

**NOAA Satellite and Information Service:  
Geostationary Satellite Launch and Spare Call-Up Policy**

**I. Purpose and Scope**

To establish objective criteria for determining contingency launch dates and/or on-orbit spare activation for NOAA's geostationary operational environmental satellites.

This Order applies to NOAA's Geostationary Operational Environmental Satellites (GOES) on orbit and in development. This order does not apply to special purpose satellites or to secondary GOES payloads.

The implementation of this Order shall be the responsibility of the National Environmental Satellite, Data, and Information Service (NESDIS) in consultation with other NOAA Line Offices and the NOAA Administrator.

**II. Policy**

The GOES constellation consists of two operational satellites and one spare on orbit. This constellation provides the critical observations as well as the necessary back-up to ensure that sufficient data is readily available to provide accurate warnings and predictions to meet Agency and National requirements.

The GOES system is required to provide geosynchronous-viewed cloud and moisture imagery of an area bounded by latitude 68° North to 68° South and longitude 150° East to 2° West. This requires two operational satellites.

It is NOAA policy that the civil geostationary environmental satellite program achieve a threshold of 80 percent probability of maintaining mission availability for two operational satellite system to cover the area specified above. In the event of a failure of a satellite requiring replacement, the GOES System Maximum Time to Restore Service (MaxTTRS) shall not exceed three weeks. This MaxTTRS requirement necessitates an on-orbit spare satellite.

For the GOES-N series satellites, infrared sounders and imagers are classified as the critical sensors. For the GOES-R series satellites, the critical sensor will be the Advanced Baseline Imager (ABI), which provides advanced imagery capable of generating enhanced products that previously required both sounder and imager data.

Failure of the imaging mission is determined by the degree to which operational products are affected as a result of the degradation/failure. Call-up of a GOES spare shall be considered whenever the flow of quality scientific and related instrument engineering data from designated mission critical instruments is interrupted or significantly degraded or the spacecraft cannot support the capture, handling, or transmission of that data.

Complete failure of the imager (on the GOES-N series) or ABI (on the GOES-R series) would necessitate the call-up of the spare spacecraft. Failure of secondary instruments or systems will not normally result in a satellite replacement decision.

### **III. Spare Call-up Process**

The GOES spare will be centrally located between the East and West operational positions at an orbital longitude of 105 degrees West. Once called-up, an orbital re-location to the desired operational longitude must be performed. Relocation of a GOES spare satellite from the storage to operational longitude can be performed at a maximum rate of 3 degrees per day. Imaging operations may be restricted during the relocation maneuver. Plans and procedures for on-orbit spare call-up, and operational transition will be maintained and adapted to the specific mission needs.

The Office of Satellite and Product Operations (OSPO) Director leads the effort to determine the need to make a formal call-up of a GOES on-orbit spare. The normal process is as follows:

1. OSPO Director briefs the NESDIS Assistant Administrator (AA) and Deputy Assistant Administrators (DAAs) and recommends the spare call-up.
2. NESDIS AA briefs the National Weather Service (NWS) AA to help determine the operational impacts of call-up proposal.
3. NESDIS AA briefs the NOAA Administrator, the NOAA Deputy Administrator for Environmental Observation & Prediction, the Deputy Under Secretary for Operations, and other NOAA Line Office AAs and Strategic Goal Leads, as necessary, of the decision to call-up the spare.
4. The GOES-R System Program Director (SPD) identifies possible alternatives to accelerate launch readiness dates (LRDs), if necessary to replace the spare satellite, and any resultant impacts to acquisition costs and schedules.
5. Upon approval from the NESDIS AA, OSPO Director executes the spare call-up procedure and initiates the on-orbit re-location to the desired operational position within 48 hours.

### **IV. Launch Call Up Process**

Responsibilities:

- NESDIS OSPO Director: Assesses existing on-orbit assets, existing system failures and degradations, the ability of the on-orbit assets to meet user needs, and the current projections regarding anticipated useful lifetime. Recommends to the NESDIS AA call-up, if warranted.

- NESDIS GOES-R SPD: Provides launch readiness and availability dates of the next available GOES satellite(s), and identifies any programmatic alternatives with their cost and schedule impacts.

Factors to be assessed:

- By the Office of Satellite Products and Operations:
  1. The operational condition of all on-orbit GOES spacecraft. In particular, the extent to which other spacecraft have functioning instrument(s), available to provide data continuity or if critical systems / instruments on other GOES spacecraft are displaying indications of early failure.
  2. In coordination with key users, assess product impact of loss of primary satellite capabilities, and their ability to compensate with other data sources (e.g., ancillary and/or other space-based platforms).
  3. Ability of the ground system to support post-launch test and data processing.
- By the GOES-R Program:
  1. Availability of the next GOES satellite, launch vehicles and spacecraft/launch vehicle integration facilities.
  2. Possible conflicts in access to launch pads and launch support facilities.
- NESDIS AA briefs NWS AA to obtain concurrence with the launch call-up decision, and notifies other NOAA AAs.
- NESDIS AA and NWS AA brief the NOAA Deputy Under Secretary (Operations), the NOAA Deputy Administrator for Environmental Observation & Prediction, and the NOAA Administrator on the launch call up decision.
- NOAA directs NASA to launch the next GOES spacecraft within the designated time frame. Appropriate NOAA Headquarters corporate office directors notify the Department of Commerce, the Office of Management and Budget, Congressional committee staff, and the media.

**Approved By:**

Mary E. Kicza  
Mary E. Kicza  
NOAA Assistant Administrator  
for Satellite and Information Services

11/16/11  
Date