectiveness.

See Appendix A for details of the audit's scope and methodology, our review of internal controls, and a list of prior coverage; Appendix B for the universe of contracts reviewed and the issues identified on each; and Appendix C for the monetary impact by contract.

¹⁵ We excluded 55 award fee periods due to age or classification restrictions. One contract was primarily for services, but also required the contractor to provide end-item deliverables.

OVERLY COMPLEX AWARD FORMULAS RESULT IN INCORRECT PAYMENTS TO CONTRACTORS

We found that NASA contracting officers incorrectly calculated provisional and interim award-fee payments in more than half of the contracts we reviewed (26 of 45). In our judgment, this occurred because the mathematical formulas they are required to use to calculate the payments are overly complex and vary depending on whether the contract is for an end-item deliverable or for services. Consequently, NASA paid contractors approximately \$66.4 million in provisional and interim payments that did not conform to the NASA FAR Supplement. Moreover, we found no controls for monitoring the accuracy of the Agency's provisional and interim payment calculations.

Overly Complex NASA FAR Supplement Requirement

The intent of an award fee is to motivate contractor performance in the areas of cost, schedule, and performance through periodic evaluation and payments. The FAR states that "appropriate Government surveillance during performance will provide reasonable assurance that efficient methods and effective cost controls are used." In addition, NASA award-fee guidance states that the performance evaluation plan should be as simple as feasible, reasoning that the simpler, the more effective the plan.¹⁶ However, we found NASA's award-fee provisional and interim payment formulas overly complex and therefore subject to misinterpretation and misapplication.

Under NASA's current process, the contracting officer calculates the allowable award fee depending on the timing of the payment – provisional or interim – and the type of contract – end-item or service.

Provisional Payments. Provisional payments can be used in both end-item and service contracts. For end-item contracts, the payments are limited to 80 percent of the prior period's score. For service contracts, provisional payments are limited to the prior period's score but are not to exceed 80 percent of the amount available for the current period.

Table 2 illustrates the application of the provisional payment formulas and demonstrates the differences in payments for end-item and service contracts that receive the same performance evaluations.

¹⁶ NASA Award Fee Contracting Guide, Section 3.3(f), "Performance Evaluation Plan."

Table 2. Illustration of Provisional Award-fee Payments

Type of Contract	Award-fee Period	Award-fee Period Score	Available Award Fee for the Period	Percent Available for Provisional Payment	Amount of Fee Available for Provisional Payment
End-Item Contracts				Limited to 80 percent of the prior period's score	The amount available x [80 percent of prior period's score]
For an end-item contract, the total amount of the provisional payment in a period cannot exceed 80 percent of the prior period's evaluation score.	In the first evaluation period, since there is no prior score, the amount available is limited to 80 percent of the amount available.			(There is no prior period's score; therefore, 80%)	(\$150,000 x 0.8)
	1	95%	\$150,000	80%	\$120,000
	In the second period, the amount available for provisional payment is limited to 80 percent of the prior period's score, or 80 percent of 95 percent.			(Prior period's score of 95% x 0.8)	(\$300,000 x 0.76)
	2	77%	\$300,000	76%	\$228,000
	In the third period, the amount available for provisional payment is limited to 80 percent of the prior period's score, or 80 percent of 77 percent.			(Prior period's score of 77% x 0.8)	(\$375,000 x 0.62)
	3	93%	\$375,000	62%	\$232,500
Service Contracts				The lesser of the prior period's score or 80 percent of the current amount available	The amount available x [the lesser of the prior period's score or 80 percent of the current amount available]
For a service contract, the total amount of the provisional payment in a period is limited to the lesser of a percentage stipulated in the contract (but not exceeding 80 percent) or the prior period's evaluation score.	In the first evaluation period, since there is no prior score the amount available is limited to 80 percent of the amount available.			(There is no prior period's score; therefore, 80%)	(\$150,000 x 0.8)
	1	95%	\$150,000	80%	\$120,000
	In the second period, the prior period's score exceeds 80 percent; therefore, the amount that may be provisionally paid is limited to 80 percent of the current amount available.			(80% is less than the prior period's score of 95%)	(\$300,000 x 0.8)
	2	77%	\$300,000	80%	\$240,000
	In the third period, the prior period's score is less than 80 percent; therefore, the amount that may be provisionally paid is limited to the prior period's score of 77 percent applied to the current amount available.			(The prior period's score of 77% is less than 80%)	(\$375,000 x 0.77)
	3	93%	\$375,000	77%	\$288,750

Source: NASA OIG derived example.

Interim Payments. Interim award-fee payments are specific to end-item contracts and are limited to 80 percent of the total award fee available for the period minus any provisional payments.

Final Payments. Final award-fee payments are used in service contracts where contractor performance is definitively measurable within each evaluation period. All evaluations are considered final and the contractors keep 100 percent of fee earned in each period.

Table 3 identifies the application of formulas for interim and final evaluation award-fee payments for end-item and service contracts and an example calculation.

Table 3. Illustration of Interim and Final Evaluation Award-fee Payments

Type of Contract	Award-fee Period	Award-fee Period Score	Available Award-fee for the Period	Provisional Amount Paid	Percent Earned After Final Evaluation for the Period	Final Amount Paid to Contractor Less Provisional Payments
End-Item Contracts				Amount from Table 2 (prior example)	[award fee available] x 80 percent	[80 percent of available award fee] minus [provisional fees paid for the period]
For an end-item contract, the amount of an interim award-fee payment is limited to the lesser of the interim evaluation score or 80 percent of the fee allocated to that period less any provisional payments made during the period.	In this first evaluation period, the contractor was provisionally paid 80 percent of the amount available; therefore, the contractor is paid no additional fee as an interim payment regardless of the evaluation score.				(\$150,000 x 0.8)	(\$120,000 - \$120,000)
	1	95%	\$150,000	\$120,000	\$120,000	\$0
	In the second period, the interim evaluation score is less than 80 percent; therefore, the contractor is limited to the interim evaluation score minus any provisional payments made.				(\$300,000 x 0.77)	(\$231,000 - \$228,000)
	2	77%	\$300,000	\$228,000	\$231,000	\$3,000
	In the third period, the interim evaluation score is more than 80 percent; therefore, the contractor is limited to 80 percent of the amount available minus any provisional payments made.				(\$375,000 x 0.8)	(\$300,000 - \$232,500)
3	93%	\$375,000	\$232,500	\$300,000	\$67,500	
Service Contracts				Amount from Table 2 (prior example)	[award fee available] x evaluation score	[80 percent of available award fee] minus [provisional fees paid for the period]
For a service contract, all evaluations are final and the contractor keeps the fee earned in any period regardless of the evaluations for subsequent periods.	In the first evaluation period, the amount paid to the contractor is the amount earned minus any provisional payments made.				(\$150,000 x 0.95)	(\$142,500 - \$120,000)
	1	95%	\$150,000	\$120,000	\$142,500	\$22,500
	In the second period, the provisional amount paid exceeds the score for the period; therefore, the contractor is required to refund the excess payment to NASA in the next invoice.				(\$300,000 x 0.77)	(\$231,000 - \$240,000)
	2	77%	\$300,000	\$240,000	\$231,000	(\$9,000)
	In the third period, the amount paid to the contractor is the amount earned minus any provisional payments.				(\$375,000 x 0.93)	(\$348,750 - \$288,750)
3	93%	\$375,000	\$288,750	\$348,750	\$60,000	

Source: NASA OIG derived example.

Contractors Received Incorrect Provisional and Interim Payments Due to Complex Formulas

We found that misinterpretations of the complex NASA FAR Supplement requirements resulted in misapplication of payment formulas and incorrect payments to contractors. We found instances in which contracting officers incorrectly applied service contract formulas to end-item contracts, as well as instances in which they applied provisional payment formulas inconsistently. Determining the correct formula is so confusing that in one instance a contracting officer used different formulas for the same contract.

In 26 of the 45 contracts reviewed, we found that NASA paid contractors approximately \$66.4 million more in provisional and interim payments during evaluation periods than permitted.¹⁷ Specifically, we determined provisional payment calculations included:

- \$11.9 million that was misapplied and incorrectly paid on 5 end-item contracts; and
- \$5.9 million that was misapplied and incorrectly paid on 13 service contracts.

For interim payment calculations, we determined that approximately \$48.7 million was misapplied and incorrectly paid on 12 contracts.¹⁸

In our review of the 45 NASA contracts, we found that NASA contracting personnel inappropriately applied the service contract method to end-item contracts, resulting in payments in excess of the NASA FAR Supplement limitations. For example:

- NASA awarded a \$1.1 billion contract to Pratt-Whitney Rocketdyne, Incorporated for the Space Shuttle main engine in May 2002. The contractor received assessment scores exceeding 80 percent for 10 of 19 award-fee periods. However, when calculating interim award-fee payments the contracting officer failed to apply the 80 percent limitation and incorrectly authorized payments equal to the evaluation scores. This resulted in the contractor receiving payments inflated by as much as 21 percent for a total of \$8.7 million in incorrect payments over the life of the contract.¹⁹
- NASA awarded two contracts to Ball Aerospace Technologies Corporation (Ball) on which the contractor received interim payments that exceeded the 80 percent rule. Between the two contracts, Ball realized just over \$1 million in incorrect interim payments as follows:

¹⁷ Due to a lack of contract documentation available for some contracts, incorrect payments could be greater than the \$66.4 million we identified. However, incorrect payments made during evaluation periods can be addressed prior to the end of the contract. See OIG Recommendation 4 on page 13.

¹⁸ Four contracts had violations in both provisional and interim payments.

¹⁹ The contracting officer authorized interim payments in all but 1 of the 19 award fee periods that were 11-25 percent higher than permitted.

- In July 2007, NASA awarded Ball a \$127.9 million contract for the Operational Land Imager, part of the Landsat Data Continuity Mission.²⁰ In 8 of 9 award-fee periods, the contracting officer authorized a total of \$627,765 in incorrect interim payments.
- In March 2005, NASA awarded Ball a contract valued up to \$100.2 million for the Global Precipitation Measurement Microwave Imager.²¹ In 8 of 14 award-fee periods, the contracting officer authorized a total of \$373,302 in incorrect interim payments.

For service contracts, we found provisional payment calculations that were inconsistently applied and not in compliance with NASA FAR Supplement limitations. For example:

- In September 2002, NASA awarded an \$857.5 million contract to Boeing Space Operations to perform checkout, assembly, integration, and processing activities for major programs, including the International Space Station. The contracting officer authorized a total of \$912,925 in provisional award payments that exceeded the 80 percent threshold in 8 of 19 award-fee periods.
- In July 2002, NASA awarded a \$109.3 billion contract to Lockheed Martin Space Operations to provide scientific, engineering, and technical services for astrobiology and space research. The contracting officer authorized a total of \$344,308 in provisional payments that exceeded both the prior period's score and the 80 percent threshold in 3 of 17 award-fee periods.

Agency Lacks Internal Controls to Check Accuracy of Award-fee Payments

We found NASA lacked adequate controls to monitor the accuracy of provisional and interim payment calculations in award-fee contracts. Among other things, Headquarters (HQ) Procurement officials do not periodically review interim and provisional payments to determine whether contracting officers are accurately applying the formulas. In addition, we found errors in examples used by HQ Procurement personnel to calculate provisional and interim payments. Specifically, when we asked for an explanation of how the end-item provisional payments should be calculated, the Procurement official incorrectly calculated provisional scores for end-item contracts by using 80 percent of the amount *earned* in the prior period as opposed to the *percentage* awarded as required by the NASA FAR Supplement. Because the amounts available for each period can vary

²⁰ The Landsat Program is a series of Earth-observing satellite missions jointly managed by NASA and the U.S. Geological Survey. The first satellite launched in 1972 and the latest satellite in the series, the Landsat Data Continuity Mission, launched in February 2013.

²¹ This instrument is part of the Global Precipitation Measurement mission, a satellite that will measure global precipitation scheduled to launch in February 2014.

and the earned amounts are based on a percentage of the amount available for the period, using the wrong formula can result in provisional payments that are substantially higher or lower than what the NASA FAR Supplement allows. When we raised the issue of complicated award-fee formulas with HQ Procurement officials, they conceded that the process is overly complex and may be subject to misinterpretation.

Department of Defense Prohibits Provisional Award-fee Payments

The NASA FAR Supplement permits provisional award-fee payments; however, the FAR is silent on the option and neither prohibits nor expressly authorizes the use of provisional award-fee payments.

In February 2011, the Department of Defense (DOD) published a final rule amending the Defense Federal Acquisition Regulation Supplement to prohibit award-fee payments prior to completion of an end-of-period performance evaluation. DOD concluded that until a contractor's performance has been evaluated, agency contracting officials cannot ensure that the contractor's performance merits an award fee. The DOD final rule is intended to protect the taxpayer's interest in the event a contractor fails to meet performance expectations. Furthermore, in our judgment eliminating provisional payments could simplify award-fee calculations and reduce the number of erroneous payments.

Recommendations, Management's Response, and Evaluation of Management's Response

To improve the accuracy of award-fee payments to contractors, we made the following recommendations to the Assistant Administrator for Procurement:

Recommendation 1. Simplify the mathematical formulas used to calculate interim and provisional payments and update the NASA FAR Supplement accordingly.

Management's Response. The Assistant Administrator non-concurred, stating that although the application of the formulas can be confusing without proper training, the formulas are not overly complex and ensure the proper payments are made over the life of the contract regardless of situation or rating.

Evaluation of Management's Response. We continue to believe that the formulas are overly complex and lead to unnecessary errors. As discussed in our report, one HQ Procurement Official we spoke with acknowledged the complexity of the formulas and we identified errors we believed were caused by that complexity, including in a presentation designed to explain how to apply the formula for end-item provisional payments. Moreover, we found that contracting officers incorrectly calculated provisional and interim award-fee payments in more than half of the

contracts we reviewed (26 of 45) – evidence that the formulas currently used are too complex. In his response, the Associate Administrator provided no substantive reason why the formulas could not be simplified, nor did he propose an alternative for ensuring future payment calculations are accurate. Accordingly, this recommendation is unresolved.

Recommendation 2. Require the same formula be used for service and end-item contracts and update the NASA FAR Supplement accordingly.

Management's Response. The Assistant Administrator non-concurred, stating that the Office of Procurement had previously researched using the same formula for both types of contracts and determined that doing so would not ensure proper provisional award-fee payments under the end-item award fee concept.

Evaluation of Management's Response. The Associate Administrator did not explain why using the same formula for both types of contracts would not ensure proper payments and we see no reason why that should be the case. Accordingly, this recommendation is unresolved.

Recommendation 3. Implement a process to test the accuracy of award-fee calculations on an ongoing basis.

Management's Response. The Assistant Administrator concurred, stating that the Office of Procurement will advise Center Procurement Office Cost/Price Analysts to conduct biannual reviews of provisional award-fee payment calculations.

Evaluation of Management's Response. Management's proposed actions are responsive; therefore, the recommendation is resolved and will be closed upon completion and verification that award-fee calculations are being reviewed at the Centers.

Recommendation 4. Direct contracting officers to review on-going award-fee contracts to ensure that calculations are appropriate and accurate for contract type and adjust contract payments as necessary.

Management's Response. The Assistant Administrator concurred, stating that the Office of Procurement will communicate with Center Procurement and Contracting Officers emphasizing the importance of correctly calculating provisional award-fee payments.

Evaluation of Management's Response. Although the Assistant Administrator concurred with our recommendation, his proposed actions do not meet its intent. Because more than half of the contracts in our sample contained errors, we believe it highly likely that other award-fee contracts contain similar errors. Consequently, we do not believe that simply emphasizing the importance of correctly calculating

award-fee payments will be sufficient to address our concern. Accordingly, this recommendation is unresolved.

Recommendation 5. Provide additional training to Agency contracting officers on proper calculation of award-fee payments.

Management's Response. The Assistant Administrator concurred, stating that the Office of Procurement will provide a one-time training webinar for Center Contracting Officers.

Evaluation of Management's Response. Management's proposed actions are responsive; therefore, the recommendation is resolved and will be closed upon completion and verification of the corrective actions. However, we encourage the Assistant Administrator to also make the webinar available for viewing after the one-time training event.

Recommendation 6. Consider eliminating provisional award-fee payments.

Management's Response. The Assistant Administrator non-concurred, stating that the Office of Procurement had previously considered but rejected the idea of eliminating provisional payments and continues to believe they are a valuable tool for negotiating fair and reasonable contracts. He also stated that it is not reasonable to expect contractors to wait until the end of an award-fee evaluation period before receiving any award fee.

Evaluation of Management's Response. Award fee is paid based upon observed performance over a period of time and is not a right afforded to contractors. In our opinion, it is in the Government's best interest to ensure that contractors have performed adequately before they receive any award fee. Furthermore, considering the challenges we identified with contracting officers correctly calculating provisional award fee, we question the benefit of this tool and believe the Office of Procurement should reconsider this policy decision. Accordingly, this recommendation is unresolved.

NASA PRACTICE CIRCUMVENTS PROHIBITION AGAINST "ROLLOVER" AND AWARDING OF UNEARNED FEES

Twenty-one of the 45 contracts we reviewed were for end-item deliverables, such as spacecraft observatories and instruments, and included an Award Fee for End-Item Contracts clause, informally referred to as the a "look-back clause." For these contracts, NASA evaluates the contractor's performance throughout the course of the contract and makes interim award-fee payments, but the amount of award fee the contractor ultimately receives is based upon demonstrated performance of the end-item deliverable. However, we found that NASA includes funds not awarded to the contractor in interim periods as part of the final award pool. We believe this practice circumvents FAR 16.401(e)(4) prohibiting rollover of unearned fees to subsequent performance periods. Moreover, we believe this rollover mechanism promotes a philosophy that as long as a mission provides good science data, cost and schedule overages will be disregarded.

Our review included three end-item contracts for which NASA has completed final evaluations of the contractor's performance. For one of these contracts, NASA paid approximately \$835,470 in award fees drawn from amounts that were carried over from interim evaluation periods. We question the appropriateness of these payments.

Series of Failed Projects Leads NASA to Reexamine Award Fee Approach

Between 1992 and 1999, NASA launched 16 major space missions, including several Earth-orbiting satellites, an asteroid rendezvous, and missions to Mars and the Moon. These missions coincided with NASA's "Faster, Better, Cheaper" era when the Agency shifted its focus from costly, large satellites and space probes toward smaller, less expensive spacecraft.²² Costs for programs developed and launched during this era were capped and schedules were held to strict timeframes. While NASA experienced success with several of these missions, such as the Near Earth Asteroid Rendezvous Project and the Pathfinder Mission to Mars, a series of failures in Earth-orbiting projects and most prominently in the Mars Climate Orbiter and Mars Polar Lander Projects tainted NASA's "Faster, Better, Cheaper" approach and drew significant criticism.²³ In the end, only 10

²² Daniel Goldin became NASA's Administrator in 1992 and pioneered the "Faster, Better, Cheaper" philosophy based on the assumption that NASA could cut costs while still delivering a wide variety of aerospace programs.

²³ The Mars Climate Orbiter, which was intended to observe Mars' seasonal climate and daily weather, was lost in September 1999 while attempting to establish an orbit around the planet. In December 1999, the Mars Polar Lander, a robotic spacecraft intended to land near the South Pole of Mars to study the planet's layered polar terrain, was lost during its descent to the planet's surface.

of the 16 missions achieved their objectives, and NASA subsequently abandoned the “Faster, Better, Cheaper” philosophy for an approach that emphasizes performance-based contracting and tying incentives to acquisition outcomes.²⁴

Over the years, the NASA OIG and GAO issued reports criticizing NASA’s contract management practices. For example, in September 2000, the OIG found that the performance evaluation plan for NASA’s \$868 million contract for the Earth Observing System Data Information Core System did not link award-fee payments to specific cost, schedule, and performance objectives.²⁵ In January 2003, GAO characterized NASA’s contract management as a high-risk area, citing an ineffective process for overseeing contractor activities and a lack of emphasis on results, product performance, and cost control.²⁶ Furthermore, in September 1999 and August 2009, both organizations made recommendations aimed at moving NASA toward emphasizing results and linking award-fee payments to final performance.

NASA Develops the Award Fee for End-Item Contracts Clause as a Way to Emphasize Performance Outcomes

In October 1996, NASA revised its FAR Supplement to include Section 1852.216-77, “Award Fee for End-Item Contracts.” Informally referred to as the “look-back clause,” the Section provides that only the last evaluation is final on end-item contracts where the true quality of contractor performance cannot be measured until the product is delivered. Although NASA performs interim evaluations of the contractors’ performance, these evaluations are superseded by the final determination made at contract completion. The final evaluation may result in the contractor retaining fees previously awarded or receiving a lower or higher award fee. Thus, the final evaluation provides NASA the opportunity to make an award-fee decision based on actual quality, total cost, and ability to meet the contract schedule when the final product is delivered.

Federal Acquisition Regulations Prohibit Rollover of Award Fees

The FAR defines award fee rollover as the process of transferring unearned award fees from one evaluation period to a subsequent evaluation period. Prior to October 14, 2009, the FAR allowed rollover of unearned award fees. However, recognizing that this rule could serve as a disincentive to consistent contractor performance throughout the entire contract, Federal policymakers revised the FAR on October 14, 2009, to prohibit the

²⁴ Performance-based contracting involves structuring all aspects of an acquisition around the purpose of the work to be performed as opposed to either the manner by which the work is to be performed or broad statements of work.

²⁵ NASA OIG, “Consolidated Space Operations Contract – Cost-Benefit Analysis and Award Fee Structure” (IG-00-043, September 20, 2000).

²⁶ GAO, “Major Management Challenges and Program Risks” (GAO-03-114, January 2003).

rollover of unearned award fees. This change prohibits the Government from making previously unearned award fee available to the contractor in a subsequent award period.

NASA's Award Fee for End-Item Contracts Clause Circumvents the FAR Prohibition on Rollover Award Fees

NASA's award-fee policy for end-item contracts allows the entire award-fee pool, regardless of a contractor's interim evaluation scores, to remain available at final evaluation. This policy allows NASA to adjust the final award fee based on the outcome of the deliverable, thereby allowing contractors a second chance to earn award fees previously denied in interim evaluations. For example, in a contract for a satellite NASA would conduct periodic evaluations of the contractor's performance and assess interim award fees based on those assessments. At contract completion, NASA would once again examine the contractor's performance. If the satellite fails or does not meet performance expectations, NASA might recover award fee amounts it previously paid. Conversely, if the satellite is successful NASA policy allows for the contractor's final evaluation score to be applied against the entire award-fee pool, including amounts held back from the contractor during earlier assessments.

NASA officials contend this process does not constitute "rollover" and therefore does not violate the FAR provision because the contractor does not actually "earn" interim award fee amounts, which are subject to forfeit at the end of the contract period. However, we believe this argument places form over substance because NASA's policy allows contractors that receive less than the full amount of available award fees during an evaluation period due to unsatisfactory performance a second chance at award-fee dollars.

While we recognize the intent behind the clause is to ensure the award fee a contractor ultimately receives is based upon demonstrated performance of an end-item deliverable at contract completion, we believe that the practice of including in the final award-fee pool, amounts a contractor did not earn in earlier periods is contrary to the FAR prohibition on rollover.

Award Fee for End-Item Contracts Clause Promotes "Hubble Psychology"

In a September 2012 report, we described an attitude at NASA known as the "Hubble Psychology" – an expectation among some NASA personnel that projects that fail to meet cost and schedule goals will continue to receive additional funding and that subsequent scientific and technological success will overshadow any budgetary or

schedule problems that occurred during development.²⁷ Project managers interviewed as part of the 2012 audit pointed out that although the Hubble Space Telescope greatly exceeded its original budget, launched years after promised, and suffered a significant technological problem that required costly repair missions, the telescope is generally viewed as a national treasure and its cost and performance issues have largely been forgotten. Based on the Hubble experience and that of other NASA projects, many interviewees expressed the belief that if a mission ultimately provides good science data, any previous cost and schedule overages will be forgiven. This phenomenon has resulted in a mindset among NASA managers that emphasizes technological and operational success over cost and schedule fidelity.

Because the Award Fee for End-Item Contracts clause adds any unearned award fees from interim periods to the final award pool available to the contractor, the clause may promote NASA's "Hubble Psychology." A contract for the Advanced Technology Microwave Sounder (ATMS) Instrument we examined during this review illustrates the point.

In December 2000, NASA awarded a \$78.6 million contract to Aerojet General Corporation (Aerojet) for development of the ATMS Instrument on the National Polar-orbiting Operational Environmental Satellite System Preparatory Project.²⁸ Table 4 displays a summary of the relevant award-fee data from the Project's periodic interim evaluations.

²⁷ NASA OIG, "NASA's Challenges to Meeting Cost, Schedule, and Performance Goals" (IG-12-021, September 27, 2012). While not attributable to a particular individual, the term "Hubble Psychology" is well known and used extensively throughout NASA.

²⁸ The ATMS instrument provides sounding observations of atmospheric temperature and moisture profiles for civilian operational weather forecasting, as well as continuity of these measurements for climate monitoring purposes.

Performance Period	Total Award Fee Available	Interim Performance Assessment Percentage Score	Total Award Fee Earned
1	\$167,320	92%	\$153,934
2	320,000	77	246,400
3	321,360	69	221,725
4	375,618	52	0 ^a
5/6	748,516	87	647,466
7	314,258	93	292,260
8	314,258	92	289,117
9	314,258	99	311,115
10	315,706	91	285,714
11	399,569	75	299,677
12	388,895	92	358,646
13	364,925	98	356,379
Event 2	200,000	75	150,000
14	146,298	98	144,103
Event 1	100,000	92	92,000
15	248,473	100	248,473
Critical Item	250,000	93	232,500
Critical Item	500,000	100	500,000
Critical Item	200,000	0	0
Critical Item	500,000	100	500,000
Total	\$6,489,454	84%	\$5,329,509

^aAccording to the Aerojet Performance Evaluation Plan, no award fee shall be paid for an unsatisfactory rating of less than 61 percent.

Source: NASA OIG analysis of award-fee data for the Aerojet contract.

Although interim evaluations cited significant cost growth, management deficiencies, subcontract schedule delays, and milestone delays, in May 2012, NASA officials assessed the contractor's performance for the ATMS instrument with a final, look-back evaluation score of 95 percent. They then applied this percentage to the entire \$6,489,454 award-fee pool, resulting in a final award fee to the contractor of \$6,164,980. As shown in Table 4, despite several interim periods in which the contractor earned scores well below 95 percent and an overall average rating of 84 percent – including two cases where the contractor received no award fee during a performance period – the contractor received a final evaluation rating of “excellent” and 95 percent of the total available award fee.

Administration of Interim Evaluations Are a Significant Expense of Award-fee Contracts

Award-fee contracts require significant technical and managerial oversight to continually monitor performance and communicate with the contractor. When contemplating whether to issue an award-fee contract, it is important to ensure that the administrative costs associated with managing the award-fee process do not outweigh the contract's expected benefits. In 2001, NASA estimated an average cost to the Government of \$38,700 per evaluation period for an award-fee contract, a rate that rises to \$50,000 when adjusted for inflation in 2013. However, despite the time and effort required by Government officials to evaluate, document, and communicate contractor performance each evaluation period, under NASA's current practices only the final evaluation determines the amount of fee the contractor ultimately receives – diminishing the investment made in administering the interim evaluations.

Performance Evaluation Plans Contain Criteria for Interim Evaluations but Not for the Final Evaluation

Although all 45 contracts we reviewed included the criteria against which NASA would judge contractor performance during the course of the contract, only 1 of the 22 end-item contracts contained criteria specific to the final end-item evaluation. Contractors we spoke with confirmed they were not aware of the criteria NASA used for the final evaluation. For example, one contractor said it was unclear as to how NASA determined the interim scores, added or subtracted points based on the project's final outcome, or determined the final rating through a separate assessment.

Although the final evaluation is the primary driver of the contractor's total award fee, we were unable to determine with certainty the criteria NASA uses as the basis for the final performance evaluation. Without criteria or standards for evaluating overall performance, NASA increases the risk that its final evaluations are arbitrary and lack a rational connection between contractor performance throughout the life of the project and the final award score. Further, the contractor has little insight into the factors that determine its final fee, thereby minimizing the intended purpose of award fee to incentivize contractors to improve performance.

We first raised a concern over criteria used for final end-item evaluations in a September 2000 report in which we concluded that NASA could have awarded up to \$14.1 million of look-back award fee to a contractor without an objective basis related to contractor performance. We recommended that the Associate Administrator for Space Flight direct the contracting officer to establish performance evaluation criteria for the final evaluation portion of the award-fee pool. Management non-concurred with our recommendation because it believed the existing provisions were in the Government's best interest, but took corrective action that partially satisfied our recommendation by issuing a letter to the contractor establishing performance evaluation criteria for the final

contract award fee. While this report examined only the Consolidated Space Operations Contract, we believe that all performance evaluation plans for end-item contracts should contain specific criteria for the final award-fee evaluation.

Alternatives for Protecting the Government Interest

On February 14, 2011, DOD published a final rule amending the Defense Federal Acquisition Regulation Supplement to prohibit rollover of unearned award fee. In addition, the new rule required that 40 percent of the award-fee pool be available for the final performance evaluation. The intent of this rule is to incentivize the contractor throughout contract performance but also set aside a sufficient amount of the award-fee pool to protect the taxpayers' interest in the event a contractor fails to meet final contractual obligations.

Recommendations, Management's Response, and Evaluation of Management's Response

To improve NASA's management of award fees for end-item deliverable contracts, we made the following recommendations to the Assistant Administrator for Procurement:

Recommendation 7. Revise NASA FAR Supplement 1852.216-77 so that award fees not earned in interim evaluations are not available to contractors at the end of contract performance or use the end-item contract final evaluation only for downward adjustments following catastrophic events or failures. Alternatively, NASA should designate a specific percentage of the total award pool that will be available for the final performance evaluation.

Management's Response. The Assistant Administrator non-concurred, stating that he disagrees with OIG's understanding of the FAR concept of rollover. Specifically, he asserted that under the end-item award-fee concept, the contractor does not "earn" award fee until the final evaluation; therefore, there is no rollover of "unearned" award fee. The Assistant Administrator also stated that using the final evaluation only for downward adjustments would undermine the end-item award-fee concept because it would essentially make each interim award-fee evaluation a final evaluation and diminish the importance of having a quality product at the end of the contract. Furthermore, he stated that designating a percentage of the award fee for the final evaluation would not be in NASA's best interest.

Evaluation of Management's Response. We acknowledge that interim award-fee payments are not final in the sense that NASA can adjust them at the end of contract performance. However, we believe that the Assistant Administrator's definition of "earned" is too narrow and elevates form over substance. Neither the FAR nor the NASA FAR Supplement defines the terms "earned" or "unearned." Although

“earned” may mean to receive and retain as the Assistant Administrator suggests, the term may also be used to signify that an entity “merits” an award and in this context the word does not necessarily denote finality or permanence. Moreover, NASA’s own use of the term in contract documentation states, “The Government will determine the amount of award fee earned for periodic performance on the basis of a concurrent evaluation...” Furthermore, NASA’s Procurement Information Circular (PIC) 10-12, “Measuring Effectiveness of Award Fee Contracts,” describes a data field in the NASA Past Performance Database that requires contracting officers to input the “amount of award fee earned for the evaluation period.”

In NASA’s process for end-item contracts, NASA conducts periodic evaluations of contractor performance and makes a judgment as to the amount of award fee merited by that performance during that period. It then pays the contractor some, all, or none of the award fee allocated to that period. In the final evaluation, NASA makes available to the contractor all of the award fee allocated to the entire contract, even amounts it determined the contractor’s performance did not merit previously during interim award periods. We continue to believe that this process is inconsistent with the FAR prohibition on rollover because it gives contractors a second chance to receive money the Agency initially determined their interim performance did not warrant.

We recognize the intent of NASA’s Award Fee for End-Item Contracts clause is to protect the interest of the Government and taxpayer by ensuring that the final product delivered to NASA performs as intended. However, we believe there are other ways NASA can accomplish this goal without diminishing the incentive for contractors to perform consistently throughout the entire contract. Accordingly, this recommendation is unresolved.

Recommendation 8. Issue guidance requiring performance evaluation plans to contain specific criteria for the final evaluation for end-item contracts.

Management’s Response. The Assistant Administrator non-concurred, stating that the FAR and NASA award-fee guide both already require the Government to identify and communicate criteria by which the contractor will be assessed.

Evaluation of Management’s Response. We found clear evaluation criteria in NASA’s performance evaluation plans for all periods of performance except the final, look-back evaluation – the one evaluation NASA uses to determine the final, total amount of award fee contractors will receive. If NASA continues to use some version of the Award Fee for End-Item Contracts clause, then similar to every other evaluation period and in accordance with the FAR NASA needs to identify in the performance evaluation plan and communicate to contractors the criteria by which they will be assessed in the final evaluation. Accordingly, this recommendation is unresolved.

QUESTIONABLE EVALUATION AND ACQUISITION PRACTICES RESULT IN INEFFECTIVE USE OF AWARD-FEE CONTRACTS

We found that NASA appropriately modified contracts to provide for a fixed fee when an award fee was no longer suitable. However, we identified seven questionable evaluation and acquisition practices that cause us to question the effectiveness of award-fee contracts at the Agency. Specifically, we found that award fees were incorrectly allocated to post-launch periods; award-fee periods were combined resulting in questioned payments to contractors; award fees paid to a contractor were not justified; contractors received an overall excellent rating when technical, cost, and/or schedule performance did not support the rating; cost control criterion was not evaluated at 25 percent as required; available award-fee pool was not defined or allocated; and failure to complete required analysis and documentation limited NASA's assurance that the appropriate contract type was used.

Due to these questionable practices, NASA paid approximately \$2.4 million in excess award fees on the 45 contracts we reviewed. We also determined that NASA expended approximately \$250,000 evaluating contracts for which performance objectives were undefined or for which it had not determined that an award-fee contract was the most beneficial type of contract for the services provided.

Contracts Appropriately Changed from Award Fee to Fixed Fee

We found that for 2 of the 45 contracts we reviewed, award fees were not appropriate for incentivizing contractor performance. The services provided by these contractors related to ensuring public safety and health by addressing different types of emergencies. NASA also questioned the use of award-fee contracts for these two contracts and, in our opinion, appropriately modified the contracts to provide for a fixed fee.

In February 2006, NASA awarded a \$31.1 million contract to Consolidated Safety Services Incorporated for professional services related to occupational safety, industrial hygiene, and medical support programs at Ames Research Center. The acquisition plan for the contract documented that the services could not be performed on a fixed-price basis due to the uncertainty of requirements and the contract was structured as a cost-plus-award-fee vehicle.²⁹ In January 2010, NASA officials converted the contract to a cost-plus-fixed-fee contract because the contractor had consistently received "excellent" ratings and therefore incentives were no longer necessary and because the

²⁹ FAR Subpart 16.301-2, "Cost Contracts," indicates that a cost contract is appropriate for use when uncertainties involved in contract performance do not permit costs to be estimated with sufficient accuracy to use any type of fixed-price contract.

administrative costs associated with a cost-plus-award-fee contract were much higher than with a cost-plus-fixed-fee contract.

In June 2006, NASA awarded a \$7.3 million contract to Wackenhut Services, Incorporated (Wackenhut) for emergency preparedness management and other safety services. We questioned whether responding to emergencies should be an award-fee-based activity and how such fees would contribute to the contractor successfully and safely performing its job. NASA officials determined that this fire and security service contract did not warrant an award-fee contract and indicated that the subsequent service contract would be a firm-fixed-price vehicle.

Award Fee Incorrectly Allocated to Post-Launch Periods

NASA awarded Orbital Sciences Corporation (Orbital) a \$30 million contract for the Glory Observatory Mission in June 2004.³⁰ We found that the contract included an incorrectly structured award-fee pool that allocated a portion of the award fee to post-launch contract periods. The award fee was designed to motivate contractor performance prior to launch; therefore, the total award-fee pool should have been allocated across the prelaunch contract periods.

NASA management identified the error late during contract performance and executed a contract modification reallocating the post-launch award fee of \$900,000 to the final prelaunch period. By doing this, the available award fee for the final prelaunch period increased to \$1,574,094 – greatly exceeding the amount available in the previous 11 award-fee periods, which ranged between \$184,538 and \$576,682. If the award fee had been allocated correctly at contract award across the 12 award-fee periods, we calculated the contractor would have earned \$63,680 less than NASA eventually paid. We believe it would have been more appropriate for NASA to correct its error by reallocating the post-award fee across all 12 prelaunch award periods and applying the percentages earned for each of the completed periods to the amount of fee reallocated to the period.

Award-fee Periods Combined Resulting in Questioned Payments to Contractors

We identified two end-item contracts in which NASA contracting officers deferred award-fee evaluations to allow contractors the opportunity to resolve unsatisfactory performance that otherwise would have resulted in the contractor receiving no or a reduced award fee in that period. In these cases, contracting officers gave the contractors

³⁰ The Glory mission was a research satellite designed to orbit the Earth and collect data on the properties of aerosols and black carbon in the Earth's atmosphere. The satellite was lost in a launch failure mishap in March 2011.

an opportunity to improve their poor or unsatisfactory performance and receive an award fee based on the combined award fee available over two periods. This resulted in NASA paying the contractors \$323,733 and \$353,130 more than they would have earned had NASA evaluated performance during the award-fee periods separately in accordance with the performance evaluation plan.

Specifically, in December 2000, NASA awarded Aerojet a \$78.6 million contract for development of the ATMS instrument. For the award-fee period July 1 through December 31, 2002, NASA rated the contractor's performance as "poor/unsatisfactory" resulting in no award-fee payment. For the following period (January 1 through June 30, 2003), NASA also would likely have rated the contractor's performance as "poor" due to schedule and technical performance deficiencies; however, rather than award a second consecutive zero rating, NASA combined two evaluation periods (each with \$374,258 in available award fees). After the combined period ended on December 31, 2003, NASA officials rated the contractor's performance at 86.5 percent and applied that percentage to the combined award-fee pool of \$748,516, for an award fee of \$647,466. In our opinion, by doing this NASA overpaid the contractor \$323,733.

NASA also delayed evaluation of contractor performance on the Glory contract. Specifically, NASA deferred evaluation of Orbital's performance for the period November 1, 2008, through April 30, 2009, deferring a decision on \$569,565 in available award fees to the next period (May 1 through October 31, 2009) to allow Orbital time to resolve technical issues with the Maxwell Single Board Computer.³¹ Available award fees for the two periods were combined for a total of \$939,295. In the combined evaluation period, Orbital received a score of 62 percent resulting in an award fee of \$582,363. We consider \$353,130 (62 percent of the deferred period's available award fee of \$569,565 earned in the combined period) to be in excess of what the contractor would have earned if the periods were not combined.

Because NASA chose to delay the evaluations of two contractors' unsatisfactory performance to subsequent periods, we question \$676,863 in award fees paid. Moreover, combining evaluation periods during periods of project instability in order to enable contractors to maximize receipt of award fees undercuts the rationale and motivational impact that supports the use of award-fee contracts in the first place.

Award Fees Paid to Contractor Not Justified

As previously described, in June 2006, NASA awarded Wackenhut a \$7.3 million award-fee contract for fire protection services. However, NASA did not finalize the performance evaluation plan, appoint an FDO, or appoint a Performance Evaluation Board until the start of the third evaluation period – more than 13 months after initiation

³¹ The Glory Mission was impacted by the unreliable low production yield of the Maxwell Single Board Computer. In June 2009, NASA decided to replace the computer with another model, which delayed the launch from June 2009 to November 2010 and increased costs.

of the contract. As a result, no evaluation of Wackenhut's performance for the first two periods was completed. Ultimately, the FDO and the Board agreed to pay Wackenhut 100 percent of the available award fees for the first two performance periods, or \$417,727. Because NASA did not evaluate Wackenhut's performance during these periods, we deem this award payment unsupported.

Overall "Excellent" Rating Given Despite Technical Issues, Cost Overruns, and/or Schedule Delays

According to the NASA Award Fee Contracting Guide, a contractor must provide exceptional performance – excellent cost, schedule, and technical management – in order to earn an overall "excellent" score (91-100) for an evaluation period. The NASA FAR Supplement states that in order to be rated "excellent" overall, a contractor should be under cost, on or ahead of schedule, and providing outstanding technical performance. We identified two instances in which contractors received an overall "excellent" rating despite experiencing cost overruns and earned a "very good" score (81-90) in technical performance.

In September 2002, NASA awarded TRW, Inc., acquired by Northrop Grumman in 2002, an \$825 million contract as part of the James Webb Space Telescope Project. Northrop Grumman earned "excellent" ratings of 94 percent, 93 percent, and 91 percent for three separate evaluation periods. However, during two of the three periods the contractor's overall technical performance was rated as "very good," thereby disallowing an overall excellent rating. Additionally, in one of the three periods rated as "excellent," the evaluation stated that the contractor was experiencing cost overruns. Northrop Grumman earned award fees of \$795,286, \$2,341,998, and \$9,849,921 for these three periods, resulting in questioned award fees of \$169,499 to the company.

In September 2007, NASA awarded Lockheed Martin Corporation (Lockheed) a \$178 million contract for the Solar UltraViolet Imager in the Geostationary Operational Environmental Satellites (GOES) Program.³² Lockheed earned ratings of 91 percent for three separate periods and was rated as "excellent" overall despite receiving a "very good" rating for either technical or cost performance for all three periods. The company received \$1,112,993, \$1,435,719, and \$1,448,800 in award fees for these three periods. The FDO's letters and evaluations referenced cost overruns and ratings below "excellent" for technical and schedule performance. Again, we believe that the highest possible score for these periods was "very good" at 90 percent, and that therefore the company received \$33,555 in questioned award fee.

³² GOES carries Earth and space observing instruments, which provide data used by the National Weather Service. The Solar UltraViolet Imager is a nonprimary instrument on GOES-R.

Cost Control Criterion Not Evaluated at 25 Percent as Required

Cost control is an objective measurement of the contractor's success in controlling costs measured against the estimated cost of the contract. The NASA FAR Supplement requires a cost control evaluation factor in all award-fee contracts weighted at no less than 25 percent of the total weighted evaluation factors. NASA's Award Fee Contracting Guide states that cost control should always be a substantial evaluation factor and when percentage weights are used the cost control factor will be at least 25 percent of the total award fee. We identified two contracts in our sample in which NASA did not effectively employ cost control as a performance measure.

In the ATMS support contract with Aerojet, the performance evaluation plan included two factors – program management and milestone and schedule management – with each weighted at 50 percent. The plan did not include cost control as a separate evaluation factor. NASA paid total award fees on this contract of \$4,086,584. Because cost control was not considered, in our judgment 25 percent or \$1,021,646 of the award fee is unsupported.

Similarly, in April 2009, NASA awarded Northrop Grumman an approximately \$890,000 task order to perform research and development of technology maturation of advanced flight controls. The performance evaluation plan included three performance evaluation factors: technical performance evaluated at 75 percent, management and schedule at 20 percent, and cost at 5 percent. The award fees paid on the contract were \$90,450. Because NASA weighted cost control at less than 25 percent, in our judgment \$18,090, or 20 percent, of the \$90,450 award fees paid are unsupported.

Available Award-fee Pool Was Not Defined or Allocated

According to the FAR, all award-fee contracts will be supported by a performance evaluation plan that establishes the procedures for evaluating award fees. Performance evaluation plans shall define the total amount in the award-fee pool and how the pool is allocated across each evaluation period. We identified three contracts in which the award-fee pool was not defined or allocated until several months into the first evaluation period. Based on our calculations, NASA expended \$150,000 evaluating contractors who were unaware of their performance objectives.

For example, in September 2006 NASA awarded MPC Products Corporation a \$1.2 million contract for the Stratospheric Observatory for Infrared Astronomy (SOFIA) cavity door drive system.³³ The first award-fee period under the contract was September 16, 2006, through March 31, 2007. Although, the performance evaluation

³³ SOFIA is a uniquely modified jetliner with an internally mounted telescope used by scientists to gather and analyze infrared light to understand how stars and planets are formed and what makes up the environment around the massive black hole at the center of the Milky Way Galaxy.

plan noted that the maximum award fee was to be provided, the amount of award fee available for the periods was not defined until March 16, 2007.

Failure to Complete Required Cost-Benefit Analysis Limits Assurance that NASA Used Appropriate Contract Type

A wide selection of contract types is available to the Government in order to provide needed flexibility in acquiring goods and services. Contract type is generally determined based on a consideration of risk to the Government and the contractor. Effective June 29, 2007, the NASA FAR Supplement requires contracting officers to perform and document a cost-benefit analysis of the expected benefits of award-fee contracts versus the administrative costs of managing such contracts, including consideration of the amount of planning required to implement an incentive contract and the amount of additional resources required for monitoring and determining awards.

We found 2 contracts in our 45-contract sample for which NASA did not complete the required cost-benefit analysis. Ames Research Center awarded both classified task orders on April 15, 2008: one to McDonnell Douglas for \$2,821,246 and the other to Northrop Grumman Systems Corporation for \$889,910.

As a result, NASA officials did not justify the cost-effectiveness of using a cost-plus-award-fee contract in these two cases. As discussed previously, NASA spends approximately \$50,000 to evaluate, document, and communicate contractor performance during each award-fee evaluation period. These contracts had two award-fee periods that we reviewed – evaluations that cost NASA approximately \$100,000 to conduct. By not completing a cost-benefit analysis prior to contract award, NASA did not ensure that cost-plus-award-fee contracts were the most cost effective or appropriate contract type for these acquisitions.

Recommendation, Management's Response, and Evaluation of Management's Response

Recommendation 9. To improve NASA's administration of award-fee contracts, we recommended that the Assistant Administrator for Procurement reemphasize or issue additional guidance, as applicable, prohibiting the combination of award-fee periods, reemphasizing that award fees shall be commensurate with the work performed, setting forth the criteria that must be met to receive an overall rating of excellent, establishing that the evaluation of cost shall be at least 25 percent of the total evaluation weighting, and the importance of completing the required cost-benefit analysis prior to contract award.

Management's Response. The Assistant Administrator concurred, stating that the NASA FAR Supplement and award fee policy is and will continue to be emphasized

through training presentations and teleconference calls with Center procurement personnel.

Evaluation of Management's Response. We encourage the Assistant Administrator to make the results of this report a discussion topic in the training presentations and teleconference calls. Management's proposed actions are responsive; therefore, the recommendation is resolved and closed.

FAILURE TO ADEQUATELY COLLECT AND ANALYZE DATA HINDERS NASA'S ABILITY TO MEASURE AWARD-FEE EFFECTIVENESS

NASA maintains a database that includes contracting officers' evaluations describing how award-fee contracts motivated contractor performance and enhanced contract objectives. We reviewed 245 of these evaluations and found that 143 did not satisfy FAR requirements, NASA FAR Supplement requirements, or NASA Office of Procurement guidance. Specifically, they did not clearly explain whether the use of award fees was a positive factor in motivating contractor performance or if specific acquisition objectives were enhanced by their use. NASA's failure to collect quality data has impaired its ability to analyze and measure the effectiveness of current award-fee contracts and reduced its ability to correct deficiencies and improve future contract sourcing decisions.

Federal and NASA Acquisition Regulations Revised to Ensure Award-fee Contracts Link Fees to Acquisition Outcomes

On October 14, 2009, the FAR was revised to implement public laws concerning linkage of award and incentive fees to acquisition outcomes.³⁴ These statutes require, among other things, that Federal agencies collect relevant data on award and incentive fees paid to contractors and evaluate the effectiveness of award fees in improving contractor performance. Specifically, the implementing language of FAR 16.401(f), "Incentive and Award Fee Data Collection and Analysis" states:

Each agency shall collect relevant data on award fees and incentive fees paid to contractors and include performance measures to evaluate such data on a regular basis to determine effectiveness of award and incentive fees as a tool for improving contractor performance and achieving desired program outcomes. This information should be considered as part of the acquisition planning process . . . in determining the appropriate type of contract to be utilized for future acquisitions.

NASA implemented the requirements of the FAR change by incorporating new data input and evaluation fields into the NASA Past Performance Database for completion by the contracting officer on all award-fee contracts.³⁵ NASA's database was superseded by the introduction of the Federal-wide Contractor Performance Assessment Reporting System in July 2010, which was designated as the Federal repository for reporting of contractor performance information. Consequently, in May 2011, NASA discontinued the Past Performance Database.

³⁴ Public Law 109-364, Section 814 and Public Law 110-417, Section 867 are both entitled "Linking of Award and Incentive Fees to Acquisition Outcomes."

³⁵ NASA PIC 10-12, "Measuring Effectiveness of Award Fee Contracts," August 26, 2010.

In August 2011, the Agency revised the NASA FAR Supplement to comply with FAR guidance on *data collection and analysis of incentive and award-fee contracts* by requiring that contracting officers input award-fee evaluation information, including an evaluation of how using an award-fee contract motivated contractor performance and enhanced contract objectives, in NASA's Award Fee Evaluation System (AFES).³⁶ AFES is a NASA database that has no direct relationship to or interface with the Contractor Performance Assessment Reporting System.

NASA Failed to Collect Quality Award-fee Data

NASA's collection of the required award-fee data does not comply with FAR requirements. Specifically, the award-fee data input to AFES was not of sufficient quality to determine if the use of award fees was (1) a positive factor in motivating contractor performance or (2) if specific acquisition objectives were enhanced by the use of past and current award-fee contracts. We found the questions contracting officers are required to answer are not objective and in our opinion did not provide an explicit link between the contractor's performance on cost, schedule, and technical performance for each specific award-fee period and the subsequent award fee earned. The two AFES questions are:

- "Did the use of award fee motivate the contractor's overall cost, schedule, and technical performance as measured against contract requirements in accordance with the criteria stated in the Award Fee Plan?³⁷ Please explain."
- "Were the objectives enhanced by using an award-fee contract as stated in the determination and findings required at FAR 16.401(f)? Please explain."

We reviewed the February 2013 AFES award-fee data and found the information provided by the contracting officers for most contract periods was not specific to the relevant contract period or was not directly responsive to the questions. Specifically, we found 44 percent of the responses did not explain what aspect of the contractor's performance improved due to the award-fee process and 49 percent did not discuss whether the expected benefits cited in the initial award-fee determinations and findings were realized. In our opinion, these responses did not provide the information necessary to link contractor performance to the associated award fee.

For example, in response to the question concerning the use of award fee motivating a contractor's overall cost, schedule, and technical performance as measured against the contract requirements, one contracting officer responded that the contractor was "actively pursuing high numerical scores in their evaluation plan by meeting or exceeding the requirements in the contract." However, the contracting officer did not explicitly state

³⁶ NASA Procurement Notice 04-64, "Contractor Performance Information" (August 26, 2011).

³⁷ An award-fee plan is the same as a performance evaluation plan.

what aspect of the contractor's performance improved due to use of the award fee process (i.e., cost, schedule, or technical).³⁸

One reason for such unhelpful responses may be that NASA provides no examples in the database to illustrate an acceptable response or to communicate the types of information the contracting officer is expected to provide. Consequently, we found that 58 percent of the contract periods in AFES were not fully compliant with the FAR, NASA FAR Supplement, or NASA Office of Procurement procedural guidance. Moreover, we found that only 33 percent of the contract periods in our audit sample that should have been entered in AFES were actually in the system. A summary of our results is included in Table 5.

We reviewed the Contract Management Division's documentation for the past 2 years and found that Procurement officials did not provide adequate analysis regarding the quality of the data retained in AFES. We believe AFES data should be reviewed periodically to ensure adequate data quality and facilitate timely correction of inaccurate data or responses to the questions. The focus of these data quality reviews should be on the adequacy of the contracting officers' responses to the specific questions asked and the appropriate, timely correction of any deficiencies found.

³⁸ For example, the contracting officer could have referenced Earned Value Management data to quantitatively show an improvement in cost and/or schedule data. The FAR requires use of Earned Value Management, which is a methodology for integrating project scope, schedule, and resources, and for objectively measuring performance and progress, on all major acquisition contracts and subcontracts valued at greater than \$20 million.

Table 5. Review of AFES Data as of February 14, 2013

NASA Center	Number of Contract Award-fee Periods Entered in AFES	Number of Contract Award-fee Periods Compliant with Requirements	Number of Contract Award-fee Periods Not Compliant with Requirements	Number of Contract Award-fee Periods Not Required to be Compliant with Requirements ^a	Percentage of Award-fee Periods Not Compliant with PIC 10-12
Ames	11	2	4	5	36%
Dryden	23	17	5	1	22
Glenn	4	0	2	2	50
Goddard	47	30	16	1	34
Johnson	57	2	52	3	91
JPL	3	0	3	0	100
Kennedy	15	3	12	0	80
Langley	15	8	7	0	47
Marshall	37	13	24	0	65
NSSC	2	0	2	0	100
Stennis	31	14	16	1	52
Total	245	89	143	13	58%

^aContract award-fee period was not required to be compliant with requirement because the contract was either awarded prior to the implementation of PIC 10-12; was no longer a cost-plus-award-fee contract during the rating period; had no cost-plus-award-fee elements performed during the rating period; or the contract evaluation period was less than the rating period (i.e., 6 months).

Ames – Ames Research Center	Kennedy – Kennedy Space Center
Dryden – Dryden Flight Research Center	Langley – Langley Research Center
Glenn – Glenn Research Center	Marshall – Marshall Space Flight Center
Goddard – Goddard Space Flight Center	NSSC – NASA Shared Services Center
Johnson – Johnson Space Center	Stennis – Stennis Space Center
JPL – Jet Propulsion Laboratory	

Source: NASA OIG analysis of AFES database.

NASA needs to improve its compliance with FAR requirements to collect, analyze, and ensure relevance of the data collected to assist in future award-fee contract decisions. As previously stated, NASA estimates that it expends approximately \$50,000 to evaluate, document, and communicate contractor performance during each award-fee evaluation period. Therefore, we estimate that NASA expended approximately \$7.2 million evaluating 143 contract periods that were not in compliance with requirements and for which they did not gather relevant management information for informed decision-making.

Recommendations, Management's Response, and Evaluation of Management's Response

To improve NASA's ability to evaluate the effectiveness of award-fee contracts, we made the following recommendations to the Assistant Administrator for Procurement:

Recommendation 10. Provide examples to assist contracting officers in developing the types of analyses for entry into AFES.

Management's Response. The Assistant Administrator non-concurred, stating that instructions are clear in AFES and provided in PIC 10-12, and that contracting officers who need assistance can contact the Center AFES Super User or Help Desk.

Evaluation of Management's Response. Despite existing guidance and the availability of technical support, we found a substantial number of issues with contracting officers' AFES entries we believe could be remedied by providing contracting officers with examples. Accordingly, this recommendation is unresolved.

Recommendation 11. Require contracting officers to document in AFES an explicit link between contract performance and the subsequent award fee to ensure the database provides useful data for evaluating contractor performance and to support management decisions on current or future award-fee contracts.

Management's Response. The Assistant Administrator non-concurred, stating that the Office of Procurement is collecting and analyzing data in accordance with recommendations developed to address concerns raised by GAO in 1999. The Assistant Administrator also pointed out that a March 2013 assessment found that NASA does collect data on award-fee contracts and has a method for identifying the effectiveness of award fees.

Evaluation of Management's Response. We do not dispute that NASA has a methodology for collecting and analyzing data submitted by contracting officers. Our issue is with the quality of the data entered and its usefulness in any evaluation of award fees as a tool for improving contractor performance. Furthermore, according to GAO personnel, they did not evaluate the quality of the data or the analysis, but simply confirmed that a methodology existed. We continue to believe that NASA needs to improve the quality of the data by requiring and ensuring that contracting officers provide an explanation of how award fees affected contractor performance. Accordingly, this recommendation is unresolved.

Recommendation 12. Develop a process to improve monitoring and analysis of the information entered into AFES to ensure adequate data quality and compliance with the FAR, NASA FAR Supplement, and NASA Office of Procurement guidance and improve outcomes when using award-fee contracts.

Management's Response. The Assistant Administrator partially concurred, stating that Center Procurement Officers will be advised to biannually review AFES data for accuracy and completeness and include the results in Center self-assessments.

Evaluation of Management's Response. Management's proposed actions are responsive; therefore, the recommendation is resolved and will be closed upon completion and verification of the corrective actions.

OTHER ISSUES OF CONCERN

In 14 of 45 contracts reviewed, we identified six types of issues that negatively affected NASA's award-fee process including that NASA contracting officials did not consistently maintain critical documentation of award-fee contracts to ensure they complied with established requirements. Maintaining complete and accurate information allows NASA to monitor the use and execution of award-fee contracts more effectively.

Although we are not making formal recommendations regarding these issues, we are reporting them so that they may be addressed by the Assistant Administrator for Procurement.

Award-fee Contract Administrative Issues

Technical Factor Did Not Consider Risk Management. We found two contracts in which the technical factor did not consider risk management. The first contract was awarded to the University of California, Santa Cruz in September 2003 for additional research capabilities under the University Affiliated Research Center Program with a contract value of approximately \$120 million. The second contract was awarded to the Lockheed Martin Corporation in October 2001 for production of the Shuttle External Tank with a contract value of \$1.1 billion. The NASA FAR Supplement requires that the technical factor include consideration of risk management (including mission success, safety, security, health, export control, and damage to the environment, as appropriate) unless waived at a level above the contracting officer with the concurrence of the project manager. The rationale for the waiver should be documented in the contract file. Because the technical factor did not consider risk management, NASA had no assurance that the contractors had a plan for identifying and measuring unknown risks, developing risk mitigation options, or monitoring and reassessing risk through the life of the contract.

Poor Contract Documentation. We found four contracts that had poor or deficient documentation. For example, award-fee evaluation reports were not maintained for the Wyle Laboratories Incorporated contract. Performance monitors are required to track and document contractor performance, identifying strengths and weaknesses in performance for the period being evaluated. Performance Evaluation Boards (Boards) rely on the reports to make their performance recommendations to the FDO. Failure to create or maintain complete and accurate contract documentation could affect the quality of the performance evaluation process.

Award Fee for End-Item Contracts Clause Not Included in Contract. We found one contract that did not include NASA's Award Fee for End-Item Contracts clause as required by the NASA FAR Supplement. The contract was to Boeing North American,

Incorporated in May 2002 for work associated with the Space Shuttle Main Engine with a contract value of over \$1.1 billion. Because the clause was not included in the contract, NASA did not adequately communicate the limitations on interim and provisional payments to the contractor.

Performance Evaluation Plans Not Approved or In Place Prior to First Award-fee Period. We identified two contracts in our review for which performance evaluation plans were not approved and three contracts where the plan was not in place prior to the first award-fee period. According to the FAR, all contracts with award fees shall be supported by a performance evaluation plan approved by the FDO. The plans should establish the evaluation criteria, methods for determining an award fee, methods for implementing any changes in plan coverage, and provide an organizational structure for award fee administration. The plans are essential to the effective and efficient oversight and monitoring of award-fee contracts.

For example, we found a contract valued at more than \$109 million awarded to Lockheed Martin Space Operations in July 2002 for scientific, engineering, and technical services that did not have the performance evaluation plan in place prior to the first award-fee period. The plans should be established prior to the start of the award-fee periods so both NASA and the contractor recognize the standards and criteria under which contractors will be evaluated.

Performance Evaluation Board Not Appointed Prior to Start of Award-fee Periods. We found two contracts where the Board was not appointed prior to the first evaluation period. The first contract was to ADNET Systems, Incorporated in May 2006 for space and earth science data analysis with a contract value of approximately \$206 million. The second contract was to ITT Corporation in October 2008 for space communications and network services with a value of approximately \$195 million. The purpose of the Board is to evaluate the contractor's overall performance for the award-fee evaluation periods, which leads to a recommended award-fee amount to the FDO.

No Appointment Letter for Alternate Contracting Officer's Technical Representative. We found one contract to Analex Corporation in January 2008 for environmental test and integration services with a value of up to \$190 million that did not have an appointment letter for the alternate Contracting Officer's Technical Representative (COTR). Contracting officers appoint qualified Government employees to act as their representative in managing the technical aspects of particular contracts. The technical organizations are responsible for ensuring that the individual they recommend as COTR possesses training, qualifications, and experience commensurate with the duties and responsibilities delegated by the contracting officer and the nature of the contract. The contracting officer must designate and authorize the COTR, in writing, to perform specific technical or administrative functions. Without an official appointment of the alternate COTR, NASA did not have someone to act as the technical liaison between the contracting officer and contractor during absences of the COTR. Ultimately, NASA had no assurance in the COTR's absence that the contractor's performance was properly monitored.

Scope and Methodology

We performed this audit between May 2012 and September 2013 in accordance with generally accepted government auditing standards.³⁹ The standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The primary audit locations and contracts reviewed were determined based upon a statistical sample of contract obligations completed during FYs 2009 through 2011. Audit locations included Ames Research Center, Dryden Flight Research Center, Goddard Space Flight Center, NASA HQ, Johnson Space Center, Kennedy Space Center, Langley Research Center, and Marshall Space Flight Center.

We were provided with a list of all contract obligations and award-fee contract obligations for FYs 2009 through 2011 from the Federal Procurement Data System-Next Generation to determine the population. We received the data by NASA Center separated by FY and compiled by all contracts and award-fee contracts. We then sorted the data by contract number, then modification number in order to identify unique contract numbers. The results were as follows:

1. Of all contract and award-fee contract obligations (actions) made between FYs 2009 and 2011, there were 453 award-fee contract actions involving award-fee contracts for this period. This is equivalent to 9 percent of all contract actions (5,036) during this period.
2. Award-fee contract actions accounted for 72 percent of all contract obligations during this period (\$24.6 billion of \$33.9 billion).
3. The 453 award-fee contract actions involved 186 different (unique) contracts, or 6.9 percent of all unique contracts (2,704). This constituted our audit universe.

We then selected a simple random sample of 45 contracts with award fees from the universe of 186 contracts with obligations conducted between FYs 2009 through 2011. We used the attribute sample design with the method of selection (simple random

³⁹ The audit was temporarily suspended from August 20, 2012, through September 21, 2012 to complete other audit priorities.

sample) being any contract with an award fee from FYs 2009 through 2011. We used an 80 percent confidence level with 10 percent estimated attribute error rate and 5 percent desired precision or sampling error.

To accomplish our objectives, we:

- Reviewed 502 of 557 award-fee evaluation periods for the contracts selected. We excluded 55 award-fee evaluation periods due to age or classification restrictions.
- Reviewed OMB Memorandum on “Appropriate Use of Incentive Contracts,” December 4, 2007.
- Reviewed FAR Subpart 16.4, “Incentive Contracts.”
- Reviewed NASA FAR Supplement Subpart 1816.4, “Incentive Contracts.”
- Reviewed “NASA Award Fee Contracting Guide,” June 27, 2001.
- Reviewed “Department of Air Force Award Fee Guide,” July 12, 2010, Revised August 13, 2010.
- Reviewed contract file documentation used to evaluate contractor performance including: Cost-Benefit Analyses, Performance Evaluation Plans, COTR Appointment Memorandums, Award Fee Evaluation Reports, FDO Letters, Award Fee Modifications, Contractors’ Self Evaluations, and Determination and Findings.
- Reviewed evaluation and payment processes to verify that (1) award fees were paid in accordance with the award-fee plan, and (2) award terms, when earned, were adequately explained and supported in accordance with the award-term incentive provisions of the contract.
- Interviewed contracting and program officials responsible for monitoring contractor performance and to gain an understanding of how they evaluated performance, determined adjectival ratings, and numerical scores.
- Interviewed NASA Procurement Policy officials to gain an understanding of NASA award-fee policies and procedures, and how guidance was implemented.
- Interviewed end-item and service contractors to ascertain their perspective on NASA’s use of award-fee contracts and how the contracts motivate their performance.
- Reviewed an extract of award-fee contract periods retained in NASA’s AFES on February 14, 2013. Compared the contract periods retained in AFES against the contracts randomly selected and included in our audit sample. Additionally, we compared data elements in AFES against FAR 16.401(f), “Incentive and Award Fee

Data Collection and Analysis,” and NASA FAR Supplement 1842.1503(b), “Contractor Performance Information.”

Use of Computer-Processed Data. To identify our audit universe, we used the Federal Procurement Data System-Next Generation. We did not specifically validate the accuracy of the data in the System, as the data is only as accurate as that entered by procurement staff. However, when reviewing contract files, we did not detect any issues with the data as entered. In addition, we used AFES to determine NASA’s compliance with FAR 16.401(f), “Incentive and Award Fee Data Collection and Analysis,” and NASA FAR Supplement 1842.1503(b), “Contractor Performance Information.” We compared the contract periods retained in AFES against the contracts randomly selected and included in our audit sample. Although we did not encounter any computer data reliability issues, we did identify the aforementioned internal control deficiencies.

Review of Internal Controls

We reviewed and evaluated the internal controls associated with documenting the evaluation of performance, assigning adjectival ratings and numerical scores, and determining the final award-fee score. While we found deficiencies in all three areas, as discussed in this report, we found no incidents of fraud or illegal acts. Our recommendations, if implemented, should correct the weaknesses we identified.

Prior Coverage

The NASA OIG issued six reports that were relevant to this audit. In addition, GAO issued five reports and one follow-up assessment of particular relevance, Department of Commerce OIG issued one report, and Department of Transportation OIG issued one report. Those unrestricted reports can be accessed at <http://oig.nasa.gov/audits/reports/FY09>, <http://www.gao.gov>, <http://www.oig.doc.gov/Pages/Audits-Evaluations.aspx>, and <http://www.oig.dot.gov/audits/2010>, respectively.

NASA Office of Inspector General

“Review of NASA’s Microgravity Flight Services” (IG-10-015, June 18, 2010).

“NASA Should Reconsider the Award Evaluation Process and Contract Type for the Operation of the Jet Propulsion Laboratory” (IG-09-022-R, September 25, 2009).

“Final Memorandum on Audit of the Stratospheric Observatory for Infrared Astronomy (SOFIA) Program Management Effectiveness” (IG-09-013, March 27, 2009).

“Faster, Better, Cheaper: Policy, Strategic Planning, and Human Resource Alignment” (IG-01-009, March 13, 2001).

“Consolidated Space Operations Contract – Cost-Benefit Analysis and Award Fee Structure” (IG-00-043, September 20, 2000).

“Performance Evaluation Plan for the Earth Observing System Data and Information System Core System Contract” (IG-99-038, September 8, 1999).

Government Accountability Office

“General Government: Award Fee Contracts,” GAO Action Tracker, March 6, 2013 (http://www.gao.gov/duplication/action_tracker/Award_Fee_Contracts/action1).

“Application of OMB Guidance Can Improve Use of Award Fee Contracts” (GAO-09-839T, August 2009).

“Federal Contracting: Guidance on Award Fees Has Led to Better Practices but Is Not Consistently Applied” (GAO-09-630, May 2009).

“NASA Procurement: Use of Award Fees for Achieving Program Outcomes Should Be Improved” (GAO-07-58, January 2007).

“DOD Has Paid Billions in Award and Incentive Fees Regardless of Acquisition Outcomes” (GAO-06-66, December 2005).

“Major Management Challenges and Program Risks” (GAO-03-114, January 2003).

Other Agencies

“NOAA’s Cost-Plus-Award-Fee and Award-Term Processes Need to Support Fees and Extensions” (U.S. Department of Commerce OIG-12-027-A, May 2012).

“Improvements in Cost-Plus-Award-Fee Processes are Needed to Ensure Millions Paid in Fees are Justified” (Department of Transportation OIG ZA-2010-092, August 2010).

AUDIT UNIVERSE AND ISSUES BY CENTER AND CONTRACT

An 'X' denotes the issue(s) identified for each contract. A Description of Issues follows the chart.

	Contract Number	Issue 1	Issue 2	Issue 3	Issue 4	Issue 5	Issue 6	Issue 7	Issue 8	Issue 9	Issue 10	Issue 11	Issue 12	Issue 13	Issue 14	Issues per Contract
Ames	NAS2-02090	X											X			2
	NAS2-03144	X								X						2
	NNA05-AC42C	X														1
	NNA06-AA01C	X														1
	NNA06-CD65C				X											1
	NNA07-CA29C	X														1
	NNA08-BA33C								X							1
	NNA08-BA35C	X					X		X							3
	NNA08-BA97C												X			1
Dryden	NAS4-00047	X														1
	NND06-PS01C	X						X					X			3
	NND07-PS02C							X								1
Goddard	NAS5-30384															0
	NAS5-32314	X														1
	NAS5-96090															0
	NAS5-01089	X		X			X	X					X			5
	NAS5-02200	X				X										2
	NNG04-EA00C	X														1
	NNG04-HZ07C															0
	NNG04-HZ24C	X	X	X												3
	NNG05-HY12C	X									X					2
	NNG06-EB68C													X		1
	NNG06-HX01C															0
	NNG06-HX09C	X														1
	NNG06-HX18C															0
	NNG07-CA21C															0
	NNG07-HW18C	X														1
NNG07-HW20C					X										1	
NNG08-CA01C														X	1	

	Contract Number	Issue 1	Issue 2	Issue 3	Issue 4	Issue 5	Issue 6	Issue 7	Issue 8	Issue 9	Issue 10	Issue 11	Issue 12	Issue 13	Issue 14	Issues per Contract
HQ	NNG08-HZ18C															0
	NNG09-DA01C													X		1
	NNG10-WA14C	X														1
Johnson	NNH06-CE25C															0
	NAS15-10000															0
	NAS9-01056	X									X					2
Kennedy	NAS9-02078										X					1
	NNJ06-VA01C	X														1
	NAS10-02007	X														1
Langley	NNK08-OC01C	X														1
	NNK08-OO11C	X														1
	NNL09-AA04C	X											X			2
Marshall	NAS8-97238	X														1
	NAS8-00016	X								X	X					3
	NAS8-01140	X										X				2
	NAS8-02060															0
Total		26	1	2	1	2	2	3	2	2	4	1	5	2	1	54

Description of Issues

Number	Addressed In	Issue
1	Finding 1	Miscalculation of payments
2	Finding 3	Award fee inappropriately allocated to post-launch period
3	Finding 3	Award-fee periods combined to allow additional time to better perform or earn additional fee
4	Finding 3	Award fee earned does not appear justified based on evaluations
5	Finding 3	Overall excellent rating received when technical performance rated lower, cost overruns, and/or schedule delays
6	Finding 3	Cost control not evaluated at a minimum of 25 percent
7	Finding 3	Award-fee pool not defined or allocated
8	Finding 3	Cost-Benefit Analysis not completed
9	Other Issues	Technical factor did not consider risk management
10	Other Issues	Poor contract documentation
11	Other Issues	Award Fee for End-Item Contract clause not included in contract
12	Other Issues	Performance Evaluation Plans not approved or in place prior to first award-fee period
13	Other Issues	Performance Evaluation Board not appointed prior to start of award-fee periods
14	Other Issues	No appointment letter for alternate COTR

Source: OIG analysis.

INCORRECT PAYMENTS AND QUESTIONED COSTS

The chart identifies the dollar value of the incorrect payments and questioned costs associated with each contract. Total differences are due to rounding.

	Contract Number	Estimated Costs and Available Award Fees ^a	Incorrect Payments (Finding 1)	Award Fee for End-Item Payments (Finding 2)	Evaluation and Acquisition Practices (Finding 3)	Total
Ames	NAS2-02090	\$313,116,972	\$344,308			\$344,308
	NAS2-03144	326,898,570	49,910			49,910
	NNA05-AC42C	26,504,564	16,108			16,108
	NNA06-AA01C	12,528,971	6,685			6,685
	NNA06-CD65C	19,583,303			\$417,727	417,727
	NNA07-CA29C	276,800,062	55,389			55,389
	NNA08-BA33C	3,073,364				
	NNA08-BA35C	994,275	6,958		18,090	25,048
NNA08-BA97C	27,483,838					
Dryden	NAS4-00047	178,265,747	27,845			27,845
	NND06-PS01C	12,971,690	12,436			12,436
	NND07-PS02C	39,191,674				
Goddard	NAS5-30384	199,785,351				
	NAS5-32314	224,757,117	284,287			284,287
	NAS5-96090	237,651,633				
	NAS5-01089	188,857,745	1,040,460	\$835,470	1,345,379	3,221,310
	NAS5-02200	2,064,232,524	40,896		169,499	210,395
	NNG04-EA00C	100,652,439	239,235			239,235
	NNG04-HZ07C	716,443,848				
	NNG04-HZ24C	76,446,809	865,548		416,810	1,282,358
	NNG05-HY12C	207,651,367	798,338			798,338
	NNG06-EB68C	241,422,823				
	NNG06-HX01C	106,297,736				
	NNG06-HX09C	24,990,297	27,058			27,058
	NNG06-HX18C	83,000,000				
	NNG07-CA21C	748,626,144				
	NNG07-HW18C	182,210,684	992,860			992,860
	NNG07-HW20C	187,191,005			33,555	33,555
	NNG08-CA01C	46,109,283				
NNG08-HZ18C	16,584,770					
NNG09-DA01C	200,700,607					
NNG10-WA14C	125,670,000	124,932			124,932	
HQ	NNH06-CE25C	19,866,726				
Johnson	NAS15-10000	16,251,162,118				
	NAS9-01056	199,668,534	21,827			21,827
	NAS9-02078	1,136,695,426				
	NNJ06-VA01C	8,740,745,075	3,987,921			3,987,921

	Contract Number	Estimated Costs and Available Award Fees ^a	Incorrect Payments (Finding 1)	Award Fee for End-Item Payments (Finding 2)	Evaluation and Acquisition Practices (Finding 3)	Total
Kennedy	NAS10-02007	881,778,167	912,925			912,925
	NNK08-OC01C	665,467,034	271,643			271,643
	NNK08-OO11C	49,109,686	8,262			8,262
Langley	NNL09-AA04C	51,882,444	222,790			222,790
Marshall	NAS8-97238	3,905,017,113	29,174,764			29,174,764
	NAS8-00016	2,733,505,764	18,203,653			18,203,653
	NAS8-01140	2,099,817,970	8,685,900			8,685,900
	NAS8-02060	374,392,827				
Total		\$44,324,663,951	\$66,422,940	\$835,470	\$2,401,060	\$69,659,470

^aThe estimated costs and available award fees are relative to the periods reviewed during the audit and may be different from the contract values cited in the body of the report. Contract values are the estimated costs and available fees at the time of contract award. Contract values may change throughout performance to account for additional work and definitization of cost overruns.

Source: OIG analysis.

MANAGEMENT COMMENTS

National Aeronautics and Space Administration
Headquarters
Washington, DC 20546-0001



NOV 13 2013

Reply to Attn of: Office of Procurement

TO: Assistant Inspector General for Audits
FROM: Assistant Administrator for Procurement
SUBJECT: Response to Office of the Inspector General (OIG) Draft Audit Report, "NASA's Use of Award Fee Contracts" (Assignment No. A-12-021-00)

The Office of Procurement (OP) appreciates the opportunity to review your draft audit report entitled "NASA's Use of Award Fee Contracts" (Assignment No. A-12-021-00), dated September 18, 2013.

We are pleased by the findings that the OIG did not find any instances of fraud, waste, or abuse associated with NASA's use of award fee type contracts. We appreciate the OIG's acknowledgement that we implemented processes to improve the NASA award fee process based upon findings in previous Government Accountability Office (GAO) reports. We are also encouraged by GAO's assessment, dated March 6, 2013, which stated that there has been "sustained progress in implementing the 2009 Federal Acquisition Regulation changes regarding award fees and actions taken to evaluate the effectiveness of award fee contracts as a tool for improving performance, as GAO recommended in May 2009."

We are especially pleased that GAO found that NASA was not utilizing unearned award fee rollovers on their award fee contracts. However, we specifically non-concur with several of the recommendations. We do not agree with the analysis and findings drawn in the report because many of those findings are based on an analysis of the principles of award fee contracts with which we disagree.

We disagree with OIG's understanding of the term "rollover of unearned award fee" when discussing the end-item award fee concept (see Federal Acquisition Regulation (FAR) 16.001 for definition of "rollover of unearned award fee"). The use of the terms "earned" and "unearned" are very important in the award fee environment. Under the end-item award fee concept, interim evaluations allow the Government to assess the contractor's performance prior to final delivery of the end-item. The interim evaluations provide valuable feedback to the contractor on their performance as well as provide a form calibration on provisional award fee payments. The contractor does not "earn" award fee during an interim evaluation. Award fee is "earned" in final award fee evaluations. Therefore, the OIG's assertion that NASA is rolling over unearned award fee under the end-item award fee process and paid approximately \$835,470 in award fees rolled over from interim evaluation periods is not correct. Furthermore, the GAO did a follow-up assessment dated, March 6, 2013, in regard to award fee contracts where they found no

indication of the rollover of unearned award fees in NASA award fee contracts (see GAO Report at http://www.gao.gov/duplication/action_tracker/Award_Fee_Contracts/action1).

OIG's interpretation of "rollover of unearned fee" appears to be the basis for the OIG's disapproval of provisional payments used in contracts for end-item award fee contracts. The OIG believes this practice circumvents the FAR prohibition of rollover of unearned award fees allowing NASA to include any funds not awarded in the interim periods in the final award pool. In fact, NASA's use of provisional award fee provides an excellent method of communication with the contractor during contract performance. It would be unusual that a contractor not be paid any fee for work until the completion of the award fee evaluation. Moreover, provisional payments are not "earned." NASA reconciles or "trues -up" the interim payments as part of the final award fee evaluation.

On page 10, the report mistakenly creates the impression that NASA overpaid contractors by approximately \$66.4 million, which is not the case. The OIG asserts the complex formulas in the award fee clauses resulted in these overpayments. The OIG, however, failed to recognize that NASA reconciled or "trued-up" interim payments, which are typically done every 6 months, before the final award fee payment was made. Thus, no overpayment of \$66.4 million exists. NASA contractors were paid only the amount of money earned under award fee contracts.

On page 17, the OIG discussed the "Hubble Psychology," where the OIG contends NASA will overlook cost and schedule overages as long as a mission provides good science. FAR policy clearly requires that award fee evaluation criteria be linked to acquisition objectives defined in the terms of cost, schedule, and technical performance. NASA award fee guidance clearly illustrates that cost, schedule, and technical performance be taken into account in the final award fee evaluation period. OIG provides no substantive evidence to demonstrate that cost and schedule overages were disregarded in an end-item award fee contracts final evaluation period.

On page 29, the OIG incorrectly asserts that NASA's collection of the required award fee data does not comply with the FAR. NASA is complying fully with the requirements of FAR 16.401(f) when we implemented the award fee data collection and reporting recommendations of the Office of Federal Procurement Policy (OFPP) Incentive Contracting Working Group (ICWG). Furthermore, GAO's assessment, dated March 6, 2013, clearly indicated NASA collects data on award fee contracts and identified a method to evaluate the effectiveness of award fee as a tool for improving contract performance.

On page 29, we are concerned with the overall method the OIG used to calculate the \$7.2 million of questioned costs relative to the OIG finding that NASA failed to collect and analyze award fee data. The OIG calculation multiplies the \$50,000 estimate for NASA to evaluate, document, and communicate the results to the contractor during each award fee evaluation period times the 143 award fee periods that we allegedly did not collect award fee data to yield the \$7.2 million in questioned costs. This computation is unsupported, inappropriate, and misleading since (1) it assumes that the entire award fee evaluation was invalid because data was not collected and analyzed from that evaluation period and (2) there is no valid correlation between the \$50,000 estimate to perform an award fee evaluation and the collection of award fee data after the evaluation is completed.

On page 21, we believe the OIG's calculation of approximately \$2.4 million in excess award fees is also incorrect. In one case, the OIG contends 25 percent of the overall award fees paid to the contractor (approximately \$1 million) was excessive since a separate cost control evaluation criterion was not included in one award fee contract at the required 25 percent weighted value. This assumption is flawed, since it does not take into account the contractor's performance with regard to cost control under this contract.

In the draft report, the OIG outlines several recommendations. NASA's responses to these recommendations, including planned corrective actions, are as follows:

The Assistant Administrator for Procurement should:

Recommendation 1: Simplify the mathematical formulas used to calculate interim and provisional payments and update the NASA FAR Supplement accordingly.

Management's Response: NASA non-concurs with this recommendation. NASA's provisional payment formulas under award fee contracts are not overly complex. The proper application of the formula to a particular award fee situation can be confusing without the proper training, but the formula itself is not overly complex. The formula as written ensures that the proper amount of provisional award fee is paid during the life of an end-item award fee contract, based upon any situation and award fee rating that may occur.

Estimated Completion Date: N/A

Recommendation 2: Require the same formula for service and end-item contracts and update the NASA FAR Supplement accordingly.

Management's Response: NASA non-concurs with the recommendation. OP has researched this possibility in the past, but determined that using the same formula employed under service type contracts for end-item contracts will not ensure that the proper amount of provisional award fee payments are made under the end-item award fee concept.

Estimated Completion Date: N/A

Recommendation 3: Implement a process to test the accuracy of award fee calculations on an ongoing basis.

Management's Response: NASA concurs with the recommendation. OP already conducts on a regular basis Procurement Management Reviews (PMR). The purpose of the PMR is to provide continuous oversight and a periodic review of the contracting activities throughout NASA. In addition, each NASA Center on a regular basis carries out a procurement processes and actions self-assessment. These Center self-assessments also identify and assess potential areas of concern resulting from PMR findings, audit findings, or a regulatory change. However, OP will communicate with each Center procurement officer advising them that, if they are not already doing so, to engage their Procurement Office cost/price analyst in the Center self-assessments to

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review the accuracy of provisional award fee payment calculations at their respective Center. This review should be conducted at least twice a year with the results included in the Center self-assessment.

Estimated Completion Date: OP anticipates issuance of the communication within 120 days of issuance of the final OIG report.

Recommendation 4: Direct contracting officers to review on-going award fee contracts to ensure that calculations are appropriate and accurate for contract type and adjust contract payments as necessary.

Management's Response: NASA concurs with the recommendation. OP believes that it would be prudent to remind acquisition personnel of the importance of ensuring that provisional award fee payment calculations are performed accurately. Accordingly, OP will communicate with the Center Procurement Officers requiring that they emphasize to their Contracting Officers the importance of ensuring that provisional award fee payment calculations are performed accurately.

Estimated Completion Date: OP anticipates issuance of the communication within 90 days of issuance of the final OIG report.

Recommendation 5: Provide additional training to Agency contracting officers on proper calculation of award fee payments.

Management's Response: NASA concurs with the recommendation. Although OP already provides Agency contracting officers with training opportunities where the course content covers this recommendation, we believe that it would be prudent to remind acquisition personnel of the importance of ensuring that provisional award fee payment calculations are performed accurately. Accordingly, OP will provide a one-time training webinar to all Center contracting officers on provisional award fee payment calculations. The procurement officers will be advised that this one-time training webinar will be mandatory for their contracting officers.

Estimated Completion Date: OP anticipates development and delivery of the above referenced training session to be completed with nine months of issuance of the final OIG report.

Recommendation 6: Consider eliminating provisional award fee payments.

Management's Response: NASA non-concurs with the recommendation. OP has already considered eliminating provisional award fee payments and believes that provisional award fee payments are a valuable tool for our contracting officers to have in negotiating fair and reasonable contractual arrangements with industry. It would be unreasonable to expect contractors doing business with NASA to not be paid any fee for the work they have accomplished until completion of the award fee evaluation period, which could be typically anywhere from 6-12 months in length.

Estimated Completion Date: N/A

Recommendation 7: Revise NASA FAR Supplement 1852.216-77 so that award fees not earned in interim evaluations are not available to contractors at the end of contract performance or use the end-item contract final evaluation only for downward adjustments following catastrophic events or failures. Alternatively, NASA should designate a specific percentage of the total award pool that will be available for the final performance evaluation.

Management's Response: NASA non-concurs with the recommendation. As stated above, we disagree with the OIG's understanding of the FAR concept regarding the "rollover of unearned award fee." The contractor does not "earn" award fee during an interim evaluation. Award fee is "earned" in final award fee evaluations. Therefore, the OIG's assertion that NASA is rolling over unearned award fee under the end-item award fee process is not correct. Use of the end-item final award fee evaluation for downward adjustments only would assume that each interim award fee evaluation is a final award fee determination, which would undermine the entire end-item award fee concept. Under the end-item award fee concept, the final rating supersedes all interim ratings. The final rating reflects the contractor's position at the end of the contract rather than its progress toward providing the end item. Interim award fee evaluations only indicate whether or how well the contractor will produce the end item; interim award fee evaluations cannot assess actual quality of the end item. Thus, treating the final end-item award fee evaluation period as downward only would essentially make each interim award fee evaluation periods a final evaluation period and would diminish the importance of having a workable end product at contract completion. The designation of a specific percentage of the total award fee pool for the final evaluation period under the end-item award fee concept would not be in NASA's best interests. Under the end-item award fee concept, the total award fee pool is under consideration in the final evaluation period and not, as the OIG recommends, some percentage of the total available award fee.

Estimated Completion Date: N/A

Recommendation 8: Issue guidance requiring performance evaluation plans to contain specific criteria for the final evaluation for end-item contracts.

Management's Response: NASA non-concurs with the recommendation. FAR guidance already exists requiring that award fee plans identify the award fee evaluation criteria that the contractor will be assessed against to motivate enhanced performance in the areas of cost, schedule, and technical performance. Guidance also exists in the NASA award fee guide that clearly requires that the Government communicate to the contractor the evaluation criteria to be utilized in evaluating the contractor's performance in determining the amount of award fee they can earn.

Estimated Completion Date: N/A

Recommendation 9: Should reemphasize or issue additional guidance as applicable prohibiting the combination of award fee periods, reemphasizing that award fees shall be commensurate with the work performed, setting forth the criteria that must be met to receive an overall rating of excellent, and establishing that the evaluation of cost shall be at least 25 percent of the total

evaluation weighting. In addition, the guidance should reemphasize the importance of completing the required cost-benefit analysis and determinations and findings documents prior to contract award.

Management's Response: NASA concurs with the recommendation. The NASA FAR Supplement already contains policy relative to setting forth the criteria that must be met to receive an overall rating of excellent and the requirement that cost criteria be weighted at minimally 25 percent. However, per the recommendation, NASA award fee policy is already and will continue to be, reemphasized on a reoccurring basis through training and as a topic on monthly OP policy teleconference calls with the Centers, when needed.

Estimated Completion Date: NASA award fee policy is reemphasized on a reoccurring basis through training and as a topic on monthly OP policy teleconference calls with the Centers, when needed.

Recommendation 10: Provide examples to assist contracting officers in developing the types of analysis for entry into AFES.

Management's Response: NASA non-concurs with the recommendation. In the Award Fee Evaluation System (AFES) for the field, "Did the use of award fee motivate the contractor's overall cost, schedule, and technical performance as measured against contract requirements in accordance with the criteria stated in the award fee plan? Please explain," the contracting officer must first answer "yes" or "no" to this question and then provide a detailed narrative explanation supporting their answer. This process is explained in both Procurement Information Circular 10-12 and in the AFES. If the contracting officer needs assistance, they can request support from their Center AFES/NAIS Super User or the AFES/NAIS Help Desk.

Estimated Completion Date: N/A

Recommendation 11: Require contracting officers to document in AFES an explicit link between contract performance and the subsequent award fee in order to ensure the database provides useful data for evaluation contractor performance and to support management decisions on current award fee contracts.

Management's Response: NASA non-concurs with the recommendation. OP has implemented the recommendations of the OFPP ICWG, which addressed the concerns raised in GAO Report 99-630. These recommendations provided the types of award fee data that would be collected in order to ensure Government agencies met the requirements of FAR 16.401(f) and effectively measured the effectiveness of award fee contracts. OP is collecting and analyzing award fee data in accordance with these recommendations. OP would like to note that GAO's assessment, dated March 6, 2013, clearly found that NASA collects data on award fee contracts and has an identified method to evaluate the effectiveness of award fee as a tool for improving contract performance.

Estimated Completion Date: N/A

Recommendation 12: Develop a process to improve monitoring and analysis of the information entered into AFES to ensure adequate data quality and compliance with the FAR, NASA FAR Supplement, and NASA Office of Procurement guidance and improve outcomes when using award fee contracts.

Management's Response: OP partially concurs with the recommendation. NASA already has a process in place monitor and analyze award fee data collected in AFES through our PMR and associated Center self-assessment processes. However, OP will provide a communication to the Center procurement officers advising them that, if they are not already doing so, to monitor the information entered into AFES for accuracy and completeness. The review should be conducted at least twice a year with the results included in the Center self-assessment.

Estimated Completion Date: OP anticipates issuance of the communication within 120 days of issuance of the final OIG report.

Thank you for the opportunity to review and comment on the subject draft audit report. If you have further questions or require additional information on the NASA response to the draft report please contact Bill Roets at 202-358-4483.



William P. McNally

REPORT DISTRIBUTION

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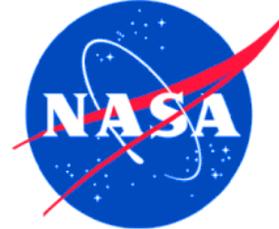
Gary Weishaar, Management Analyst, Team Lead

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