

NATIONAL WEATHER SERVICE INSTRUCTION 10-1103

DECEMBER 27, 2024

Operations and Services

Space Weather Services, NWSPD 10-11

NOTIFICATION PROCEDURE DURING A SIGNIFICANT SPACE WEATHER EVENT

NOTICE: This publication is available at: <https://www.weather.gov/directives/>.

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Type of Issuance: Initial

SUMMARY OF REVISIONS: This is the initial issuance of NWS Instruction 10-1103, *Notification Procedure Regarding a Significant Space Weather Event*. The purpose of this directive is to describe the roles and responsibilities of the National Weather Service (NWS) internal and external notification procedure regarding an extreme space weather event.

December 13, 2024

Allison Allen

Date

Director

Analyze, Forecast, and Support Office

Notification Procedure Regarding a Significant Space Weather Event

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1. General

This instruction specifies the operational framework at the National Oceanic and Atmospheric Administration’s (NOAA’s) National Weather Service (NWS) Space Weather Prediction Center (SWPC), the Nation’s official source for actionable space weather information for civil applications, for responding to significant space weather events. Space weather events, such as solar flares and geomagnetic storms, disrupt satellite operations, pose risks to power grids, interfere with communication systems, expose astronauts and the flying public to radiation, disrupt GPS navigation, and impact a wide range of other vital infrastructures. SWPC’s operational global delivery of actionable space weather information enables critical infrastructure operators and decision-makers to take proactive measures to protect health, mitigate potential damage, reduce infrastructure downtime, and ensure the continuity of essential services. Through its critical mission and collaborative partnerships, SWPC strengthens America's preparedness, resilience, and global leadership.

This instruction covers NWS-internal decision processes intended to ensure prompt, factual notification of a space weather event that poses a significant threat to critical infrastructure, modern technological systems, and humans working in space, and to establish responsibilities for notification external to NWS.

2. Policy

Executive Order 13744 establishes that the Department of Commerce *provide timely and accurate operational space weather forecasts, watches, warnings, alerts, and real-time space weather monitoring for the government, civilian, and commercial sectors, exclusive of the responsibilities of the Secretary of Defense.* Further, the Promoting Research and Observations of Space Weather to Improve the Forecasting of Tomorrow (PROSWIFT) Act, 51 USC 60601, Public Law 116-181 establishes that the *National Oceanic and Atmospheric Administration provides operational space weather monitoring, forecasting, and long-term data archiving and access for civil applications, maintains ground-based and space-based assets to provide observations needed for space weather forecasting, prediction, and warnings, provides research to support operational responsibilities, and develops requirements for space weather forecasting technologies and science.*

3. Responsibility

The NOAA/NWS SWPC is the organization responsible for providing actionable information for space weather that poses a significant threat to critical infrastructure, modern technological systems, and humans working in space. SWPC will be the single voice of the U.S. Government and will coordinate the dissemination of space weather information with its government, civilian, and commercial partners, and with other entities, pursuant to established agreements, and exclusive of the responsibilities of the Department of Defense.

While many of SWPC's partners and stakeholders receive automated email alerts of significant space weather activity via the Product Subscription Service and/or the iNWS, additional notifications, as outlined below, are provided to ensure adequate redundancy.

3.1 SWPC

- a. Issues the appropriate space weather products as described in [National Weather Service Instruction 10-1101, Space Weather Products](#).
- b. When the following conditions, based on the [NOAA Space Weather Scales](#), are predicted or observed, on-duty forecasters notify the SWPC Operations Division Chief.
 - G4 or Greater Geomagnetic Storm
 - S4 or Greater Solar Radiation Storm
 - R4 or Greater Radio Blackout

The Operations Division Chief assesses whether conditions warrant a Significant Activity Response (SAR) per the SWPC Significant Activity Response Plan (SARP). At any time, the Operations Division Chief assesses the need, a SAR may be issued for any events that have the potential to attract national attention, require a government response, and/or are significant in impact or magnitude.

- c. Upon SAR initiation, the SWPC Operations Division Chief ensures proper and timely Government notification. An on-duty forecaster or individual directed by the SWPC Operations Division Chief contacts the following:
 - i. NWS Operations Center (NWSOC). The NWSOC issue breaking news email alerts (Level 4 and 5 storms only) to all NWS and NOAA Leadership, including the Office of Congressional Affairs, Regional Operations Centers (ROCs), and NWS liaison to the Federal Emergency Management Agency (FEMA).
 - ii. NOAA National Operations Center (NOC). The NOC notifies the three entities below, but if the NOC is unavailable, these notifications are completed by the NWSOC:
 1. Department of Commerce Office of Security (OSY)
 2. Department of Commerce Information Operations Center (CIOCI)
 3. Department of Homeland Security National Operations Center (DHS NOC)

- iii. Department of Defense, United States Air Force, 557th Weather Wing, 2d Weather Squadron, Space Weather Operations Center.
 - iv. Department of Homeland Security, other Federal organizations, and multi-agency coordinating systems to support the [National Response Framework](#).
 - v. FEMA Operations Center (FOC).
 - o FOC notifies the National Watch Center (NWC), the Denver Mobile Emergency Response Support Operations Center (Denver MERS/MOC), and Thomasville MOC
 - o Denver MOC will notify all other MOCs via the Emergency Notification System (ENS)
 - o In addition, the FEMA FOC, Denver MOC, and/or Thomasville MOC, distributes the information, as needed, to the following:
 - 1. FEMA Senior Leadership via intra-agency voice conferencing system
 - 2. Denver MERS personnel via the Emergency Notification System (ENS)
 - 3. ***(For S5/G5 Alerts and only upon direction from Senior Leadership):***
 - a) State & Local Warning Points via the National Warning System (NAWAS)
 - b) National Capital Region Warning Points via the Washington Metropolitan Area Warning System (WAWAS)
 - vi. Department of State, Operations Center, Crisis Management and Strategy. Information is shared with U.S. diplomatic and consular posts abroad, as deemed necessary.
 - vii. Owners and operators of critical infrastructure and other end-users, as deemed necessary.
 - viii. General public. Assist with notifying and communicating with the public about the nature of the expected or existing space weather event, including key messages and uncertainties.
- 3.2** The SWPC Director (or designee), upon activation of the SAR, contacts the following offices, as needed:
- i. NWS Senior Leadership;
 - ii. Executive Office of the President (EOP) including the White House Situation Room, the National Security Council (NSC) Resilience and Response Directorate, and the Office of Science and Technology Policy (OSTP).
- 3.3** NWS senior leadership will upon notification, and as needed:
- i. Communicate with DOC and NOAA Senior Leadership;

- ii. Identify primary points of contact for the Executive Office of the President and Senior Leaders of Departments and Agencies.
- 3.4** The SWPC Senior Staff Members (Director, Deputy Director, Program Coordinator, Operations Chief, Service Coordinator) will upon activation of the SAR:
- i. Communicate, as needed, with the leadership of the 557th Weather Wing;
 - ii. Communicate, as needed, with Emergency Operations Centers (EOCs) and/or watch centers from other Federal agencies including the Department of State;
 - iii. Communicate, as needed, with leadership at international space weather operations centers;
 - iv. Work with NOAA Communications/NWS Public Affairs on media engagements.
- 3.5** The NWS Office of Congressional Affairs Director facilitates the release of notifications to the U.S. Congress.
- 3.6** The NWS Public Affairs Director (or designee):
- a. Provides staff support to SWPC, as available or needed, in the release of information about the space weather event to the public.
 - b. Facilitates and tracks interactions with the media, including press conferences, as needed.
 - c. Issues media advisories, press releases, and other public announcements about the space weather hazard or impact threat that are approved by SWPC.
 - d. Monitors media coverage for positive and negative news clips, inaccuracies, and opportunities. Facilitates getting article corrections and clarifications when necessary. Provides reports to NOAA, NWS, and SWPC leadership on the nature of the news coverage when necessary.