KENNEDY SPACE CENTER

KENNEDY DOCUMENTED PROCEDURE
KDP-KSC-P-3005

HAZARDOUS WEATHER

[redacted]

Director, John F. Kennedy Space Center

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Change Log

DATE	Description	REVISION
11/27/2023	• **Document title change from Adverse Weather to Hazardous Weather** • **Addition of Appendix B. TAWS Activation** • **3.1 Clarification about distance of lightning area** • **3.4 Changed to Strong Wind Warning** • **3.5 Inserted Damaging Wind Warning** • **3.6 Changed to Fair Weather Warning** • **Section 4 title changed to Hazardous Weather Safety Rules** • **Section 5 title change to Hazardous Weather Responsibilities and Actions** • **Section 5 changed reference of Institutional Services Contract (ISC) Duty Office (DO) to Spaceport Integration Center (SIC), reference of Kennedy Protective Services Contractor (KPSC) was changed to Protective Services Communications Center (PSCC)**	**B-1**

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1. PURPOSE

To ensure implementation of Kennedy NASA Procedural Requirements 8715.2, Comprehensive Emergency Management Plan, this Kennedy Documented Procedures (KDP) provides employees information for preparation of severe weather conditions at Kennedy Space Center (KSC), excluding hurricanes. Procedures for hurricanes are documented in KDP-KSC-P-3006, Tropical Storm and Hurricane Operations.

2. APPLICABILITY

This KDP applies to all KSC civil service, tenant, and KSC contractor organizations operating within the boundaries of KSC. This KDP is applicable to the safety and general securing associated with hazardous weather, including tornadoes, severe thunderstorms, high winds, and lightning.

3. HAZARDOUS WEATHER DEFINITIONS

3.1 Phase I Lightning Watch.

Lightning is expected to occur within 30 minutes within 4 nautical miles from the specified Lightning Hazard Notification Area (LHNA).

3.2 Phase II Lightning Warning.

Lightning is imminent or occurring within 4 nautical miles of any specified LHNA.

3.3 Severe Thunderstorm Watch.

The potential exists for damaging winds 50 knots or greater and hail ¾-inch diameter or larger.

3.4 Strong Wind Warning

Imminent occurrence of strong winds 35 knots or greater.

3.5 Damaging Wind Warning.

Imminent occurrence of winds 50 knots or greater.

3.6 Waterspout/Funnel Cloud Advisory.

A waterspout or funnel cloud was observed near KSC/CCSFS. Minimal threat to personnel or facilities is anticipated at this time.

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3.7 Tornado Watch.

The potential exists for tornadoes.

3.8 Tornado Warning.

Tornado is imminent or occurring (indicated on radar or observed by personnel).

3.9 Hail Warning.

The potential exists for hail (any size) for KSC.

4. HAZARDOUS WEATHER SAFETY RULES

4.1 Phase I lightning watches are intended to provide personnel in outside areas and personnel conducting hazardous operations sufficient lead time to secure operations before a Phase II lightning warning is announced. When a Phase II warning is announced, the following lightning safety rules apply. Employees should do the following:

4.1.1 Seek shelter in a fully enclosed building with wiring or plumbing or in a vehicle with a metal roof and metal sides.

4.1.2 Stay indoors and do not venture outside unless absolutely necessary.

4.1.3 Stay away from open doors and windows, metal pipes, and sinks.

4.1.4 Avoid any conducting path to the outside such as plugged-in electrical devices.

4.1.5 Stop working on metal fences, telephone or power lines, or structures of any kind.

4.1.6 Stop handling combustible or flammable liquids.

4.1.7 Stop performing work that is utilizing outside open vehicles, such as heavy equipment, tractors, and mowers.

4.1.8 If inside an automobile with a solid metal roof and solid metal sides, stay inside. These vehicles offer protection from lightning.

4.1.9 No place outside is safe when thunderstorms are in the area. If you are caught outdoors and a proper building or vehicle is not available, minimize your risk by getting to a safe location as quickly as possible. Avoid being on or near tall objects, avoid touching long

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conducting objects, e.g., metal fences, avoid large bodies of water, stay away from trees, and crouch close to the ground with your feet together and ears covered.

4.2 Tornado Safety Rules. When a tornado watch is issued, employees should conduct normal duty operations and listen for possible updates and the announcement of a tornado warning. Review your tornado safety guidance, especially where to go if a tornado warning is announced. If a tornado warning is announced, the following tornado safety rules apply. Employees should do the following:

4.2.1 Seek shelter on the lower floors of a steel-frame or reinforced concrete building away from windows.

4.2.2 If outside and unable to reach a steel-frame or reinforced concrete building, either get down in your vehicle and cover your head, or abandon your vehicle and seek shelter in a low lying area.

4.2.3 If outdoors or inside a minimum shelter such as a shed, be alert to the possibility of flying debris.

4.2.4 If inside a building, stay away from windows and, if possible, move into a corridor and close doors to hallway. Evacuate from all atriums.

4.2.5 Report any injuries, downed power lines, or gas leaks to 911 (cell 321-867-7911).

4.2.6 If in a trailer or vehicle, evacuate to a nearby office building, if time allows.

4.2.7 If in a modular building, move away from doors and windows, proceed to interior parts of the structure, and take cover if possible (get under a desk or table).

4.2.8 If on upper floors, go to the lower floors.

4.2.9 Wait for the “All Clear” announcement over the Paging and Area Warning System (PAWS).

4.3 Thunderstorm Safety Rules. A severe thunderstorm watch indicates that the potential exists for damaging winds 50 knots or greater and hail ¾-inch diameter or larger. Concurrent with thunderstorms, strong wind warnings, damaging wind warnings, and hail warnings may be issued. Review your organization’s internal policies for specific actions to be taken during such warnings. Lightning watches and warnings, as well as tornado watches and warnings, as discussed in sections 4.1 and 4.2 above, also may be issued. During any thunderstorm, the following rules apply. Employees should do the following:

4.3.1 Postpone all outdoor activity, if at all possible.

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4.3.2 Pass information on the weather warning(s) to other personnel who may not be in a position to have heard the original announcement.

4.3.3 Take shelter in a sturdy building or a hardtop automobile. Do not take shelter in trailers or modular or temporary facilities.

4.3.4 Dock boats and stay away from water.

4.3.5 Avoid using landline phones and other devices connected to electricity during a lightning warning.

4.3.6 Get to higher ground if flooding is imminent.

4.3.7 If a potential tornado is spotted, report it to 911 (cell 321-867-7911).

4.3.8 Wait for warning terminations to be announced over the PAWS.

5. HAZARDOUS WEATHER RESPONSIBILITIES AND ACTIONS

Actions and associated responsibilities during hazardous weather are delineated below.

5.1 45th Weather Squadron (45 WS).

5.1.1 45 WS shall inform the Spaceport Integration Center (SIC) of weather watches, warnings, and advisories (WWAs).

5.1.2 45 WS shall issue an "All Clear" to SIC when a weather threat has ended or WWA is no longer needed.

5.1.3 When a funnel cloud, tornado, or waterspout sighting is reported to 45 WS, 45 WS shall make the determination of a threat. If 45 WS determines a threat exists for a tornado, 45 WS shall issue a tornado warning and immediately inform SIC. If 45 WS determines there is not a tornado threat, the 45 WS may issue a waterspout advisory.

5.2 Spaceport Integration Center (SIC).

5.2.1 SIC, through a variety of different means (e.g., e-mail, radio transmissions, and PAWS), shall notify the KSC workforce of hazardous weather WWAs, and the "All Clear" notification once it is received from the 45 WS.

5.2.2 When informed by 45 WS of a tornado warning or an extension of a tornado warning for KSC, SIC shall immediately inform the Protective Services Communications Center

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(PSCC), so that PSCC can activate the Tornado Area Warning System (TAWS) siren. SIC shall also inform PSCC upon cancellation of a tornado warning.

5.2.3 If SIC receives a report of a funnel cloud, tornado, or waterspout sighting by any KSC personnel (via radio/OIS or telephone) *while* a tornado watch, severe thunderstorm watch, or Phase II lightning warning is in effect for any part of KSC, the SIC shall immediately call PSCC to advise activation of the TAWS siren, and then call 45 WS. SIC shall then advise PSCC to reactivate the TAWS whenever 45 WS issues or extends a tornado warning for KSC.

5.2.4 When an employee reports to SIC a sighting of any hazardous weather other than described in 5.2.3, prior to the issuance of a relevant watch, warning, or advisory, SIC shall notify 45 WS.

5.3 Protective Services Communications Center (PSCC).

5.3.1 Whenever informed by SIC that 45 WS has issued or extended a tornado warning for KSC, PSCC shall immediately activate or reactivate the TAWS siren (if it is not already sounding). [The activated TAWS siren sounds for three minutes.] See Appendix B, *TAWS Activation* flowchart.

5.3.2 If a funnel cloud, tornado, or waterspout sighting is reported via 911 or PSCC non-emergency number, *while* a tornado watch, severe thunderstorm watch, or Phase II lightning warning is in effect for any part of KSC, PSCC shall immediately activate the TAWS siren, and then call 45 WS, report the sighting, and ask if a tornado warning is being issued. If 45 WS advises that a tornado warning for KSC is being issued and the initial three-minute TAWS sounding has expired, PSCC shall reactivate the siren.

5.3.3 PSCC shall *not* activate the TAWS siren immediately upon a reported sighting of a tornado or funnel cloud or waterspout, if *no* tornado watch, severe thunderstorm watch, or Phase II lightning warning is in effect for any portion of KSC. PSCC shall report the sighting to 45 WS and ask if a tornado warning is being issued for KSC. If 45 WS advises that a tornado warning for KSC is being issued, PSCC shall activate the TAWS siren.

5.3.4 The PSCC shall test the TAWS siren monthly, generally on the last Friday of the month, and shall advise SIC prior to each test.

5.4 NASA Emergency Management Officer (NEMO).

5.4.1 NEMO may activate the Emergency Operations Center (EOC) if a hazardous weather event causes damages to property or injury to personnel that requires multiple emergency responders to take action.

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5.4.2 NEMO may request activation of the Damage Assessment and Recovery Team, as required (reference: KDP-KSC-P-3007, Damage Assessment and Recovery).

5.5 All KSC employees shall do the following:

5.5.1 Direct and initiate protection of personnel, resources, and facilities within their area of operations.

5.5.2 Upon termination of hazardous weather conditions, report any damages or residual hazards.

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Appendix A

Acronyms and Abbreviations

45 WS	45th Weather Squadron
EOC	Emergency Operations Center
KDP	Kennedy Documented Procedures
KPSC	Kennedy Protective Services Contractor
KSC	Kennedy Space Center
LHNA	Lightning Hazard Notification Area
NEMO	NASA Emergency Management Officer
PAWS	Paging and Area Warning System
PSCC	Protective Services Communications Center
SIC	Spaceport Integration Center
TAWS	Tornado Area Warning System
WWAs	Watches Warnings and Advisories

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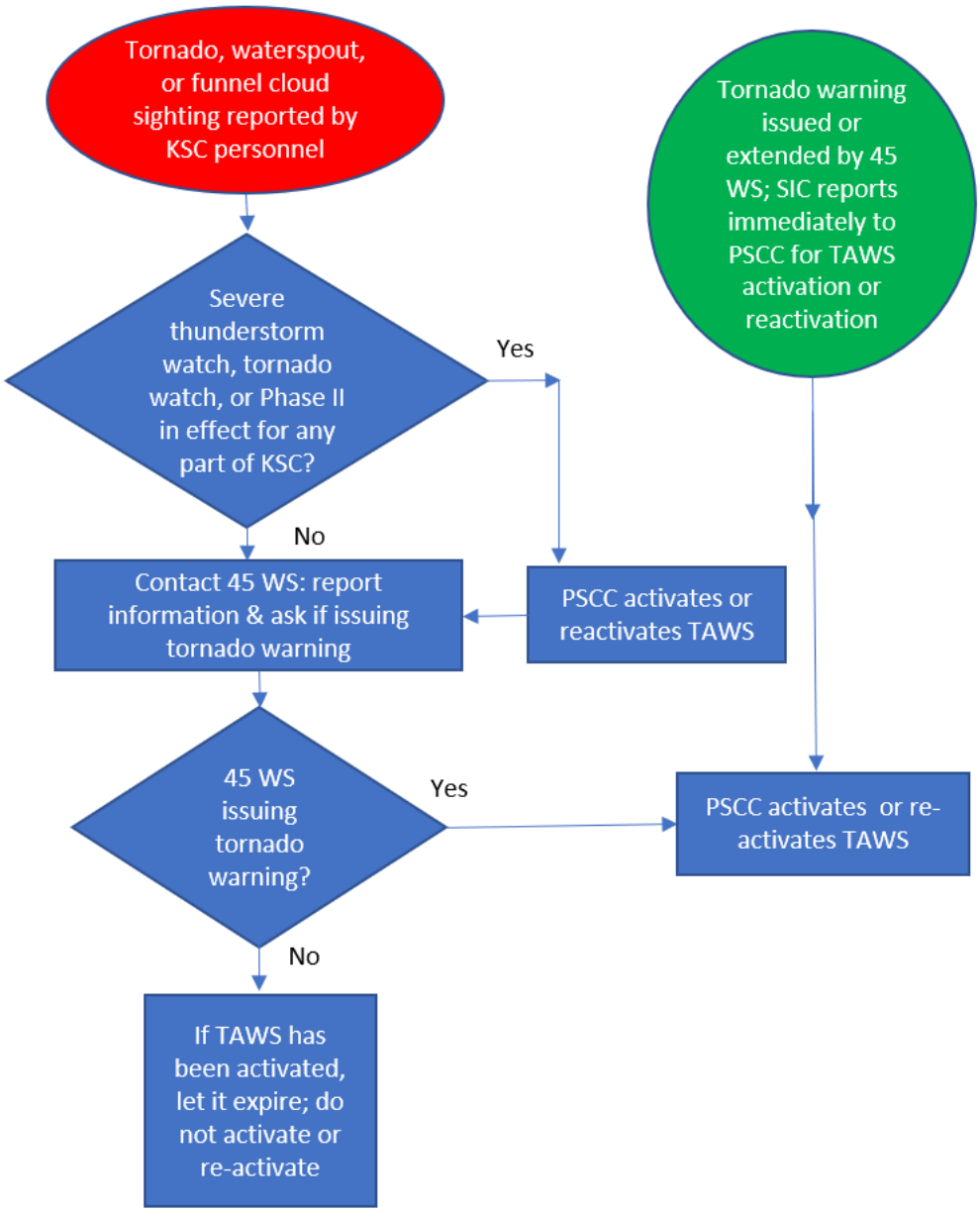
Appendix B

TAWS ACTIVATION

Complete if either of the following occurs:

(1) Tornado, waterspout, or funnel cloud reported by KSC personnel

(2) 45th Weather Squadron (45 WS) issues or extends a tornado warning for KSC and notifies Spaceport Integration Center (SIC)



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