WRITTEN TESTIMONY OF JOHNNIE E. FRAZIER
INSPECTOR GENERAL, U.S. DEPARTMENT OF COMMERCE

"Poor Management Oversight and Ineffective Incentives Leave NPOESS Program Well Over Budget and Behind Schedule"

BEFORE THE HOUSE SCIENCE COMMITTEE
MAY 11, 2006

Chairman Boehlert and Members of the Committee, I appreciate the opportunity to discuss my office's work on the National Polar-orbiting Operational Environmental Satellite System (NPOESS). The report we are releasing today, "Poor Management Oversight and Ineffective Incentives Leave NPOESS Program Well Over Budget and Behind Schedule," describes problems that have contributed to this vital program being more than $3 billion over initial life-cycle cost estimates and 17 months behind schedule, according to the Government Accountability Office. Despite these problems, the contractor has received $123 million in incentive payments—*84 percent* of the amount available under the NPOESS award fee contract for the first six award periods.

I am pleased to note that in his response to our report, Deputy Secretary Sampson stated that both he and Secretary Gutierrez are fully committed to providing strong oversight and management of NPOESS. My testimony will outline specific actions for NOAA to implement our recommendations, and we look forward to Secretarial direction and oversight in ensuring our recommendations are implemented.

Background

In 1994, by Presidential Decision Directive, the National Oceanic and Atmospheric Administration (NOAA) merged its Polar Operational Environmental Satellite (POES) Program with the Department of Defense's Defense (DoD) Meteorological Satellite Program to produce the National Polar-orbiting Operational Environmental Satellite System (NPOESS). NPOESS was envisioned as a single state-of-the-art environmental and climate monitoring system that would reduce duplication and significantly cut the cost of satellite operations engaged in obtaining critical meteorological data. Early estimates for NPOESS put life-cycle costs at $6.5 billion and set a deadline of March 2008 for the first satellite launch.

The merger assigned shared management to NOAA and DoD, along with the National Aeronautics and Space Administration (NASA), whose experience with its own earth observing satellites is expected to improve NPOESS capabilities. The three agencies formed an Integrated Program Office (IPO) within NOAA to manage NPOESS and specified their individual responsibilities in a memorandum of agreement (MOA).

According to that document, NOAA is charged with overall management of the converged system and provides the system program director, who reports to the NOAA Administrator through the NOAA Assistant Administrator for the National Environmental Satellite, Data and Information Service (AA/NESDIS); DoD is the lead on acquisition matters; and NASA is the lead for promoting transition to new technologies. Because of the importance of NPOESS to national and global climate monitoring capabilities, overall program guidance was assigned to an executive committee (EXCOM) made up of top leadership from each agency: the Under Secretary of Commerce for Oceans and Atmosphere, the Under Secretary of Defense for Acquisition and Technology, and the NASA Deputy Administrator. Though not stipulated in the MOA, the agencies formed a steering committee to provide additional executive leadership: committee members include the assistant administrator for NESDIS and his counterparts at DoD and NASA, each of whom reports to the EXCOM member for their agency.

NPOESS acquisition plans call for, among other things, procurement of six satellites and development of seven instruments, including the Visible/Infrared Imager Radiometer Suite (VIIRS)[1]—one of four sensors considered critical to the program. To reduce risk associated with the NPOESS program, NASA is conducting the NPOESS Preparatory Project (NPP)—which entails launching a demonstration satellite equipped with VIIRS and two other critical sensors to test their capabilities prior to the launch of the first NPOESS satellite.

In August 2002, the IPO, using DoD's contracting authority, awarded a single, satellite integration contract worth $4.5 billion to a prime contractor, incorporating previously awarded sensor contracts as subcontracts to the prime. The prime contract included an award fee arrangement to encourage outstanding performance, making it possible for the contractor to earn up to 20 percent of total estimated costs in three types of fees:

- Base fees are a guaranteed 2 percent of estimated costs, paid to the contractor automatically each billing period. The total base fee pool is $57,190,785.
- Award fees—capped at 13 percent of estimated contract cost or $369,294,988—are tied to the government's assessment of the contractor's performance in three broad areas: management, technical, and cost.
- Mission success fees—capped at 5 percent of estimated contract cost or $136,817,498—are tied to the contractor's performance in meeting seven program milestones (called "events").

Criteria for the latter two fees are largely subjective. The plan also allows for unearned award and mission success fees from one billing period to be rolled over to subsequent periods, giving the contractor additional opportunities to earn them.

[1] VIIRS collects visible/infrared imagery and radiometric data. Data types include atmospheric, clouds, earth radiation budget, clear-air land/water surfaces, sea surface temperature, ocean color, and low light visible imagery.

Audit Objectives

The objectives of our audit were to determine (1) how problems with the NPOESS program are identified and communicated by the contractor to the IPO, and by the IPO to NOAA management, and (2) whether award fees to the contractor are being administered effectively. Because of the criticality of the VIIRS sensor and the problems experienced with its development, our audit focused on VIIRS issues as they affect NPOESS. Our review evaluated communication between the contractor and the IPO, and the IPO and EXCOM but did not assess the performance of the prime contractor or any of the subcontractors. We coordinated with the General Accountability Office to ensure that our work did not overlap their ongoing efforts in this area.

Overview of OIG Findings

Our review uncovered two overarching management and contract weaknesses that contributed to the unchecked cost and schedule overruns in the NPOESS program. First, EXCOM—the committee comprised of top NOAA, DoD, and NASA officials and charged with providing overall policy and guidance—did not effectively challenge optimistic assessments of the impact of VIIRS problems on NPOESS. Second, the contractor received excessive award fees for a problem-plagued program.

Finding 1: EXCOM Did Not Effectively Challenge Optimistic Assessments of the Impact of VIIRS Problems on NPOESS

Despite mounting evidence of serious problems as VIIRS development proceeded, EXCOM did not effectively challenge the IPO's optimistic assessments that the problems would not delay the first NPOESS launch or exceed the program's management reserve. Inadequate management oversight, in effect, postponed critical evaluations and decisions needed to replan the program's faltering elements and contain cost and schedule overruns. Time and money were thus wasted as NPOESS problems continued unchecked. And VIIRS is not the only high-risk element of NPOESS—another key sensor, CMIS poses significant risk.

Our report discusses the communication between the contractor and the Integrated Program Office and between that office and the EXCOM, and focuses on the monthly status reports presented by the IPO to EXCOM that detail critical cost, schedule, and technical progress data on NPOESS and that contain a wealth of information about the problems with VIIRS.

According to program officials, EXCOM was heavily involved early in the program, but its involvement dwindled over time. It met only sporadically throughout the period in which the VIIRS problems were occurring. In the 32-month period from May 2003 through December 2005, EXCOM met formally six times and did not meet at all from May to December 2003, even as monthly reports showed VIIRS subcontract-induced delays and dubbed the sensor "our problem child." The 2004 monthly reports repeatedly advised of overruns on VIIRS as well; however, in that year EXCOM met only in June and July 2004. Although the monthly reports continued to warn of VIIRS schedule erosion and cost overruns, EXCOM did not meet again until late January 2005—one month after the report stating that VIIRS would not meet its deadline for delivery to NPP and the NPP launch would be delayed. At that meeting, the program director briefed EXCOM on the VIIRS problems, stating that NPOESS should not be affected. However, on March 31, 2005, the contractor advised the program director that VIIRS problems would delay the first NPOESS launch.

NOAA's Response to Finding on EXCOM

NOAA emphasized that NPOESS is one of the most complex environmental satellite programs ever undertaken. NOAA also maintained that EXCOM was directly involved in program oversight and described various actions taken, including requesting various independent studies.

NOAA, OIG, and all interested parties agree that NPOESS is an extraordinarily complex program. But it is precisely because of this complexity that we would have expected much closer and documented oversight by EXCOM. Although NOAA maintained that EXCOM was directly involved in program oversight, it identified little in the way of material decisions or impacts resulting from these actions. Moreover, EXCOM's request for two of the five studies referred to in its response to our draft report, were not proactive measures taken to gain control of a deteriorating program; rather, they were steps taken in reaction to a crisis—learning that the first NPOESS launch would be delayed. EXCOM requested two independent reviews in August 2005, well after the NPOESS launch delay had been identified. A third example cited by NOAA provides a stark reminder of the optimism characterizing the IPO's assessments. Although the results of that independent review yielded schedule and cost estimates considerably higher than those offered by the IPO, there is no indication that EXCOM questioned whether the IPO's estimate should be used.

Finding 2: Contractor Received Excessive Award Fees for a Problem-Plagued Program

Award fees are intended to motivate a contractor to strive for excellence in such performance areas as quality, timeliness, technical ingenuity, and cost-effective management. The NPOESS program currently is in Nunn-McCurdy breach, more than $3 billion over budget and at least 17 months behind schedule—hardly a model of cost-effectiveness or timeliness. Yet the prime contractor received more than $123 million in award fees—*84 percent* of the available fee pool for the first six award periods. For the first five periods, the contractor averaged 90 percent of available fees. In light of the severe problems the NPOESS program is experiencing, the current award fee system is clearly not promoting excellent contractor performance.

To determine how and why the contractor was paid so great a portion of the fees when the program was so troubled, we examined the award fee plan and identified several flaws in its structure. The plan's evaluation criteria are not sufficiently focused on the critical, high-risk tasks. Also, the amount of fee the contractor can earn (up to 20 percent of the contract's total estimated costs) appears excessive in comparison with other government award fee contracts. Finally, we question the practices of (1) paying award fees for performance rated "unsatisfactory"and (2) allowing the contractor multiple opportunities to "rollover" unearned fee.

Although the award fee payments appear excessive, they were deemed appropriate by the fee determining official—the government official designated to set award and mission success fee amounts earned by the contractor. In the case of NPOESS, the fee determining official also serves as the program director, and, as such, is responsible for day-to-day management of the program. The intimate connection between the director's professional reputation and the success of both the program and the contractor could affect his objectivity as fee determining official in setting award amounts.

NOAA's Response to OIG Finding on Award Fees

NOAA stated that our report did not fully characterize the contract's award fee structure, but failed to note any relevant details not already included in our report. It also criticized the report for failing to recognize that the NPOESS contract was a DoD contract, although the report clearly states that the contract was awarded by the IPO using DoD's contracting authority. Finally, NOAA stated that our report did not consider the very recent March 29, 2006, DoD policy memo on the administration of award fees. We are pleased to acknowledge this new policy on award fee contracts, which resulted from a December 2005 General Accountability Office review of award and incentive fees at DoD. That policy addresses many of the issues we raised with regard to the NPOESS award fee structure, and if it is implemented in the NPOESS contract, should address our concerns about (1) the need for providing adequate incentives for high-risk, critical tasks, (2) rolling over unearned fees to subsequent periods, and (3) paying fees for unsatisfactory performance.

The new DoD policy does not address all of our concerns, however. Specifically, it is silent on the issue of whether interim fee should be paid when mission success milestones are missed and on whether the award fee pool for this contract is excessive. In addition, as our report noted, one of the reasons we raised all of the issues about the NPOESS award fee structure is so that NOAA could consider those issues when crafting award fee plans for future major acquisitions. It is particularly critical that NOAA considers the problems we found with the NPOESS fee management and structure to NOAA's attention particularly given the fact that NOAA is currently engaged in its first major solo satellite acquisition.

OIG Recommendations

We recommended that the Deputy Secretary ensure that the Under Secretary for Oceans and Atmosphere—in his role on EXCOM—works with the other EXCOM members to obtain and review regular, independent evaluations of the status of NPOESS. In particular, such evaluations should thoroughly assess progress toward completing high-risk or otherwise critical tasks and the associated impact of any problems encountered. NOAA, in its response to our report, agreed with the intent of our recommendation but suggests that is is already obtaining regular, independent reviews of the NPOESS program.

To ensure that there is no confusion on this point, it is important to highlight that the intent of this recommendation is for qualified individuals who are independent of the NPOESS program and not responsible for its management to conduct regular reviews of NPOESS (e.g., on a quarterly or semiannual basis, as well as at major milestones) to determine the program's status and risks relative to the new budget, schedule, and technical requirements baseline established during Nunn-McCurdy certification. Collectively, these individuals should have extensive space program experience; expertise in management, acquisition, systems engineering, and verification and testing of large space systems; the requisite technical, cost, and programmatic expertise; and an understanding of the current thinking on best practices for acquisition of large space systems. Results and recommendations should be reported both to EXCOM and the Deputy Secretary of Commerce.

Our second recommendation was that the Deputy Secretary should ensure that the Under Secretary for Oceans and Atmosphere—in his role as an EXCOM member of the NPOESS EXCOM—works with the other members of the EXCOM to critically review and revise the NPOESS award fee plan. Specifically, that review should take into consideration whether:

- interim fees should be paid when mission success milestones are being missed,
- the plan provides adequate incentives for tasks that are critical to the program's success and/or are high risk,
- fee amounts (i.e., up to 20 percent of the contract's total estimated costs) are excessive,
- the contractor should receive fees for unsatisfactory performance, and
- rolling over fees to subsequent award periods is appropriate.

As noted previously, the new DoD policy on award fee contracts, if implemented in the NPOESS contract, should address some, but not all, of the issues we raised.

Further, we recommended that the Deputy Secretary should ensure that NOAA assign responsibility for determining fee awards to an official who does not directly manage the NPOESS program. NOAA's response indicated that the EXCOM has already addressed this recommendation with the proposed establishment of a Principal Executive Officer (PEO) over the program. If this position is established and the PEO is not directly responsible for managing the NPOESS program, that action should meet the intent of our recommendation.

We purposely directed our recommendations to the Deputy Secretary to better ensure that the Department—for its part—provides NPOESS with the close and sustained management attention and oversight warranted by such a vital, complex, and troubled program.

Our report is available on our web site at http://www.oig.doc.gov/oig/reports/audit_inspection_and_evaluation_reports/index.html.