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POLAR-ORBITING ENVIRONMENTAL SATELLITES

Agencies Must Act Quickly to Address Risks That Jeopardize the Continuity of Weather and Climate Data

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Highlights

Highlights of GAO-10-558, a report to congressional committees

Why GAO Did This Study

In the 8 years since a contract was awarded, the National Polar-orbiting Operational Environmental Satellite System (NPOESS)—a tri-agency program managed by the National Oceanic and Atmospheric Administration (NOAA), the Department of Defense (DOD), and the National Aeronautics and Space Administration (NASA)—has experienced escalating costs, schedule delays, and ineffective interagency management. The launch date for a demonstration satellite has been delayed by over 5 years and the cost estimate for the program has more than doubled—to about $15 billion. In February 2010, a Presidential task force decided to disband NPOESS and, instead, have the agencies undertake separate acquisitions.

GAO was asked to (1) assess efforts to establish separate satellite programs; (2) evaluate the status and risks of the NPOESS components still under development; and (3) evaluate the implications of using the demonstration satellite's data operationally. To do so, GAO analyzed program management and cost data, attended program reviews, and interviewed agency officials.

What GAO Recommends

GAO is making recommendations to NOAA and DOD to address key risks in transitioning to their respective new programs. Both agencies agreed with GAO's recommendations and identified plans for addressing them.

View GAO-10-558 or key components.
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What GAO Found

NOAA and DOD have begun planning to transition the NPOESS program to separate acquisitions, but neither has finalized its plans. NOAA has developed preliminary plans for its new program—called the Joint Polar Satellite Program—to meet the requirements of the afternoon NPOESS orbit. DOD expects to make decisions on the spacecraft and sensors by June and October 2010, respectively. Because neither agency has completed its plans, the impact of the decision to disband the program on expected costs, schedules, and promised capabilities has not been fully determined. Moving forward, the agencies face key risks in transitioning from NPOESS to their separate programs. These risks include the loss of key staff and capabilities, delays in negotiating contract changes and establishing new program offices, the loss of support for the other agency's requirements, and insufficient oversight of new program management. Until these risks are effectively mitigated, it is likely that the satellite programs' costs will continue to grow and launch dates will continue to be delayed, which could lead to gaps in the continuity of critical satellite data.

While NOAA and DOD are establishing plans for their separate acquisitions, the development of key components of the NPOESS program is continuing. In recent months, a critical imaging sensor has been completed and integrated onto the spacecraft of a demonstration satellite, called the NPOESS Preparatory Project (NPP). In addition, the program continues to work on components of the first and second NPOESS satellites, which are to be transferred to NOAA and DOD to become part of their respective follow-on programs. However, the expected launch date of the NPP satellite has been delayed by 9 months due to technical issues in the development of a key sensor. Further, the program is slowing down and may need to stop work on key components because of potential contract liabilities and funding constraints, but has not developed a prioritized list on what to stop first. This may further delay NPP and the components of the first NOAA and DOD satellites under their new programs.

Because the NPP demonstration satellite was designed as a risk-reduction mission, not as an operational asset, it has several limitations. These limitations include fewer ground-based data processing systems, fewer security controls, and a shorter satellite lifespan than exist for current or planned operational satellites. These design limitations mean that, in some cases, NPP's data will not be as timely, useful, and secure as other polar satellites and that there is a risk of a gap in the nation's climate and weather services should NPP fail before the next satellite is launched. Agency officials acknowledge these limitations and are assessing options to make NPP data more timely and secure.