

APPENDIX A

Storm Shelter Preparedness and Emergency Operations Plan

A101 General

A101.1 Scope. Community storm shelters shall have a storm shelter preparedness and emergency operations plan (SSPEOP) that complies with the provisions of this appendix. The intent of this appendix is to provide minimum plan requirements for 1) establishment of basic parameters (Section 104) , 2) developing and maintaining a state of preparedness to efficiently function in the event of a tornado or hurricane (Section 105), and 3) storm shelter emergency operational procedures in response to the threat from a tornado or hurricane (Section 106). The SSPEOP shall specify the storm shelter storm type as tornado or hurricane, and include information required herein, as determined by the designated storm shelter management team and the authority having jurisdiction (AHJ). Where the community storm shelter is designed for both hurricanes and tornadoes, the SSPEOP should cover both storm types where different measures apply.

A101.2 Approval. The SSPEOP shall be submitted for approval by the AHJ or Emergency Management Department where the shelter is designated for use by the general public.

A101.3 Availability. A copy of the SSPEOP shall be maintained at the facility at all times. The SSPEOP shall be available in the facility for reference and review by the designated storm shelter management team, and a copy shall be provided by the owner or owner's representative for maintenance by the AHJ or Emergency Management Agency where the shelter is designated for use by the general public.

A102 Definitions

A102.1 General. The following terms shall have, for the purpose of this appendix, the meanings as follows:

Storm shelter management team – Staff for the shelter that will be included in the development of the SSPEOP, along with the authority and jurisdiction, and those who will be involved with activation of the storm shelter, during and after activation of the storm shelter, as well as preparations and maintenance.

A103 SSPEOP requirements.

A103.1 General. The SSPEOP shall include basic storm shelters information as required in Section A104; preparedness requirements as required in Section A105, and emergency operations requirements as required in Section A106.

A104 SSPEOP basic information requirements

A104.1 General. An approved SSPEOP shall include basic information as required in Section A104. The purpose of the basic information plan components is to establish and document storm shelter responsibility, basic parameters, and floor plans. Site plans and registration are required where applicable.

A104.2 Responsibility. The SSPEOP shall include the identification and contact information for the entity or party responsible for operating the storm shelter. For storm shelters open to the general public, the plan shall identify the community organization responsible and no less than two active points of contact

for the responsible organization. For storm shelters open to intended occupants only, the responsible party shall be the storm shelter owner or the owner's representative

A104.3 Parameters. The SSPEOP shall include the following basic storm shelter information:

1. Storm type. Tornado, hurricane or combination tornado-hurricane storm shelter. Design duration of occupation.
2. Multi-use or single-use. If multi-use, then include the function of the space when not being used as a storm shelter
3. *Design occupant capacity*
4. Identify who the intended occupants are, for example:
 - a. Host building
 - b. Within a campus, defined property or boundary (i.e., neighborhood)
 - c. General public
5. Days and hours when the shelter will be operational for intended occupants including expectation of storm shelter use during off-hours, where applicable.

104.4 Floor plans and site plans

A104.4.1 General. The SSPEOP shall include floor plans for the storm shelter, and additional information for the host building and site where applicable.

A104.4.2 Storm shelter floor plans. A storm shelter floor plan shall be provided. The plan shall indicate the following:

1. Access and means of egress doors.
2. Emergency escape openings, where provided.
3. Impact protective systems that need to be secured in place.
4. Layout and function of occupant support areas
5. Mechanical vents or mechanical ventilation systems that need to be activated, where provided.
6. Water closet and lavatory locations, including locations for set up of temporary water closets and lavatories, where provided.
7. Sanitation support systems, where required.
8. Standby power supply, where provided.
9. Storage of required supplies such as first aid kits and flashlights where used to meet standby lighting requirements.
10. Location of fire extinguishers.

A104.4.3 Hurricane storm shelter floor plans. In addition to the items listed in Section A104.4.2, a hurricane storm shelter floor plan shall indicate the following:

1. Sample layout for sleeping accommodations.
2. Storage location for drinking water and food provisions.

A104.4.4 Host building plans. Where the storm shelter is located within or adjacent to a host building, a plan of the host building shall be provided. The host building plan shall identify the following:

1. The route from the building entrance to the storm shelter entrance.
2. Primary and secondary evacuation routes from the storm shelter after the storm.
3. A list of major fire hazards associated with the normal use and occupancy of the premises, if applicable.

A104.4.5 Site plans. Where any portion of the storm shelter's intended occupant population is anticipated to travel from off-site to the storm shelter, a site plan shall be provided. The site plan shall indicate the following:

1. Site arrival points for shelter occupants.
2. Traffic pattern and parking plans.
3. Exterior routes from the parking to the building entrance.

A104.5 Registration of location. Where a storm shelter registry is maintained by the AHJ or local emergency responders, the owner, owner's representative or entity responsible for operating the storm shelter shall register the location of the storm shelter. The SSPEOP shall indicate the name and contact information of the group that maintains the registry and the date that the storm shelter was registered, as applicable.

A105 SSPEOP preparedness requirements

A105.1 General. An approved SSPEOP shall include preparedness requirements as required in Section A105. The purpose of the plan's preparedness components is to verify the storm shelter is ready and maintained for use and will be fully operational during the storm.

A105.2 Storm shelter management team.

A105.2.1 General. The SSPEOP shall include storm shelter management team roles and duties. At a minimum, the roles of storm shelter manager, storm shelter assistant manager and general staff shall be identified. The SSPEOP shall identify the primary individual currently assigned to each role and shall identify back-up staff for management roles and for general staff roles that are assigned duties considered critical to shelter emergency operations.

A105.2.2 Contact Information. Current contact information for all identified primary and back-up shelter management team roles shall include phone numbers and email addresses. Contact information shall be updated no less than one time per year.

A105.2.3 Duties. In addition to the applicable requirements of Sections A105.2.4.1.1, A105.2.4.2.1, and A105.2.4.3.1, the SSPEOP shall identify the storm shelter management team primary and back-up roles charged with the following critical duties:

1. Authorization to issue an order to activate the storm shelter.
2. Authorization to issue an all clear for storm shelter deactivation.
3. unlocking the storm shelter, where applicable, and securing/locking down all impact protective systems prior to the storm.

A105.2.4 Specialized Personnel. The storm shelter management team shall include the following specialized personnel where required by Sections A105.2.4.1, A105.2.4.2, and A105.2.4.3

A105.2.4.1 Security Personnel. Where the storm shelter is open to the general public and *storm shelter design occupant capacity* is greater than 500 or where required by the AHJ, security personnel shall be designated in the SSPEOP.

A105.2.4.1.1 Duties. The duties of security personnel shall include:

1. Conduct an inspection of the storm shelter area and identify and address any occupant safety concerns.
2. Direct and assist the shelter occupants into the storm shelter at activation and for evacuation at deactivation.
3. Assist emergency response personnel where requested.

A105.2.4.2 Health Care Personnel. Where required by the AHJ, health care personnel shall be designated in the SSPEOP to provide first aid as needed and attend to health care needs of storm shelter occupants

A105.2.4.2.1 Duties. The duties of designated storm shelter health care personnel shall include:

1. Identify and assign medical support or first aid personnel.

2. Maintain first aid and medical support supplies for use during shelter activation
3. Maintain confidential information provided by intended occupants who have indicated special medical needs and coordinate indicated accommodations where practicable during shelter activation.
4. Designate isolation area(s) for occupants who arrive with indications of communicable illnesses and provide direction to the isolation area(s); provide personal protective equipment, such as masks or gloves, as appropriate

A105.2.4.3 Fire Watch Personnel. Where required by the AHJ, fire watch personnel shall be designated in the SSPEOP. Fire watch personnel shall remain on duty while the storm shelter is activated for use.

A105.2.4.3.1 Duties. On-duty fire watch personnel shall have the following responsibilities:

1. Conduct an inspection of the storm shelter area to identify and mitigate any fire hazards.
2. Keep diligent watch for fires, obstructions to *means of egress* and other hazards.
3. Take prompt measures for remediation of hazards and extinguishment of fires that occur.
4. Take prompt measures to assist in the evacuation from the storm shelter.

A105.2.5 Team training and team drills. Where required by the AHJ, storm shelter management team members and their backups shall be trained periodically. The purpose of staff training is to provide members with current information on their duties and responsibilities under the SSPEOP and to provide an opportunity to practice execution of their duties with other team members through team-only or intended occupant drills.

A105.3 Community Outreach and Notification.

A105.3.1 General. The SSPEOP shall include the method(s) and procedures chosen to contact, notify and update the intended occupants of the storm shelter regarding the following information:

1. Days and hours when the storm shelter will be operational including expectation of storm shelter use during off-hours, where applicable.
2. Activation Signals and Drills. The preferred and any alternative means of notifying the general public or intended occupants of the need to move to the storm shelter which shall be distinct from other hazard warning signals (e.g., fire alarm). Where provided, a description of the emergency voice/alarm communication system alert tone and preprogrammed voice messages shall be included.
3. Accessing the storm shelter including location of entrances and parking where applicable
4. Policies and procedures regarding:
 - a. Public health and infectious disease
 - b. Pets
 - c. Occupancy (i.e., shelter rules)
 - d. Deactivation
5. Shelter contact information

A105.3.2. Recordkeeping. The SSEOP shall include or reference the location of records including the dates that notifications occurred and the method of outreach implemented.

A105.4 Intended occupant dills

A105.4.1 General. Where required by the AHJ, intended occupant drills shall involve the movement of intended storm shelter occupants to the storm shelter. Unless more frequent drilling is required by the AHJ, no less than one intended occupant drill shall occur yearly.

A105.4.2 Recordkeeping. The SSEOP shall include or reference the location of records on required storm shelter drills. The records shall include the following information:

1. Date and time of the drill.
2. Notification method used.
3. Identity of the person conducting the drill, staff on duty, and staff participating.
4. Number of occupants relocated to the storm shelter.
5. Special conditions simulated.
6. Weather conditions when occupants were evacuated from the shelter.
7. Time required to accomplish complete movement of intended occupants to the shelter.
8. Problems encountered.

A105.4.3 Notification. Where required by the AHJ, prior notification of shelter activation drills shall be given to the AHJ.

A105.5 Communication

A105.5.1 General. The SSPEOP shall identify at least one means of communication other than landline telephone or cellular telephone for the storm shelter management team to communicate with emergency responders or to receive critical information during or following storm shelter activation. The SSPEOP shall indicate either where the identified alternate means of communication is stored within the storm shelter or which designated storm shelter management team member(s) is charged with bringing the device to the storm shelter upon activation. Appropriate alternate means of communication shall include no less than one of the following:

1. Handheld amateur radio, citizens' band radio, or emergency radio capable of reaching police, fire, or other emergency services
2. A NOAA weather radio with continuously charging batteries or battery supply as needed
3. A commercial radio with continuously charging batteries or battery supply as needed for receiving emergency broadcasts

A105.5.2 Contact Lists. The SSPEOP shall identify contact information for the following emergency services:

1. Local fire department (both emergency and non-emergency numbers; any radio frequencies)
2. Local police department (both emergency and non-emergency numbers; any radio frequencies)
3. Local emergency medical services (EMS; any radio frequencies)
4. Local emergency operations center (EOC; any radio frequencies)

A105.6 Maintenance Evaluations

A105.6.1 General. Required maintenance evaluations shall include storm shelter facilities evaluations for all storm shelters and occupant capacity evaluations. The SSPEOP shall include the schedule for periodic storm shelter preparedness evaluations and identify the storm shelter management team role(s) or trained shelter maintenance staff responsible for conducting the evaluations. The purpose of storm shelter preparedness evaluations is to address storm shelter operational considerations outside the scope of Section 113.2 and 113.3 of this standard.

A105.6.1 Storm shelter facilities evaluations. Storm shelter preparedness evaluations shall occur at least once a year and include the following steps:

1. Verify operation of ventilation, sanitation and lighting systems.
2. Verify operation of standby power supply
3. Verify operation of flashlights where applicable.

- 4 Check fire extinguishers.
- 5 Check first aid supplies and resupply if required.
- 6 Verify operation of alternative communication devices.
- 7 Verify all required signage is present and legible.
- 8 Verify water and food supplies where required for the storm shelter occupants

Where storm shelter facilities evaluations indicate corrective action for storm shelter support systems, operational preparedness shall be restored by repairing or replacing the faulty system(s) or element(s) to comply with applicable ICC 500 requirements.

A105.6.3 Occupant capacity evaluations. Storm shelters shall be evaluated not less than once a year to determine if the minimum floor area per occupant as specified in Section 502 of this standard has been maintained to support the *storm shelter design occupant capacity* upon activation of the shelter. Where the storm shelter's evaluated condition has been determined to impede activation or accommodation of the *storm shelter design occupant capacity*, corrective actions shall be implemented to restore and maintain the ability to activate the storm shelter in accordance with Section A106 of the SSPEOP and to accommodate the *storm shelter design occupant capacity*.

A105.6.4 Recordkeeping.

A105.6.4.1 Storm shelter facilities and occupant capacity evaluations records. The SSPEOP shall include or reference the location of records on storm shelter facilities and maintenance evaluations. The records shall include the following information:

1. The date and person(s) conducting the evaluations
2. Findings for each identified evaluation item
3. Subsequent corrective actions where applicable
4. Date when corrective action completed and person(s) responsible

A105.6.4.2 Impact protective system evaluation and maintenance records. The SSPEOP shall include or provide the location of records required in Section 113.4 of this standard. Additionally, the SSPEOP shall include or provide the location of warranties and instruction manuals for listed and labeled impact protective systems.

A106 SSEOP emergency operational procedures requirements

A106.1 General. The SSPEOP shall take into consideration the expected warning time and the minimum design duration of the storm shelter storm type - 2 hours for tornado shelters and 24 hours for hurricane shelters. The SSPEOP shall include consideration for initiating operation both during and after normal operating hours of the host building.

A106.2 Initiating storm shelter activation. The SSPEOP shall include the following information to initiate storm shelter activation:

1. Identification of the *designated storm shelter management team* role(s) responsible for monitoring storm conditions and putting the rest of the team on alert when indicated.
2. Major tasks - including roles and responsibilities - that the *designated storm shelter management team* will perform during a tornado or hurricane watch issued by the National Weather Service. For tornadoes, the SSPEOP shall identify specific triggers to initiate the following major tasks: opening the storm shelter and notifying the intended occupants of the need to move to the storm shelter.
3. Major tasks that the *designated storm shelter management team* will perform during a tornado/hurricane warning issued by the National Weather Service. For hurricanes, the SSPEOP shall identify specific triggers to initiate the following major tasks: opening the storm shelter and notifying the intended occupants of the need to move to the storm shelter.

A106.3 Storm shelter activation. At a minimum, the SSPEOP shall include the following information to activate the storm shelter:

1. Identification of *designated storm shelter management team* role(s) and duties needed to evacuate intended occupants from the host building to the storm shelter where applicable.
2. Identification of *designated storm shelter management team* role(s) and duties needed to assist persons unable to use the access route to the storm shelter unassisted
3. Identification of each door or other impact protective device that needs to be secured during a storm and a description of the when and how to secure them, as well as the identity and current contact information of the *designated storm shelter management team* role(s) and back-up role responsible for securement.

A106.4 Operations during the storm. The SSPEOP shall include the roles, responsibilities and duties of the storm shelter management team during the storm. Where required by the AHJ, the SSPEOP shall also include the following:

1. Procedures for accounting for staff and occupants after movement to the storm shelter has been completed.
2. The preferred and any alternative means of reporting the active operation of the storm shelter to a designated emergency response organization.
3. A description of the plan for preparation, distribution and storage of water and food supplies, where provided

A106.5 Storm shelter deactivation. The SSPEOP shall include a description of how it will be determined it is safe for occupants to leave the shelter, when the storm shelter is occupied for an actual storm, not a drill. Where required by the AHJ, the SSPEOP shall also include the following:

1. A description of special staff actions for evacuation of the shelter after the storm.
2. Procedures for accounting for staff and occupants leaving the shelter including relocation for medical assistance, relocation to recovery facilities or other plans.
3. Update SSPEOP as needed