WRITTEN STATEMENT OF
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JOINT OVERSIGHT HEARING ON
THE GOVERNMENT ACCOUNTABILITY OFFICE REPORT
"POLAR-ORBITING OPERATIONAL ENVIRONMENTAL SATELLITES
RESTRUCTING IS UNDER WAY, BUT TECHNICAL CHALLENGES
AND RISKS REMAIN"

BEFORE THE
COMMITTEE ON SCIENCE AND TECHNOLOGY
SUBCOMMITTEE ON ENERGY AND ENVIRONMENT
AND THE SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT
U.S. HOUSE OF REPRESENTATIVES

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Introduction

Chairmen Lampson and Miller, Ranking Members Inglis and Sensenbrenner, and Members of the Committee, I appreciate the opportunity to provide an update of our progress on the National Polar-orbiting Operational Environmental Satellite System (NPOESS) and to comment on the recommendations of the recent Government Accountability Office (GAO) report.

I am Brigadier General Susan K. Mashiko, Program Executive Officer for Environmental Satellites. I report to the Executive Committee of the NPOESS Program which is comprised of the Administrator of the National Aeronautics and Space Administration (NASA), the Under Secretary of Commerce for Oceans and Atmosphere, and the Under Secretary of the Air Force. I oversee the day-to-day operations of the NPOESS Program and interface with other government agencies and departments and international partners. I am here today to give you an update on the program status and to address the recent GAO report.

Program Background

First let me review what NPOESS is for the new Committee Members. In 1994, after a thorough review and serious consideration, President Clinton directed the merger of the military and civilian operational polar satellite programs. This new program, NPOESS, is responsible for developing the next generation of polar satellites and sensors. The program was designed as a series of six satellites and a total of 10 environmental sensors, five of which represent significant advances over current operational satellite technology. The new NPOESS sensors will provide higher quality data than the current operational meteorological satellites leading to more sophisticated environmental models for weather, climate and the oceans.

The NPOESS Preparatory Project (NPP) is a joint mission involving the National Aeronautics and Space Administration (NASA) and the NPOESS Integrated Program Office (IPO). The NPP mission will collect and distribute remotely-sensed land, ocean, and atmospheric data to the meteorological and global climate change communities as the responsibility for these measurements transitions from NASA's existing Earth-observing missions (e.g., Aqua, Terra and Aura) to the NPOESS. NPP also provides risk reduction by testing several new sensors in space, ensure the ground control systems work properly, and allow us time to assimilate the new data into computer weather models before launch of the first operational NPOESS satellite. NPP will provide atmospheric and sea surface temperatures, humidity sounding, land and ocean biological productivity, and cloud and aerosol properties.

NPOESS is being acquired using DOD acquisition authorities and is managed by an Integrated Program Office (IPO). In 2002, Northrop Grumman was selected as the NPOESS prime contractor for spacecraft development, ground systems, sensor integration, and operations.

As many on this Committee are aware, in December 2005, the IPO notified the Air Force that projected cost overruns would exceed the 25 percent threshold triggering a breach of the Nunn McCurdy statute. In June 2006, following the Nunn McCurdy certification and resulting restructure of the NPOESS program we are moving forward with two fewer satellites, fewer sensors, less risk, cost increases, but also with increases in our confidence levels for timely delivery of core weather forecasting capabilities, accompanied by a significant reduction in its climate monitoring capabilities.

The GAO report properly notes that the NPOESS program has made progress since the June 2006 Nunn McCurdy certification and we completely agree that technical challenges and risk still remain. The three agencies involved in the NPOESS development, the Department of Commerce (DOC), the Department of Defense (DOD), and NASA continue to regularly monitor the development of the NPOESS program. They commit their best talent and participate in the decision-making process through the NPOESS Executive Committee (EXCOM). The significant management changes and the reduced risk profile resulting from the Nunn McCurdy certification and subsequent restructure have had major positive impacts on the program. NPOESS still remains, however, the most complex environmental satellite system ever developed.

Over the last eighteen months, the program has taken a disciplined acquisition approach to the simultaneous execution of the development program and program restructure. Through the creation of discrete, measurable, development milestones the NPOESS IPO has fundamentally revamped their management style to one of aggressive oversight of the contractor. This 'back-to-basics" approach facilitated the reorganization of both government and industry management teams while permitting risk reduction to move apace. Most metrics for cost and schedule goals have been achieved for this period. As in all developmental programs, NPOESS has uncovered and addressed new challenges.

Program Status

The Cross-track Infrared Sounder (CrIS) is intended to provide improved measurements of the temperature and moisture profiles in the atmosphere allowing forecasters to improve both global

and regional predictions of weather patterns, storm tracks, and precipitation. In October, 2006, CrIS experienced a challenge when a structural component broke in the final moments of its vibration test. The failure was fully analyzed by a Tri-Agency and industry team and corrective actions are underway. This instrument has sufficient schedule margin to ensure that the projected 2009 launch of the NPOESS Preparatory Project (NPP) and the first NPOESS satellite in 2013 will not, at this time, be affected.

The Visible/Infrared Imager/Radiometer Suite (VIIRS) collects high resolution atmospheric imagery and generates a variety of applied products, including visible and infrared imaging of hurricanes and detection of wildland fires, smoke, and atmospheric aerosols. The VIIRS instrument, which was one of the principal contributors to the Nunn McCurdy breach, has completed extensive reviews by both a government team from the NPOESS program and an independent team of outside experts. Corrective actions for all identified VIIRS instrument problems are underway. One major technical issue, optical cross talk, remains and we are pursing several potential solutions. The VIIRS product most at risk at this point is ocean color, but there are also concerns about the atmospheric aerosol products should the cross talk problem not be resolved. This key instrument will continue to be the focus of intense management attention for the foreseeable future.

The NPOESS IPO has issued a request for information for a Microwave Imager/Sounder (MIS), a smaller, less complex sensor than the original Conical-scanning Microwave Imager/Sounder (CMIS). The MIS is still intended to provide data for a variety of products including sea surface winds. The MIS is scheduled to first fly on the second NPOESS spacecraft and then on all subsequent missions. A final acquisition strategy decision is anticipated by September 2007, at which time cost and schedule information will be available.

A number of sensors were demanifested from NPOESS as a result of the Nunn-McCurdy process, especially those oriented towards climate measurements. At the initiative of the Office of Science and Technology Policy (OSTP), NASA and NOAA are working together to identify what might be required to provide flight opportunities for the de-manifested sensors – either on NPOESS platforms or some other method – to assure continuity of key climate parameters such as earth radiation budget, solar irradiance, sea surface topography, ozone vertical profile, and aerosol optical properties. OSTP will work with the agencies and the Office of Management and Budget to determine if the required resources can be identified in the time frame required to protect the climate data records.

The ground and data processing system continues to make excellent progress. The NOAA Satellite Operations Facility is up and running and flying the heritage NOAA and DOD satellites. The command and control software has been fully tested. Early versions of the operational data processing system are being tested with real data delivered from satellites currently on orbit.

The program restructure proposal, which culminates 10 months of intensive government and industry effort, details all aspects of the NPOESS program and has been received from Northrop Grumman Space Technology. This proposal provides detailed planning, scheduling and resource allocation for the next ten years. The proposal is presently in the negotiation process and is on track for a late summer 2007 award. Concurrently, the government is conducting an Integrated

Baseline Review (IBR), which will provide the government with additional confidence in the Northrop Grumman scheduling and resource allocation process.

The Ozone Mapping and Profiler Suite (OMPS) Limb instrument will measure the vertical distribution of stratospheric ozone with high resolution; and it will complement observations from existing NPOESS sensors most notably the column and low resolution profile measurements from the OMPS Nadir instrument. In response to the climate science community, NOAA and NASA recently announced that the OMPS Limb will be remanifested with the OMPS Nadir onto the NPP in time to meet the scheduled 2009 launch date. NOAA and NASA have agreed to equally share the cost of restoring the OMPS Limb onto the NPP spacecraft. The OMPS Limb will measure the vertical distribution of ozone and it will complement observations from existing NPOESS sensors.

Government Accountability Office (GAO) Recommendations

I would like to commend the GAO staff for their collaborative approach to the NPOESS audits. I appreciate their commitment to providing recommendations and findings that will assist the NPOESS partners. While official comments have been provided to GAO, I'd like to take the opportunity to provide a synopsis of our responses and the status of addressing the recommendations.

The GAO report emphasizes the need to expeditiously complete the documentation directed by the Acquisition Decision Memorandum for the NPOESS program. The staffs of the three parent agencies have been fully consulted during the development of these documents. These Tri-Agency documents will be fully executed by late summer. In the interim, administration of the NPOESS program and the contract is not being adversely affected.

The GAO report also recommends that the Secretary of Defense delay the reassignment of the NPOESS PEO. While I can not speak for the DOD, I can state that the NPOESS PEO position has long been planned to rotate between the Air Force and NOAA. As part of this planned rotation, the next NPOESS PEO will be a NOAA employee. A selection is planned prior to my departure in summer 2007 and is being timed to provide a transition period that will facilitate knowledge transfer and ensure continuity.

The GAO report recommends that NOAA address the human capital needs for the NPOESS program and that it immediately fill needed positions. NOAA has implemented an accelerated hiring model and corresponding schedule to fill all NOAA positions identified in the GAO report and all positions needed by the NPOESS program. All three agencies are working in concert and we have identified the positions to be filled, the hiring strategy, and other program human capital needs. Regular progress reporting on the status of filling these positions occurs, and the NPOESS System Program Director reports at monthly meetings with the PEO. NOAA has established a complementary, documented strategy with milestones to ensure that all needed positions are filled. We are working very closely with the NOAA Workforce Management Office to ensure obstacles to the hiring process are identified and addressed immediately. The five additional NASA positions were identified as needed following the Nunn-McCurdy certification have since been filled.

The NPOESS Tri-Agency partners are working very hard to ensure the actions required to address these recommendations are implemented in a timely manner to improve our ability to successfully manage the program.

Summary

In summary, the management changes that were established over the last year have taken hold and are working at both the government and contractor program management offices. The test program is identifying problems and that is just what it is designed to do. We have added one of the demanifested instruments onto the NPP; this type of add-back, if continued onto the NPOESS platforms as envisioned by the Nunn McCurdy analysis. The NPOESS program will continue instrument development to meet the 2009 NPP launch and the 2013 launch of the first NPOESS satellite.

Thank you for the opportunity to speak with you today and I am prepared to answer your questions.