



Community Fireworks Display Guidelines and Restricted Outdoor (Consumer Only) Pyrotechnic Operator Exam Study Guide

Purpose:

The purpose of this guide is to provide a base level of knowledge for those who desire to hold a Community Fireworks Display using consumer fireworks only. It is also an independent study guide for those looking to obtain a Pyrotechnic Operator - Restricted Outdoor (Consumer Only) License within the state of South Carolina. This guide is not an all-inclusive list of the requirements of the South Carolina Code of Regulations, state adopted fire codes, and referenced standards. To assist you in preparing for the exam, answers to exam questions can be found in the referenced section listed in the tables below and highlighted in each section of this guide. This guide does not address requirements set by the local Authority Having Jurisdiction (AHJ). All potential license holders are encouraged to print a copy of this material for their own use and professional development in the field of pyrotechnics.

South Carolina Code of Regulations

South Carolina Code of Regulations	
71-8300.1 (E)(5)	71-8305.6 (B)(2)
71-8305.5 (A)(1)	71-8305.6 (B)(6)
71-8305.5 (A)(3)	71-8305.6 (B)(7)
71-8305.5 (A)(5)	71-8305.7 (B)(3)
71-8305.5 (A)(7)	

71-8300.1 General

E. Acronyms and Definitions: The following references apply throughout these regulations. Words not defined in these regulations shall have the meaning stated in the referenced codes and standards adopted by these regulations.

1. “**AHJ**” means Authority Having Jurisdiction, which is the SFM, or his agents, or any local fire official covered by S.C. Code Ann. Section 23-9-30, 1976, as amended.

5. “**Community Fireworks Display**” means a display of consumer fireworks before a gathering where the individual discharging the consumer fireworks is not the responsible owner or lessee of the private property from where the display is being discharged. Public property or property not owned by an individual who is responsible for the discharging of consumer fireworks constitutes a community fireworks display. Consumer fireworks purchased by an association, organization, or business for the purpose of a display before a gathering of any number of people constitutes a community fireworks display.

6. “**Consumer Fireworks**” means any small device designed to produce visible effects by combustion and which must comply with the construction, chemical composition, and labeling regulations of the U.S. Consumer Product Safety Commission, as set forth in Title 16, Code of Federal Regulations, parts 1500 and 1507. Some small devices designed to produce audible effects are included, such as whistling devices, ground devices containing fifty (50) mg or less of explosive materials, and aerial devices containing 130 mg or less of explosive materials. Consumer fireworks are classified as fireworks UN0336 and UN0337 by the USDOT at 49 CFR 172.101. This term does not include fused set pieces containing components which together exceed 50 mg of salute powder. Consumer fireworks are further defined as those classified by the USDOT hazard classification 1.4g. These fireworks were formerly known as “Class C Fireworks.”

8. “**Display Fireworks**” means large fireworks designed primarily to produce visible or audible effects by combustion, deflagration, or detonation. This term includes, but is not limited to, salutes containing more than two (2) grains (130 mg) of explosive materials, aerial shells containing more than 40 grams of pyrotechnic compositions, and other display pieces which exceed the limits of explosive materials for classification as “Consumer Fireworks.” Display fireworks are classified as fireworks UN0333, UN0334, or UN0335 by the USDOT at 49 CFR 172.101. This term also includes fused setpieces containing components which together exceed fifty (50) mg of salute powder. Display fireworks are further defined as those classified by the USDOT as hazard classification 1.3g. These fireworks were formerly known as “Class B Fireworks.”

14. “**Fireworks**” means any composition or device designed to produce a visible or an audible effect by combustion, deflagration, or detonation, and which meets the definition of “consumer fireworks” or “display fireworks” as defined by this section.

16. “**Flame Effects**” means the combustion of solids, liquids, or gases utilizing atmospheric oxygen to produce thermal, physical, visual, or audible phenomena before an audience.

23. “**SDS(s)**” means Safety Data Sheet(s).

24. “**NFPA**” means the National Fire Protection Association.

25. “**OSFM**” means the Office of State Fire Marshal, Division of Fire and Life Safety, Department of Labor, Licensing and Regulation, also known as SC State Fire.

30. “**Proximate Audience**” means any indoor use of pyrotechnics and the use of pyrotechnics before an audience located closer than the distances allowed by NFPA 1123.

31. “**Public Firework Display**” means a presentation of Display or Consumer Fireworks for a public gathering, where the individual discharging the fireworks is not the responsible owner or lessee of the private property from where the display is being discharged. Public property or property not owned by an individual who is responsible for the discharging of fireworks constitutes a public fireworks display. Any public or private gathering utilizing display fireworks constitutes a public fireworks display.

32. “**Pyrotechnics**” means any composition or device designed to produce visible or audible effects for entertainment purposes by combustion, deflagration, or detonation.

36. “**SCFC**” means South Carolina Fire Code, which is the latest edition of the International Fire Code (IFC) with South Carolina modifications, as adopted and promulgated by the South Carolina Building Codes Council, except where South Carolina modifications do not apply.

40. “**SFM**” means the State Fire Marshal or his agent.

41. “**Theatrical Pyrotechnics**” means pyrotechnic devices for professional use in the entertainment industry similar to consumer fireworks in chemical composition and construction but not intended for consumer use.

42. “**USDOT**” means U.S. Department of Transportation.

71-8305.4. Qualifications of Operators.

A. Operator Classifications

1. “Pyrotechnic Operator – Unrestricted” may conduct and take charge of all activity in connection with the use of rockets, flame effects, Display Fireworks, binary system pyrotechnics, consumer fireworks, theatrical pyrotechnics, novelties, and other special effects permitted by the OSFM for a proximate audience display, commercial entertainment, or special effects in motion picture, theatrical, and television productions in accordance with NFPA 1123, NFPA 1126, and NFPA 160. The use of explosives or explosive materials not covered under this regulation requires licensure in compliance with S.C. Code Ann. §23-36-10 et seq. and regulation promulgated by OSFM.

2. “Pyrotechnic Operator – Restricted Outdoor” may conduct and take charge of all activity in connection with the use of flame effects, Display Fireworks, binary system pyrotechnics, consumer fireworks, theatrical pyrotechnics and novelties permitted by the OSFM for an outdoor public fireworks display in accordance with NFPA 1123. This classification DOES NOT include displays before a proximate audience.

3. “Pyrotechnic Operator – Restricted Outdoor (Consumer Only)” may conduct and take charge of all activity in connection with the use of consumer fireworks for an outdoor public fireworks display. This classification DOES NOT include displays before a proximate audience.

4. “Pyrotechnic Operator – Special Effects (SFX)” may conduct and take charge of all activity in connection with the use of flame effects, display fireworks, binary system pyrotechnics, consumer fireworks, theatrical pyrotechnics, novelties, and other special effects permitted by the OSFM for the sole purpose of motion picture, television, theatrical or operatic productions. The use of explosives or explosive materials not covered under this regulation requires licensure in compliance with S.C. Code Ann. §23-36-10 et seq. and regulations promulgated by OSFM.

5. “Pyrotechnic Operator – Flame Effects” may conduct and take charge of all activity in connection with the use of flame effects intended for proximate audience displays, or special effects for motion picture, theatrical, and television productions before an audience in Group A and E occupancies per SCFC and NFPA 160.

B. All Operators.

1. No person shall be granted a license who has not successfully completed a written examination administered by the OSFM. The exam will cover the applicable codes, state laws, and regulations and the additional requirements listed below for the specific class of license for which they are applying.

2. Operators using explosives or explosive materials must have the appropriate Federal licenses*. Operators shall provide a copy of applicable Federal licenses.

**Federal license is not required for Pyrotechnic Operator – Restricted Outdoor (Consumer Only) License.*

3. Licenses must be renewed every three (3) years prior to the day of expiration shown on the license.

4. Every three* years, each licensed operator shall be required to attend training offered by the OSFM or attend pre-approved training providing a total of eight (8) hours of continuing education during the licensing cycle.

**Modified from two years to three years by SFM policy.*

5. In accordance with the Administrative Procedures Act, the OSFM may petition an Administrative Law Judge to revoke or suspend a license because of, but not limited to:

- a. Failure to comply with any order written by the OSFM;
- b. Conviction of (1) a felony, (2) a crime of violence, or (3) any crime punishable by a term of imprisonment exceeding two years; or
- c. Advocating or knowingly belonging to any organization or group which advocates violent overthrow of or violent action against the federal, state, local government, or its citizens; or
- d. Having or contracting physical or mental illness or conditions that in the judgment of the OSFM would make use or possession of fireworks, pyrotechnics, or explosive materials hazardous to the licensee or the public; or
- e. Violating the terms of the license or essential changes in the conditions under which the license was issued without prior approval of the OSFM;

71-8305.5. Display Permits.

A. All Displays.

1. Any person who desires to hold a Public Fireworks Display, Proximate Audience Display, Special Effects Display, or Flame Effects Display in front of an audience shall obtain a permit from the OSFM before the display.

2. The OSFM may revoke, suspend, or deny a permit because of, but not limited to:

- a. The display operator does not possess the correct license classification for the display;
- b. Not complying with any order written by the OSFM;
- c. Violating the terms of the permit or essential changes in the conditions under which the permit was issued without prior approval of the OSFM;
- d. Giving false information or making a misrepresentation to obtain a permit;
- e. Failure to follow applicable codes and standards;
- f. Incident causing injury or death.

3. A “Request to Modify an Existing Pyrotechnic Display Permit” form must be submitted for approval of requested changes in the conditions or terms under which a permit was previously issued.

4. Permits shall be requested through the OSFM IMS.

5. All pyrotechnics shall be purchased from a pyrotechnic manufacturer or distributor licensed by the South Carolina Board of Pyrotechnic Safety. A licensed South Carolina Pyrotechnic Operator shall be present and supervise the firing of all public fireworks displays.

6. The fireworks supplier shall carry a minimum of \$1,000,000 of Public Liability Insurance. The policy must list as an additional insured the display sponsor as well as the State of South Carolina, and its agents. The coverage company must be an insurer which is either licensed by the DOI in this State or approved by the DOI as a nonadmitted surplus lines carrier for risks located in this State. In the event the liability insurance is canceled, suspended, or nonrenewed, the insurer shall give immediate notice to the OSFM.

7. Public Liability Insurance in the amount of \$1,000,000 shall be provided by the permittee. The permittee shall furnish a certificate of insurance (COI) in this amount with their application. The permittee shall list the State of South Carolina and its agents as additional insured. The COI shall contain the display dates or period.

8. The coverage company must be an insurer which is either licensed by the DOI in this State or approved by the DOI as a nonadmitted surplus lines carrier for risks located in this State. In the event the liability insurance is canceled, suspended, or nonrenewed, the insurer shall give immediate notice to the OSFM.

71-8305.6. Operational Requirements of Displays.

A. All Displays.

1. The operator shall have their license in their possession when conducting a display and shall exhibit their license on request of any AHJ.
2. All displays must have a person in charge that holds the proper license issued by the OSFM for the type of display being conducted.
4. Operators must notify the OSFM within 24 hours of any fires, thefts, injuries or deaths involving fireworks. The operators shall provide the OSFM with a copy of the report filed with the police department or the incident report from the fire department. [...]
5. Any person who violates any provision of these laws and regulations will be subject to the following penalty provisions:
 - a. S.C. Code Ann. Section 23-9-20,
 - b. S.C. Code Ann. Section 23-35-150.
7. The AHJ may require the permittee to furnish fire support personnel other than local firefighters.

B. Outdoor Displays.

1. Where unusual conditions exist, the AHJ may increase the minimum clearances as necessary before granting approval of the display site. The AHJ may not reduce clearances specified in NFPA 1123 without written approval of the OSFM.

2. A copy of the display permit shall be accessible on site.

3. Operators shall never use damaged fireworks, fireworks that are wet, or fireworks damaged by moisture. Operators shall not dry wet pyrotechnics for reuse. Operators shall handle and dispose of wet or damaged pyrotechnics per the manufacturer's instructions.

5. Moorings or anchors shall secure floating vessels or platforms used for firing of a Public Fireworks Display.

6. Operators shall not reload mortars during a display.

7. It shall be the responsibility of the permittee to arrange with the AHJ for the detailing of firefighters and equipment as required.

71-8305.7. Community Fireworks Displays.

A. This regulation shall not apply to a person who purchases consumer fireworks and discharges them on their own property, either owned or leased. These conditions do not constitute a public display regardless of the number of persons gathered.

B. It shall be deemed a violation of these regulations to:

1. Hold a Community Fireworks Display using consumer fireworks, without an approved permit from the OSFM;

2. Explode or ignite fireworks within 300 ft. of where fireworks are stored, sold or offered for sale;

3. Explode or ignite fireworks for a community fireworks display less than 200 ft. from spectators, occupied buildings, and parking;

4. Ignite, discharge, and/or throw fireworks from any motor vehicle or to place, ignite, discharge, and/or throw fireworks into or at any motor vehicle; and

5. Ignite or discharge fireworks in a wanton or reckless manner to constitute a threat to the personal safety or property of another.

South Carolina Fire Code

SC Fire Code
5608.6

5608.6 Installation of mortars. Mortars for firing fireworks shells shall be installed in accordance with NFPA 1123 and shall be positioned so that shells are propelled away from spectators and over the fallout area. Mortars shall not be angled toward the spectator viewing area. Prior to placement, mortars shall be inspected for defects, such as dents, bent ends, damaged interiors and damaged plugs. Defective mortars shall not be used.

5608.7 Handling. Aerial shells shall be carried to mortars by the shell body. For the purpose of loading mortars, aerial shells shall be held by the thick portion of the fuse and carefully loaded into mortars.

5608.8 Fireworks display supervision. Whenever in the opinion of the *fire code official* or the operator a hazardous condition exists, the fireworks display shall be discontinued immediately until such time as the dangerous situation is corrected.

5608.9 Post-fireworks display inspection. After the fireworks display, the firing crew shall conduct an inspection of the fallout area for the purpose of locating unexploded aerial shells or live components. This inspection shall be conducted before public access to the site shall be allowed.

Where fireworks are displayed at night and it is not possible to inspect the site thoroughly, the operator or designated assistant shall inspect the entire site at first light.

NFPA 1123 (2018 Edition)

NFPA 1123 (2018 Edition)				
3.3.15.1		7.2.2		9.1.3
3.3.41.1		7.4.1		9.3.1.1
5.1.2		8.1.3.4		9.5.1
5.1.2.2.1		8.1.4.1		10.1.1
5.1.4.7		8.1.4.2		10.2
5.3.1		8.1.4.3.1		E.5.1.1
6.2.1		8.1.6.1		

Chapter 3 Definitions

3.3.15 Fireworks. Any composition or device for the purpose of producing a visible or an audible effect for entertainment purposes by combustion, deflagration, or detonation, that meets the definition of *Consumer Fireworks* or *Display Fireworks* as set forth in this code. [1124, 2017].

3.3.15.1 Consumer Fireworks. Small fireworks devices containing restricted amounts of pyrotechnic composition, designed primarily to produce visible or audible effects by combustion, that comply with the construction, chemical composition, and labeling regulations of the U.S. Consumer Product Safety Commission (CPSC), as set forth in CPSC 16 CFR 1500 and 1507, 49 CFR 172, and APA 87-1, *Standard for the Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical pyrotechnics*. [1124, 2017].

3.3.15.2 Display Fireworks. Large fireworks devices that are explosive materials intended for use in fireworks displays and designed to produce visible or audible effects by combustion, deflagration, or detonation, as set forth in 27 CFR 555, 49 CFR 172, and APA 87-1, *Standard for the Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics*. [1124, 2017].

3.3.41.1 Discharge Site. The area immediately surrounding the location where fireworks and other devices are ignited for a display.

3.3.41.2 Display Site. The immediate area where a fireworks display is conducted, including the discharge site, the fallout area, and the required separation distance from mortars to spectator viewing areas, but not spectator viewing areas or vehicle parking areas.

Chapter 5 Display Site Selection

5.1.2.1 A site plan shall be submitted to the AHJ within a time period required by the AHJ prior to the display.

5.1.2.2 The site plan shall include the dimensions of the display site and location of discharge site(s), spectator viewing area(s), parking area(s), fallout area(s), and the associated separation distances.

5.1.2.2.1 For display sites where fireworks are to be discharged from an elevation greater than 25 ft (7.5 m) above ground level (*see 5.2.1.2*), the elevation of the firing site(s) shall be included in the site plan.

5.1.4.5 No spectators or spectator parking areas shall be located within the display site.

5.1.4.6 Dwellings, buildings, and structures shall be permitted to be located within the display site with the approval of the AHJ and the owner of the dwelling, building, or structure, provided that the dwelling, building, or structure is unoccupied during the display, or if the structure provides protection for the occupants through noncombustible or fire-resistant construction.

5.1.4.7 The area selected for the discharge of aerial shells shall be located so that the trajectory of the shells shall not come within 25 ft (7.6 m) of any overhead object.

5.1.5.1 The fallout area shall be an open area.

5.1.5.2 Spectators, unauthorized vehicles, watercraft, or readily combustible materials shall not be located within the fallout area during the display.

5.1.6 Fire protection and other emergency response personnel and their vehicles shall remain at or beyond the perimeter of the display site during the actual firing of the display.

5.3.1 Tents shall not be located within the discharge site during the display.

5.3.2 Where tents are permitted in the fallout area by the operator and AHJ, such tents shall not be occupied during the display.

Chapter 6 Floating Vessels and Floating Platforms

6.1.1 The intent of this chapter shall be to provide guidance for the display of fireworks from floating vessels and floating platforms.

6.1.2 Floating vessels and floating platforms shall be permitted to be manned or unmanned, provided that the pyrotechnic crew remains in control of the site and firing of the display.

6.1.3 Floating vessels and floating platforms shall be held in control at all times, whether self-propelled, controlled by another vessel, or secured by mooring or anchoring.

6.2.1 Floating vessels and floating platforms shall be of sufficient strength and stability to safely allow the firing of the display.

6.2.2 The types of fireworks and placement of the fireworks launch tubes and accompanying equipment shall be such that, when fired, the stability of the site structures and seaworthiness of the floating vessels or platforms shall not be jeopardized.

6.2.3 Floating vessels and floating platforms that are manned during electrical firing shall have a safety shelter meeting the following requirements:

- (1) It shall be of sufficient size to accommodate all personnel present during the actual firing of the display.
- (2) It shall have a minimum of three sides and a roof.
- (3) It shall have walls and a roof constructed of at least 3/4 in. (19 mm) plywood or equivalent material.

Chapter 7 Rooftops, Other Structures, and Other Limited Egress Locations

7.2.1 Rooftops, bridges, towers, parking decks, and any other structures used as discharge sites shall be of sufficient strength and stability to safely allow the firing of the display.

7.2.2 Rooftops, bridges, towers, parking decks, and any other structures used as discharge sites shall be approved by the AHJ and the owner (or his or her agent).

7.2.3 Other dwellings, buildings, and structures shall be permitted to be located within the display site, provided all the following requirements are met:

- (1) Approval of the AHJ
- (2) Approval of the owner of the dwelling, building, or structure
- (3) Assurance that the dwelling, building, or structure is unoccupied during the display, or the occupants are protected by the dwelling, building, or structure or other means
- (4) Notification to the responding local fire department if other than the AHJ

7.4.1 During the firing of the display, an egress path shall be provided from any area where personnel are present in the discharge site.

7.4.2 Egress paths shall be unobstructed and free of impediments.

7.4.3 Egress paths shall be in a direction that does not pass through a discharge site.

Chapter 8 Operation of the Display

8.1.2.2 Where required by the AHJ, approved delineators or barriers shall be used to aid in crowd control.

8.1.2.3 Portions of the display site, other than the discharge site(s), shall be permitted to be open to the public prior to the display as long as the provisions of 4.2.2.2 are maintained.

8.1.2.4 Unescorted public access to the discharge site shall not be permitted where pyrotechnic materials are present during the period before the display.

8.1.2.5 The discharge site shall be restricted throughout the display and until the discharge site has been inspected after the display.

8.1.3 The operator shall have primary responsibility for safety.

8.1.3.1 The operator shall be responsible for ensuring that a sufficient number of assistants are available for the safe conduct of the fireworks display.

8.1.3.2 Only the operator, authorized assistants, and inspector(s) representing the AHJ shall be permitted in the display site while the display is in progress.

8.1.3.3 The operator shall be responsible for ensuring that all assistants are trained in the performance of their assigned tasks and that they are educated with regard to safety hazards.

8.1.3.4 During the firing of the display, all personnel in the discharge site shall wear the following:

- (1) Head protection
- (2) Eye protection
- (3) Hearing protection
- (4) Foot protection
- (5) Cotton, wool, or similarly flame-resistant, long-sleeved, long-legged clothing

8.1.3.5 Personal protective equipment (PPE), as necessary, shall be worn by the operator and assistants during the setup and cleanup of the display.

8.1.4 Wherever, in the opinion of the AHJ or the operator, any hazardous condition exists, the fireworks display shall be stopped until the condition is corrected.

8.1.4.1 If, in the opinion of the AHJ or the operator, the lack of crowd control poses a hazard, the fireworks display shall be postponed or discontinued immediately until such time as the situation is corrected.

8.1.4.2 If high winds, precipitation, or other adverse weather conditions prevail or begin such that a hazard exists in the opinion of the operator or the AHJ, the fireworks display shall be postponed or discontinued until weather conditions improve.

8.1.4.3 One or more spotters shall watch the flight and behavior of aerial shells and other aerial fireworks to verify that they are functioning as intended.

8.1.4.3.1 If any unsafe condition is detected, such as hazardous debris falling into the audience, the spotter shall signal the shooter to cease firing until the unsafe condition is corrected.

8.1.4.3.2 The spotters shall be in direct communication with the shooter during the conduct of the display.

8.1.4.4 In the event of a condition arising that requires the entry of fire protection or other emergency response personnel into the fallout area or security perimeter, the display shall be halted until the situation is resolved and the area is once again clear.

8.1.5 Operators and assistants shall use only flashlights, electric lighting, or other nonincendive illumination such as chemiluminescent devices for illuminating the firing area and the ready box area.

8.1.6.1 Smoking materials, matches, lighters, or open flame devices shall not be permitted within 50 ft (15 m) of any area where fireworks or other pyrotechnic materials are present.

8.1.6.2 Devices such as fuses, portfires, and torches shall be permitted to be used to ignite fireworks.

8.1.7 Pyrotechnic materials used in the display shall be protected from adverse weather conditions.

8.1.8 Moisture-damaged pyrotechnic materials shall not be used.

Chapter 9 Electrical Ignition of a Display

9.1.3 Where both manual firing and electrical ignition are used during a display, the mortars to be used for manual firing shall be separated from the mortars to be used for electrical ignition by a distance of at least 25 ft (7.6 m).

9.3.1.1 All portions of the electrical firing unit from the power supply to the electric match shall be visually inspected prior to the display by the shooter controlling the electrical firing unit or by an assistant.

9.3.1.2 The electrical firing unit shall not be in test or arm status during the inspection specified in 9.3.1.1.

9.3.2 The electrical firing unit shall be set up and located so that there is a clear line of sight to the mortars and to other parts of the discharge site, unless a spotter is in direct communication with the shooter controlling the electrical firing unit.

9.3.3 Only those persons necessary for the firing of the display shall be permitted in the vicinity of the electrical firing unit during the display.

9.3.4 Where fireworks are being loaded into mortars or otherwise set up for firing at the display site, cables from the electrical firing unit shall be disconnected.

9.3.5 Once the fireworks have been loaded or otherwise set up, testing of the circuits shall be permitted.

9.3.6 No persons shall be permitted in the immediate area of any fireworks that have been attached to the electrical firing unit when any circuit testing is performed.

9.3.7 If the testing of the circuits indicates that a problem exists, the following requirements shall apply:

- (1) The operator or assistant shall be permitted to reinspect any cables, connections, or electric matches that are in question.
- (2) The reinspection shall be performed only after the electrical firing unit has been switched off or disconnected from the power source.

9.5.1 After the completion of the display, the electrical firing unit shall be switched off and all cables disconnected prior to any cleanup or other work in the display site.

9.5.2 After the display, personnel shall not enter the discharge site for a period of time that the operator deems necessary for safety, after which the discharge site shall be inspected by the operator or assistants for any unfired devices.

Chapter 10 Qualifications

10.1.1 The operator shall be at least 21 years old and licensed or approved by the AHJ in accordance with any and all applicable federal, state, and local laws.

10.1.2 Applicants for licensing as an operator shall provide evidence of actual experience as an operator or assistant as part of demonstrating competency to the AHJ.

10.1.3 Applicants for licensing as an operator shall successfully complete a written examination of laws, regulations, and safety practices pertaining to the discharge of fireworks that shall be administered by the AHJ or shall otherwise demonstrate knowledge of these areas.

10.2 Assistants. All assistants shall be trained in the duties they are to perform, be under the direct supervision of the operator, and be at least 18 years old.

E.5 Site Plans.

E.5.1 Public displays are often conducted at the same site annually or on a regular periodic basis. Plans can be reused or filed with the AHJ for reference whenever an application is made.

E.5.1.1 The display operator, sponsor, or both should prepare and submit site plans to the AHJ for approval. These diagrams should be drawn to approximate scale, should illustrate compliance with Chapter 5, and to the extent required by the AHJ should contain all of the following information:

- (1) Display site — identify significant ground features, public rights of way, significant buildings or structures, overhead obstructions, parking areas, and spectator viewing areas
- (2) Location of fireworks storage areas (*if fireworks not used in the display are stored on site*)
- (3) Fallout area, including dimensions (*200' for Consumer Fireworks in SC*)
- (4) North arrow
- (5) Likely wind direction
- (6) Location of significant roadways, including access and control points
- (7) Traffic plans indicating the flow of vehicles into and out of the site before and after the display
- (8) Location of emergency vehicle staging area and access routes

E.5.1.2 Discharge Details. To the extent required by the AHJ, diagrams should be prepared and submitted to illustrate the general arrangement and size of mortars and the location of shell storage at the discharge site. These diagrams should include the location of the electrical firing unit.

E.5.1.3 Changes. Plans should be revised or updated as often as required by the AHJ to maintain their accuracy. Any changes in site conditions between the time plans are prepared and the time the display is conducted should be brought to the immediate attention of the AHJ and the display operator, sponsor, or both.