



Report In Brief

FEBRUARY 2, 2017

Background

NOAA's Geostationary Operational Environmental Satellites (GOES) provide the United States with meteorological data for weather observation, research, and forecasting. These satellites look for "atmospheric triggers" for severe weather conditions (e.g., tornadoes, flash floods, and hurricanes), monitor the development of storms, and track their movements.

The overall GOES-R program is managed by NOAA with two integrated NOAA/National Aeronautics and Space Administration (NASA) offices—the ground segment project and the flight segment project—and integrated supporting offices such as program systems engineering and program contracts. NOAA manages the acquisition and development efforts for the entire ground segment; software and hardware; and the remote unit for backup of mission-critical functions. NASA manages development and acquisition of the flight segment.

Why We Did This Review

Our objectives were to assess the adequacy of GOES-R development as the program completes system integration and test activities for the flight and ground segments in preparation for launch and data distribution, per NOAA and NASA standards. We also monitored the program's progress in developing and reporting on flight and ground segment contracting actions and changes to minimize cost increases.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Audit of the Geostationary Operational Environmental Satellite–R Series: Improvements in Testing, Contract Management, and Transparency Are Needed to Control Costs, Schedule, and Risks

OIG-17-013-A

WHAT WE FOUND

An unapproved test change damaged the satellite and exposed weaknesses in cost estimation that informed award fee determination. Prior to starting a 67-day continuous GOES-R thermal vacuum (TVAC) test, the contractor and project management personnel did not formally review and approve a change that altered the test equipment configuration. An unapproved test equipment configuration change caused an accident in the chamber that damaged the spacecraft and two of the instruments. Also, a delay in preparing spacecraft and instrument damage cost estimates that totaled more than \$1 million allowed award fees payment to the contractor of \$10.3 million, which we consider questioned costs, and made another \$3.9 million available to be earned on the final evaluation, which we consider funds put to better use. Lastly, we found that a lack of coordination in sharing evolving TVAC damage cost estimates restricted NASA's timely change of the mishap classification level.

Delay in definitizing core ground system re-plan resulted in increased costs and risk. The NOAA GOES-R contract office took nearly 2 years to negotiate a request for equitable adjustment proposal submitted in December 2013 by the contractor. As a result, the government had to pay the contractor \$9,586,935 for escalation and \$154,424 for proposal preparation costs, which we consider questioned costs. Moreover, prolonged delay resulted in NOAA and the contractor being unable to validate the core ground system's cost and schedule performance using earned value metrics during the undefinitized period.

Spacecraft project management reviews are not conducted in a transparent manner. GOES-R contractors conduct contractually-required regular project management reviews for both the flight and ground segments to inform the government on the project's technical and business status. However, OIG oversight was not permitted to observe the GOES-R spacecraft business meetings. Additionally, no meeting minutes or action items are produced.

The National Environmental Satellite, Data, and Information Service (NESDIS) does not consistently calculate or report geostationary satellite coverage gap probability. NESDIS does not employ a consistent, transparent process for assessing the availability of geostationary satellite imagery for the eastern and western United States, in order to measure its performance against NOAA policy.

WHAT WE RECOMMEND

We recommend that the NESDIS Assistant Administrator

1. Direct NASA to ensure the spacecraft contractor's thermal vacuum procedural documents include adequate steps to account for configuration modifications on future GOES-R series satellites.
2. Direct GOES-R Program to establish a reporting mechanism that tracks mishap or damage costs.
3. Direct NASA to modify the spacecraft contract's performance evaluation plan to specify that both direct and indirect costs are used in determining a major breach of safety for future evaluation periods.
4. Direct GOES-R Program to provide timely mishap cost data to NASA.

We recommend that the NOAA Deputy Under Secretary for Operations

5. Determine whether the spacecraft contractor was entitled to receive award fee payment for period 12.
6. Direct NOAA Acquisition and Grants Office (AGO) to develop a policy on timely disposition of request for equitable adjustment (REAs).
7. Direct AGO to provide more detailed status of REAs and unpriced change orders (UCOs) for programs presented at Program Management Council (PMC) meetings that have been unresolved for over 6 months.
8. Direct AGO to develop a mechanism to regularly communicate status of REAs and UCOs that have been unresolved for over 6 months to senior NOAA leadership for programs not presented at PMC meetings.

We recommend that the Under Secretary of Commerce for Oceans and Atmosphere and the NOAA Administrator

9. Direct the GOES-R program to ensure that the business meeting portion of the spacecraft project management reviews allow independent government oversight attendance.

We recommend that the NESDIS Assistant Administrator

10. Ensures that (a) the GOES-R program captures meeting minutes for project management reviews identifying all action items, decisions, and significant points of discussion and (b) all future NESDIS funded contract meeting and review deliverables require minutes.
11. Create a documented, periodic, and consistent geostationary imagery gap probability summary for comparison with policy.