

Model Fire and Safety Policies
and
Program Guidelines
for
South Carolina School Districts
and Charter Schools

Developed by the South Carolina Department of Education
and the Office of the State Fire Marshal

in accordance with
S.C. Code Ann. §59-17-160
(2018 Act No. 256)

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1. Introduction

In 2018, during its 122nd Session, the South Carolina General Assembly passed Senate Bill 709, ratified as Act 256 of 2018. Act 256 amended the South Carolina Code of Laws to require the Office of the State Fire Marshal and the State Department of Education to create model fire and safety policies and program guidelines and make such guidelines available to public school districts and charter schools before the 2019–20 school year. Act 256 further requires all public school districts and charter schools to adopt fire and safety policies and programs before the 2020–21 school year.

The overall goal of any fire and safety policy or guideline is to provide a safe environment for South Carolina students, teachers, administrators, parents, and visitors, while on properties controlled by the school district or charter school. While routine fire and life safety inspections, conducted by a fire code official are important, and are addressed in the model policy and guidelines to follow, they are only representative of the status of the facility and its use on the day of the inspection. As custodians of the care of all who utilize school district and charter school properties, it is incumbent for school district and charter school personnel to ensure a safe environment is maintained year-round. It is recognized that school district and charter school personnel may not be widely familiar with code requirements and best practices in fire and life safety. Therefore, the following policies and guidelines are written in an effort to provide education and guidance, with the goal providing a safe environment and not just code compliance.

Unfortunately, attention is often given to fire and life safety issues on the heels of tragic events. As it relates to fire safety in schools, one such tragic event occurred here, in South Carolina. This tragedy would influence change at the state and national level, as it relates to school design and construction, exits and means of egress, and use of school facilities during assemblies. The tragedy occurred on May 17, 1923, at the Cleveland School, near Camden, South Carolina. Seventy-seven children and adults died in a school fire, on the night before graduation, during a production to celebrate the conclusion of the school year. A crowd of some three hundred people, mostly family and friends, poured into the school auditorium, which was located on the second floor. The event far exceeded the capacity of the auditorium, but there was no hint of concern about overcrowding or effort to monitor and control the number in attendance. When the last act of the play was beginning, a lamp fell from the wall, spilling its flammable contents on the stage. The fire spread rapidly and began to ignite the curtains on the stage. Conditions inside the building deteriorated rapidly with both heat and smoke beginning to take its toll on the people trying to exit the building.

As one can imagine, frantic parents tripped over chairs in the middle of the auditorium floor and lining the walls as they attempted to reach their children gathered near the stage, while others pushed and shoved their way toward the school's only narrow stairway. When panic began to take over, and patrons realized the single stairway was not sufficient enough to allow everyone to escape, people began to jump from the windows, twenty feet, to the ground.

A common statement made in today's times is, "We don't have fires in schools anymore". Nothing could be farther from the truth. According to incident reports provided to the Office of

the State Fire Marshal, South Carolina averages 100 fires each year in educational occupancies. Because of codes and standards, requiring schools to be designed and constructed using fire resistive materials, fire barriers to compartmentalize a fire, automatic fire detection and alarm systems, and automatic fire sprinkler systems, most school facility fires are contained to the object and room of origin. School construction and fire safety practices have come a long way since 1923, but we cannot afford to let our guards down. This is especially true, in light of the need to protect against other safety concerns, such as active intruders and natural disasters. Many auditoriums are still overcrowded during events; exits are blocked or locked; egress pathways are not maintained; fire resistive construction is not maintained; and fire alarm systems and sprinkler systems are not routinely inspected, tested, and maintained. The smoke produced from modern synthetic materials is more toxic and deadly than smoke in 1923.

The following model policies and guidelines cannot address every conceivable situation or safety issue. They do address requirements and/or best practices for active intruders and natural disasters, in addition to fire safety. Model policies and guidelines should be sufficiently comprehensive to ensure one measure of safety is not sacrificed to gain another. In fact, safety standards and best practices to address one type of safety concern, generally compliment standards and best practices addressing another safety concern. They are intended to work in harmony with one another, not in conflict.

This document is designed and intended to be a living document, meaning it will be adapted and revised over time to comply with the South Carolina Fire Code. The references contained in this document, to the South Carolina Fire Code, are accurate as of the time of this writing and subject to change during the routine adoption cycle (currently 3 years) of the Code. The code citations and explanations provided as part of this document do not represent all of the requirements of the South Carolina Fire Code, as it relates to buildings and properties occupied by public and charter schools. Portions of the document that are requirements of the South Carolina Fire Code are provided with direct references to the Code. Other portions that are not required by the Fire Code are provided as recommended guidelines to assist districts in implementing best practices.

In addition to model policies and guidelines, this document also provides a template for school districts and charter schools to use in developing and adopting their fire and safety policies and guidelines, to comply with Act 256 of 2018.

2. Applicability and Compliance Requirements

Act 256 of 2018 applies to all public school facilities. Act 256 does not apply to charter schools whose instruction is primarily delivered online.

S.C. Code Ann. §59-17-160(B) requires each school district board of trustees and the governing body of each charter school to adopt a policy and program for school facility fire and safety, including inspections, before the beginning of the 2020-2021 school year.

Most public school facilities and charter schools are owned or leased by a local school district or charter school, and are not considered state buildings. ***In order to comply with the requirement to include inspections in the adopted policy and program, each school district or charter***

school must make contact with the local fire department or fire code official responsible for code enforcement within their jurisdiction. The local fire department that responds to an emergency at the school facility is often the local authority having jurisdiction for inspections. ***The school district or charter school must identify the name of the entity that will be performing fire inspections for each facility and the frequency at which each facility will be inspected.*** If the local fire department or fire code official is unwilling to perform the required fire inspections, the school district or charter school should contact the Office of the State Fire Marshal for assistance in determining an acceptable alternative.

S.C. Code Ann. §59-17-160(B) also requires the locally adopted policies and programs for school facility fire and safety must:

- (1) be adopted in open meetings in which the public may provide comment on the terms of the policies and programs;***
- (2) include routine self-assessments; and***
- (3) be published on the district's or charter school's Internet website in a prominent location that is easily accessible by the public.***

Routine self-assessments, as required in §59-17-160(B)(2), are a great way to ensure a safe environment is maintained between the inspections conducted by the fire code official. A routine self-assessment should provide a means to identify and correct safety issues in a proactive manner, rather than as a reaction to violations cited by a fire code official. School districts should maintain documentation regarding the completion of routine self-assessments and which should include the following provisions, at a minimum:

- 1. Identify the employee(s) responsible for conducting the routine self-assessments for each school facility;***
- 2. Follow the self-assessment checklist template (provided in this document);***
- 3. Conduct the self-assessments for each building/facility owned by the school district on a monthly basis; and***
- 4. Maintain documentation of the monthly self-assessments and make available to the fire code official during an inspection.***

S.C. Code Ann. §59-17-160(C) requires each district and charter school to submit its fire and safety policy and program to the Office of the State Fire Marshal and the State Department of Education, prior to July 1, 2021. The Office of the State Fire Marshal and the State Department of Education will collaboratively review the school policies and programs and, within 120 days of the receipt of a policy or program, jointly provide written comments to the district on how the policies and programs may be improved.

Local school district boards of trustees and charter school governing bodies may request technical assistance in the development of fire and safety policies and programs. In an effort to provide proactive technical assistance, this document provides a template by which the school district or charter school may develop their fire and safety policies and programs.

3. Definitions of Responsible Parties

Successful fire and safety programs are a team effort. The following definitions are provided to create common terminology and provide clarity regarding the roles and responsibilities of team members.

Fire Department Jurisdiction – the local fire department with the responsibility to respond to fire-related emergencies at the school facility. Some school districts may have school facilities in multiple fire department jurisdictions.

Fire Code Official – also known as the Authority Having Jurisdiction (AHJ), the individual(s) responsible for performing fire code inspections and code enforcement for the school facility. The Fire Code Official may be a member of the local Fire Department Jurisdiction or the city/county building department.

Superintendent – district superintendent or his/her designee.

Facilities Manager – school district employee responsible for managing and coordinating maintenance and repairs of school facilities.

Fire and Life Safety Manager – school district employee designated in the district’s fire and safety policy/program as being responsible for the execution of the fire and safety program.

Facility Fire and Safety Coordinator – school district employee(s) assigned to coordinate fire and safety activities for a specific school facility. The Facility Fire and Safety Coordinator is the individual responsible for conducting the monthly self-assessments and reporting the results to the Fire and Life Safety Manager.

Crowd Manager – individuals trained to implement control measures as required by a crowd management plan and to control and direct occupants to exits in a safe manner. The South Carolina Fire Code (SCFC 403.12.3.1) requires Crowd Managers be provided at a ratio of one crowd manager for every 250 persons, where facilities or events involve a gathering of more than 1,000 people. Crowd Managers must complete approved training (SCFC 403.12.3.2).

4. Prevention Programs

Fire prevention and life safety in any building is the responsibility of the building owner and managers. In partnership with the building owners and managers, the local fire department or municipal or county government is responsible for enforcing the state’s minimum standard fire codes. Additionally, the Office of State Fire Marshal has jurisdiction over all school district facilities. Enforcement begins with education. The goal of this section of the plan is to connect each local school district and school administrator with a responsible fire code official who will educate them and assist them in understanding the fire code requirements and completing a monthly self-assessment of their facilities that will ensure that minimum levels of fire and life safety are maintained.

A. Fire Code Enforcement Responsible Parties and Inspection Frequency Identified

The school district is responsible for the safe maintenance and operation of every building that it owns and/or leases. The Responsible Party Identification and Contact Form (Form 4a) requires that you identify each building and the local fire code officials who are responsible for enforcing the state's adopted fire codes and the frequency at which they perform inspections. Most district's will have buildings in multiple fire department jurisdictions and will have to coordinate with multiple fire code officials. This document will allow you to identify who those responsible fire code officials are. If there is no local fire code official performing routine fire and life safety code inspections, leave this column blank.

B. Monthly Self-Assessments

The school district is responsible for maintaining a safe environment inside all of its facilities. Maintaining a safe environment requires constant attention to prevention and maintenance of building systems. The Monthly Self-Assessment (Form 4b) will guide you in taking the steps necessary to prevent fires and maintain your facilities to be as safe as possible for the children and community that you serve. In your district, or in each school, a person must be identified who will be responsible for conducting the Monthly Self-Assessment. This guidance document will instruct you on how to perform each item of the Monthly Self-Assessment. The following items marked with an asterisk (*) are part of the Monthly Self-Assessment.

5. Maintenance Programs

In order to create and maintain a safe built environment, attention to the following prevention and maintenance items is necessary.

A. Automatic Fire Sprinkler Systems

i. *Monthly

The owner shall visually inspect the fire sprinkler system gauges, valves, alarm conduits, and fire department connections. The gauges should demonstrate an adequate pressure of water (or air for dry pipe systems). The valves should be in the open position (valves are required to be indicating type). The alarm conduits and boxes must be in good condition and not been subjected to physical damage. Fire Department Connections (FDC) must be accessible, marked with an FDC sign, and provided with caps to prevent debris from entering the system. (SCFC 901.6.1)

ii. Annually

The owner shall have the fire sprinkler system inspected and tested by a SC licensed fire sprinkler contractor. Any required maintenance identified by the contractor must also be performed. Records of such inspection, testing, and maintenance must be maintained on the property and made available to a fire code official upon request. Annual inspection, testing, and maintenance of the fire sprinkler system shall also include any fire hydrants that are not on the municipal water system (SCFC 901.6.1). To ensure a quick response to impairments of the fire sprinkler system, it is recommended that the school district identify a licensed SC fire sprinkler contractor as a part of this plan.

iii. Impairments

There may be instances when a building or area of a building is left unprotected by the fire sprinkler system. This may be due to a planned event, like maintenance or repair to a fire sprinkler system, or it could be the result of an unplanned event, like a water main rupture. Regardless of why the system is impaired, the South Carolina Fire Code requires that either the building be evacuated and no longer occupied for any purpose, or that an approved fire watch procedure be put in place. The procedures found at the end of this document in System Impairments – Fire Watch Procedures (Form 5) is intended to document the owner’s intent and responsibility in implementing a fire watch for fire protection system impairments. (SCFC 901.7)

B. Fire Detection and Alarm Systems

i. Daily

The owner shall respond to any trouble or supervisory signals at the alarm panel by taking the appropriate action to verify or correct any problems. This may often require the services of the licensed fire alarm company. To ensure a quick response to impairments of the fire alarm system, it is recommended that the school district identify a licensed SC Fire Alarm Company as a part of this plan. (SCFC 901.6.1)

ii. *Monthly

The owner shall document as a part of the Monthly Self-Assessment, that there are no trouble or supervisory signals on the fire alarm panel and that the fire alarm system is in normal working condition.

iii. Annually

The owner shall have the fire alarm system inspected and tested by a SC licensed fire alarm contractor. Any required maintenance identified by the contractor must also be performed. Records of such inspection, testing, and maintenance must be maintained on the property and made available to the fire code official upon request. (SCFC 901.6.1)

iv. Impairments

There may be instances when a building or area of a building is left unprotected by the fire alarm system. This may be due to a planned event, like maintenance, testing, or repair of the fire alarm system or it could be the result of an unplanned event, like a lightning strike that impairs the fire alarm panel. Regardless of why the system is impaired, the South Carolina Fire Code requires that the building be evacuated and no longer occupied for any purpose, or that an approved fire watch procedure be put in place. The procedures found at the end of this document in System Impairments – Fire Watch Procedures (Form 5) is intended to document the owner’s intent and responsibility in implementing a fire watch for fire protection system impairments. (SCFC 907.1)

C. Commercial Kitchen Requirements

i. Kitchen Hood Suppression Systems

Kitchen exhaust hood suppression systems must be inspected and tested by a SC licensed fire equipment dealer at least every 6 months and anytime appliances are added or rearranged beneath the hood. Any required maintenance identified by the contractor must

be also be performed. Records of such inspection, testing, and maintenance must be maintained on the property and made available to the fire code official upon request. (SFC 901.6.1)

ii. Kitchen Hood Canopy, Ducts, and Exhaust Systems

Kitchen hood canopies, ducts, and exhaust systems are intended to capture and remove the heat, fumes, and grease laden vapors associated with cooking operations. The hood canopy contains filters that are intended to capture grease as it passes from the hood into the duct. These filters should be cleaned frequently enough to prevent the excessive accumulation of grease on them. A ***monthly** visual inspection of the hood canopy and filters is included in the monthly self-assessment. Depending on the volume and type of cooking, this may be daily or weekly. The filters may be washed in the sink or commercial dishwasher in most cases. Additionally, the hood canopy, ducts, and exhaust fan assembly must be inspected at least annually and cleaned (from the canopy through the ducts and including the fan assembly, usually located on the roof) as necessary to prevent the accumulation of grease. The owner is allowed to perform this inspection and cleaning; however, the responsible party who cleans the hood must be familiar with and follow the ANSI/IKECA C 10 Standard. Records of the inspections and cleanings must be maintained on the property and made available to the fire code official upon request. (SCFC 603.3.1, 603.3.2).

D. Fire-rated Assemblies

Fire-rated assemblies are design features of the building that prevent and control the spread of fire and smoke through the building, limiting the danger to human occupants and to the property in the case of a fire.

- i. The owner is responsible for visually inspecting the fire-rated assemblies (walls, barriers, and partitions) annually. The owner is responsible for maintaining the integrity of the rated assemblies by repairing any fire stopping materials for penetrations and joints in the assemblies. Fire stopping materials and methods must be of an approved type and in accordance with installation instructions. Records of inspection and maintenance of the fire rated assemblies must be maintained on the property and made available to the fire code official upon request. (SCFC 703.1)
- ii. The owner is responsible for ensuring that an annual inspection, test, and maintenance of fire rated doors is conducted. The inspection, test, and maintenance procedures are found in NFPA 80. Records of inspection, tests, and maintenance of the fire rated assemblies must be maintained on the property and made available to the fire code official upon request. (SCFC 703.1.3, 703.2)
- iii. The owner is responsible for ensuring that an annual inspection, test, and maintenance of fire rated shutters is conducted. The inspection, test, and maintenance must be in accordance with NFPA 80 and the manufacturer's instructions. Typically, a manufacturer's certified technician is required to conduct this inspection, test, and maintenance. Records of inspection, test, and maintenance of the fire rated shutters must

be maintained on the property and made available to the fire code official upon request. (SCFC 703.1.3, 703.2)

- iv. The owner is responsible for ensuring that inspections, tests, and maintenance of fire and smoke dampers is conducted in accordance with Chapter 19 of NFPA 80. Smoke and Fire Dampers must be inspected and tested one year after the initial acceptance tests and at least every four years after that in accordance with the test procedures in NFPA 80. Records of inspection, tests, and maintenance of the fire rated assemblies must be maintained on the property and made available to the fire code official upon request. (SCFC 703.2)

E. Emergency lighting

i. *Monthly

The owner is responsible for conducting an activation test of all battery powered emergency lighting and exit sign equipment. This may be performed by pressing the test button on each unit, or by switching the electrical circuit breaker for normal power to the off position and observing the lighting equipment operate under the simulated power failure. Records of monthly tests of the emergency lighting equipment is included as part of the monthly self-assessment and must be maintained on the property and made available to the fire code official upon request. (SCFC 604.6.1)

ii. Annually

The owner must conduct a power test of the emergency lighting equipment by switching the electrical circuit breaker for normal power to the off position and observing the lighting equipment operating in the emergency power mode for at least 90 minutes. Records of the tests must be maintained on the property and made available to the fire code official upon request. (SCFC 604.6.2)

F. Emergency Power Supply System Generators

Emergency power supply system generators shall be inspected, tested, and maintained in accordance with NFPA 110 and the manufacturer's instructions. When the manufacturer's instructions are not provided, the schedule provided in Annex A of NFPA 110, (included as Table 5.f to this document), shall be followed. The inspection, test, and maintenance shall be conducted by a qualified person.

i. Weekly

Generators shall be visually inspected weekly. The visual inspection is shall include at least fuel and fluid levels and general condition of the equipment.

ii. *Monthly

Generators shall be operated under load at least for 30 minutes. Transfer Switches shall be operated at least ***monthly**. Records of inspections, tests, and maintenance must be maintained on the property and made available to the fire code official upon request. (SCFC 604.4, 604.5)

c. Annually

The generator shall have preventive maintenance performed by a qualified person.

G. Portable Fire Extinguishers

Portable Fire Extinguishers are required to be located throughout your facilities so that travel distance to a portable fire extinguisher is not more than 75 feet. Extinguishers should be in a cabinet or mounted to the wall with the top of the extinguisher not more than 60 inches above the floor. Extinguishers must be maintained in accordance with NFPA 10 and accessible at all times. (SCFC 906.2, 906.3, 906.9.1)

i. *Monthly

The owner is responsible for inspecting portable fire extinguishers monthly to ensure that they are available, accessible, and ready for use (“in the green”).

ii. Annually

The owner must ensure that all portable fire extinguishers are serviced by a SC licensed fire equipment dealer at least annually.

6. Response Programs

**A. Fire Evacuation Plans and Drills
Plans**

The South Carolina Fire Code (SCFC 403.2, 403.5) requires an approved fire safety and evacuation plan be prepared and maintained for Assembly (auditoriums and gymnasiums) and Education (school buildings) occupancies.

Fire evacuation plans (SCFC 404.2.1). Fire evacuation plans shall include the following:

1. Emergency egress or escape routes and whether evacuation of the building is to be complete by selected floors or areas only or with a defend-in-place response.
2. Procedures for employees who must remain to operate critical equipment before evacuating.
3. Procedures for the use of elevators to evacuate the building where occupant evacuation elevators complying with Section 3008 of the *International Building Code* are provided.
4. Procedures for assisted rescue for persons unable to use the general *means of egress* unassisted.
5. Procedures for accounting for employees and occupants after evacuation has been completed.
6. Identification and assignment of personnel responsible for rescue or emergency medical aid.
7. The preferred and any alternative means of notifying occupants of a fire or emergency.
8. The preferred and any alternative means of reporting fires and other emergencies to the fire department or designated emergency response organization.
9. Identification and assignment of personnel who can be contacted for further information or explanation of duties under the plan.

10. A description of the emergency voice/alarm communication system alert tone and preprogrammed voice messages, where provided.

Fire safety plans (SCFC 404.2.2). Fire safety plans shall include the following:

1. The procedure for reporting a fire or other emergency.
2. The life safety strategy including the following:
 - 2.1. Procedures for notifying occupants, including areas with a private mode alarm system.
 - 2.2. Procedures for occupants under a defend-in-place response.
 - 2.3. Procedures for evacuating occupants, including those who need evacuation assistance.
3. Site plans indicating the following:
 - 3.1. The occupancy assembly point.
 - 3.2. The locations of fire hydrants.
 - 3.3. The normal routes of fire department vehicle access.
4. Floor plans identifying the locations of the following:
 - 4.1. Exits.
 - 4.2. Primary evacuation routes.
 - 4.3. Secondary evacuation routes.
 - 4.4. Accessible egress routes.
 - 4.4.1. Areas of refuge.
 - 4.4.2. Exterior areas for assisted rescue.
 - 4.5. Refuge areas associated with *smoke barriers* and *horizontal exits*.
 - 4.6. Manual fire alarm boxes.
 - 4.7. Portable fire extinguishers.
 - 4.8. Occupant-use hose stations.
 - 4.9. Fire alarm annunciators and controls.
5. A list of major fire hazards associated with the normal use and occupancy of the premises, including maintenance and housekeeping procedures.
6. Identification and assignment of personnel responsible for maintenance of systems and equipment installed to prevent or control fires.
7. Identification and assignment of personnel responsible for maintenance, housekeeping and controlling fuel hazard sources.

Drill Frequency

The South Carolina Fire Code (SCFC 405.2) requires fire and evacuation drills be conducted at the following frequencies:

- Group A (Assembly) Occupancies (Gymnasiums and Auditoriums) – Quarterly, involving employees; and
- Group E (Educational) Occupancies (School Buildings) – Monthly, involving all occupants of the building.

S.C. Code Ann. §59-63-910(A) requires all public schools, including charter schools whose instruction is not primarily delivered online, to conduct fire, active shooter/intruder, and severe weather/earthquake drills. According to state law, within each school year, schools

must conduct *at least* two fire drills, two active shooter/intruder drills, and two severe weather/earthquake drills, with at least one of each drill conducted each semester. School districts should continue to work with local law enforcement regarding active shooter/intruder drills. Resources may be found here: <https://www.ed.sc.gov/districts-schools/school-safety/resources-and-training/safety-resources/>

Because the South Carolina Fire Code requires monthly fire drills in Educational Occupancies and State Law requires *at least* two fire drills, it is the expectation of fire code officials that monthly fire drills be conducted during the school year. Additionally, the South Carolina Fire Code (SCFC 403.5.1) requires the first emergency evacuation drill of each school year be conducted within 10 days of the beginning of classes.

B. Procedures for fire drills and emergency evacuation drills

Time

Drills shall be held at unexpected times and under varying conditions to simulate the unusual conditions that occur in case of fire. This includes conducting drills during the changing of classes, when the school is at assembly, during recess or gymnastic periods or during other times to avoid distinction between drills and actual fires. (SCFC 405.4)

Record keeping

Records shall be maintained of required emergency evacuation drills and include the following information (SCFC 405.5):

1. Identity of the person conducting the drill.
2. Date and time of the drill.
3. Notification method used.
4. Employees on duty and participating.
5. Number of occupants evacuated.
6. Special conditions simulated.
7. Problems encountered.
8. Weather conditions when occupants were evacuated.
9. Time required to accomplish complete evacuation.

Notification

Where required by the *fire code official* prior notification of emergency evacuation drills shall be given to the *fire code official*. (SCFC 405.6)

Initiation

Where a fire alarm system is provided, emergency evacuation drills shall be initiated by activating the fire alarm system (SCFC 405.7). To avoid concern regarding the use of the fire alarm or fire drill as part of an active intruder incident, it is acceptable to make an announcement immediately preceding the initiation of the fire drill to the effect of, "This is a drill".

Accountability

As building occupants arrive at the assembly point, efforts shall be made to determine if all occupants have been successfully evacuated or have been accounted for. (SCFC 405.8)

Recall and reentry

An electrically or mechanically operated signal used to recall occupants after an evacuation shall be separate and distinct from the signal used to initiate the evacuation. The recall signal initiation means shall be manually operated and under the control of the person in charge of the premises or the official in charge of the incident. Persons shall not reenter the premises until authorized to do so by the official in charge. (SCFC 405.9)

C. Active Shooter/Intruder (Lockdown) Plans and Drills

The Department of Education and the State Law Enforcement Division (SLED) developed Active Shooter/Intruder Guidelines that are available, along with other safe schools resources, at: <https://www.ed.sc.gov/districts-schools/school-safety/resources-and-training/safety-resources/> School districts should continue to work with local law enforcement agencies and when needed SLED regarding all active shooter/intruder drills and procedures.

Requirements for Active Shooter/Intruder (Lockdown) Plans and Drills are found in S.C. Code Ann. §59-63-910 and in the South Carolina Fire Code. Additional recommendation and guidance can be found on the Department of Education’s website, under “School Safety”.

Per S.C. Code Ann. §59-63-910(A) requires all public schools, including charter schools whose instruction is not primarily delivered online, to conduct fire, active shooter/intruder, and severe weather/earthquake drills. According to state law, within each school year, schools must conduct *at least* two fire drills, two active shooter/intruder drills, and two severe weather/earthquake drills, with at least one of each drill conducted each semester.

The South Carolina Fire Code (SCFC 404.2.3.1) requires facilities that develop a lockdown plan to comply with the requirements of the Fire Code regarding plan content, training frequency, and notification.

D. Natural Disaster (Tornado/Earthquake) Plans and Drills

Information pertaining to tornado and earthquake preparedness and response can be found, at: <https://www.ready.gov/earthquakes> and <https://www.ready.gov/tornadoes>.

7. Construction and Renovation of School Facilities

In accordance with S.C. Code Ann. §59-23-210, all construction, improvement, and renovation of public school buildings and property shall comply with the latest applicable standards and specifications set forth in the South Carolina School Facilities Planning and Construction Guide as published by the South Carolina Department of Education. All construction, improvement, and renovation of public school buildings and property must have plans and specifications submitted to the South Carolina Department of Education’s Office of School Facilities (OSF). Approval of the plans and specifications by the OSF must be received before construction may begin. Plans and specifications must be coordinated with all pertinent county officials, such as traffic engineers and zoning administrators. Pursuant to S.C. Code Ann. §40-3-290(C)(2) and §40-22-280(B)(2) and in accordance with the South Carolina School Facilities Planning and

Construction Guide, a South Carolina licensed design professional is required for all school facility construction and renovation projects.

Pursuant to S.C. Code Ann. §59-40-50, a charter school must adhere to the same health, safety requirements as are applied to public schools operating in the same school district.

S.C. Code Ann. §59-23-220 requires all construction, improvement, and renovation of public school buildings and property must be inspected by OSF for compliance with the applicable codes and standards. A certificate of approval must be obtained from OSF before a building may be occupied.

Additionally, SC licensed design professionals are required for construction and renovation of school facilities (including systems) in accordance with S.C. Code Ann. §40-3-290(C)(2) and 40-22-280(B)(2), and the South Carolina School Facilities Planning and Construction Guide.

Interior finishes must meet the requirements of the South Carolina Fire Code for the type of construction and type of space being constructed or renovated. Using the services of a design professional will ensure that the flame spread of the interior finishes meet the requirements of the code that are summarized in this table. See footnotes of the code reference for more information. (SCFC 803.3)

| Occupancy Group | Sprinklered | | | Unsprinklered | | |
|-----------------|--|--|---------------------------|--|--|---------------------------|
| | Interior exit passageways, ramps, and stairs | Corridors and enclosure for exit access stairs and ramps | Rooms and enclosed spaces | Interior exit passageways, ramps, and stairs | Corridors and enclosure for exit access stairs and ramps | Rooms and enclosed spaces |
| Educational | B | C | C | A | B | C |

8. Fire and Life Safety During Assemblies, Events, and Gatherings

A. Plans

The South Carolina Fire Code (SCFC 403.12.2) requires that, where the *fire code official* determines that an indoor or outdoor gathering of persons has an adverse impact on public safety through diminished access to buildings, structures, fire hydrants and fire apparatus access roads or where such gatherings adversely affect public safety services of any kind, the *fire code official* shall have the authority to order the development of or prescribe a public safety plan that provides an *approved* level of public safety and addresses the following items:

1. Emergency vehicle ingress and egress.
2. Fire protection.
3. Emergency egress or escape routes.
4. Emergency medical services.
5. Public assembly areas.
6. The directing of both attendees and vehicles, including the parking of vehicles.

7. Vendor and food concession distribution.
8. The need for the presence of law enforcement.
9. The need for fire and emergency medical services personnel.

In keeping with the concept that the best response begins with effective planning, it is recommended that a public safety plan be developed for all assemblies, events, and gathering of large crowds. In most cases, only minor adjustments will need to be made for similar events using the same venue.

B. Maximum Occupancy Requirements

The maximum occupancy for any assembly area (auditorium, cafeteria, gymnasium, etc.) should have been determined by the design professional during the design of the building. The maximum occupancy of an assembly area is based on many factors including, but not limited to:

1. The number and size of exits;
2. The functional use of the space;
 - a. Assembly with fixed seating,
 - b. Assembly without fixed seating,
 - c. Classroom area; and
3. The presence of an automatic fire sprinkler system.

Every room or space that is an assembly occupancy shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or the owner's authorized agent. (SCFC 1004.3)

The posted occupant load shall account for the various arrangements and use of the space. For example, a gymnasium may:

1. Be used for basketball games, utilizing only fixed bleachers for occupant seating.
2. Be used for a graduation ceremony, utilizing chairs on the gym floor in addition to fixed bleachers for occupant seating.
3. Be used for prom or a special event, providing an open dance floor (for standing occupants) in addition to tables and chairs for occupant seating.

C. Seating Plans

The South Carolina Fire Code (SCFC 403.2.1) also requires the fire safety and evacuation plans for assembly occupancies to include a detailed seating plan, *occupant load* and *occupant load* limit. Deviations from the *approved* plans shall be allowed provided the *occupant load* limit for the occupancy is not exceeded and the *aisles* and exit access ways remain unobstructed.

D. Announcements

The South Carolina Fire Code (SCFC 403.2.2) requires that in theaters, motion picture theaters, auditoriums and similar assembly occupancies in Group A used for non-continuous programs, an audible announcement shall be made not more than 10 minutes prior to the start of each program to notify the occupants of the location of the exits to be used in the event of a fire or other emergency.

E. Crowd Management

The South Carolina Fire Code (SCFC 403.12.3) requires crowd managers to be provided, where facilities or events involve a gathering of more than 1,000 people. The minimum number of crowd managers required, shall be established at a ratio of one crowd manager for every 250 persons. (SCFC 403.12.3.1)

Where approved by the fire code official, the number of crowd managers shall be permitted to be reduced where the facility is equipped throughout with an approved automatic fire sprinkler system or based upon the nature of the event.

Crowd Managers must receive approved training (SCFC 403.12.3.2). Several online resources are available for approved Crowd Manager training:

- The International Association of Fire Chiefs has a 2-hour online Crowd Manager Training course, which is also endorsed by the National Association of State Fire Marshals. The cost is \$19.95 per person. <https://www.crowdmanagers.com/training>
- The North Carolina Office of State Fire Marshal has a FREE online Crowd Manager Training program. http://www.ncdoi.com/OSFM/Fire_Safety_Programs/Default.aspx?field1=Crowd_Manager_Training&user=Crowd_Manager_Training

F. Security

Event security is paramount to the safety of those attending an event or gathering. Security should be a part of every public safety plan for events and gatherings. Security may be accomplished through many different means, including physical security measures, engineering measures, and as an extension of crowd management.

The use of barriers to control the movement of a crowd or prevent entry to a venue is an example of physical security measures. It is important to note that although barriers may be used to limit, prevent, or control entry to a venue, barriers shall not limit or block exits or egress pathways. For example, a gymnasium may limit entry access to only two of the buildings eight doors by having the doors closed and locked to prevent entry from the outside. However, all exit doors must be openable from the inside, without a key or special knowledge or effort.

Crowd control and security measures may be part of the design of the building. Involving a design professional in the development of security measures, ensures compliance with applicable codes and standards, including the Americans with Disabilities Act. The addition of aftermarket security devices, without the consultation of a design professional or code official may violate the adopted codes and standards and actually create a more dangerous situation in other types of emergencies.

9. Fire and Life Safety Considerations in the Classroom

A. Decorations and Interior Finishes

- i. Artwork and teaching materials shall be limited on walls of classrooms to not more than 50 percent of the specific wall area to which they are attached. (SCFC 807.5.2.3)

- ii. Curtains, draperies, fabric hangings and other similar combustible decorative materials suspended from walls or ceilings shall meet the flame propagation criteria of NFPA 701 or 289 and shall not exceed 10 percent of the specific wall or ceiling area to which they are attached. (SCFC 807.3, 807.4)
- iii. Fire-retardant coatings in existing buildings shall be maintained so as to retain the effectiveness of the treatment under service conditions encountered in actual use. (SCFC 807.2)
- iv. Furnishings or decorative materials of an explosive or highly flammable character shall not be used. (SCFC 807.2). Residential upholstered furniture, bailed vegetation, and excessive amounts of paper, Styrofoam, and similar materials shall not be used.

B. Electrical Safety

- i. Multi-plug extension cords, cube adaptors, and unfused power strips not complying with NFPA 70 shall not be used. Relocatable power taps shall be listed in accordance with UL 1363, plugged directly into an outlet, and shall not be subjected to physical damage. (SCFC 605.4)
- ii. Extension cords shall not be a substitute for permanent wiring. Extension cords and flexible cords shall not be affixed to structures, extended through walls, ceilings or floors, or under doors or floor coverings, nor shall such cords be subject to environmental damage or physical impact. Extension cords shall be used only with portable appliances. (SCFC 605.5)
- iii. Extension cords shall be plugged directly into a receptacle, shall be grounded, maintained in a safe condition, and be sized accordingly to the appliance that they serve. (SCFC 605.5)
- iv. Access to electrical panels and switches must be provided. (SCFC 605.3)
- v. Identified electrical hazards such as open wiring slices or missing outlet, switch, or junction box covers shall be replaced or repaired. (SCFC 605.1)

C. Laboratories

- i. Individual containers of hazardous materials, cartons or packages shall be marked or labeled in accordance with applicable federal regulations. (SCFC 407.3)
- ii. Material Safety Data Sheets (MSDS) for all hazardous materials shall be either readily available on the premises as a paper copy, or where approved, shall be permitted to be readily retrievable by electronic access. (SCFC 407.2)
- iii. Teachers/staff must be familiar with the hazards associated with the materials and processes that are encountered in laboratory environments.

D. Classroom Doors

Classroom and egress doors shall comply with the requirements of Chapter 10, of the 2018 South Carolina Fire Code, as applicable. Specifically, this requires all egress doors be readily openable from the egress side with a single operation, and without the use of a key, special knowledge, or effort. The use of classroom door security and barricade devices do not comply with this requirement and are prohibited.

- i. Security devices affecting means of egress shall be subject to approval of the fire code official. Security devices and locking arrangements in the means of egress that restrict,

control, or delay egress shall be installed and maintained as required by this chapter. (SCFC 1031.2.1)

- ii. Egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort. (SCFC 1010.1.9)
- iii. Manually operated flush bolts or surface bolts are not permitted. (SCFC 1010.1.9.4)
- iv. The unlatching of any door or leaf shall not require more than one operation. (SCFC 1010.1.9.5)
- v. Opening protectives shall be maintained in an operative condition in accordance with NFPA 80. Fire doors and smoke barrier doors shall not be blocked or obstructed, or otherwise made inoperable. (SCFC 703.2)

The use of a barricade device is not proven to provide any added benefit. Instead, it creates a more dangerous situation for classroom occupants. The use of magnets to prevent doors from latching is an issue of convenience rather than security. While there are a few code-compliant door barricade solutions on the market, they are few and far between. The Office of the State Fire Marshal and the OSF should be consulted prior to purchasing any of these devices, to verify their compliance with applicable code requirements. The best policy is to ensure classroom doors are provided with single action locks and to keep the doors closed and locked at all times during school operation. Doors may prevent entering anytime; however, they cannot restrict exiting.

10. Fire and Life Safety Considerations in Hallways and Egress Pathways

A. Decorations and Interior Finishes

- i. Artwork and teaching materials shall be limited on the walls of corridors to not more than 20 percent of the wall area. (SCFC 807.5.2.2)
- ii. Curtains, draperies, fabric hangings and other similar combustible decorative materials suspended from walls or ceilings shall meet the flame propagation criteria of NFPA 701 or 289 and shall not exceed 10 percent of the specific wall or ceiling area to which they are attached. (SCFC 807.3, 807.4)
- iii. Fire-retardant coatings in existing buildings shall be maintained so as to retain the effectiveness of the treatment under service conditions encountered in actual use. (SCFC 807.2)
- iv. Furnishings or decorative materials of an explosive or highly flammable character shall not be used. (SCFC 807.2). Residential upholstered furniture, bailed vegetation, and excessive amounts of paper, Styrofoam, and similar materials shall not be used.

B. Maintaining Clear Egress Pathways

- i. Required exit accesses, exits and exit discharges shall be continuously maintained free from obstructions or impediments to full instant use in the case of fire or other emergency where the building area served by the means of egress is occupied. An exit or exit passageway shall not be used for any purpose that interferes with a means of egress. (SCFC 1031.2)
- ii. Means of egress doors shall be maintained in such a manner as to be distinguishable from the adjacent construction and finishes such that the doors are easily recognizable as doors. Furnishings, decorations or other objects shall not be placed so as to obstruct exits, access thereto, egress therefrom, or visibility thereof. Hangings and draperies shall not be

placed over exit doors or otherwise be located to conceal or obstruct an exit. Mirrors shall not be placed on exit doors. Mirrors shall not be placed in or adjacent to any exit in such a manner as to confuse the direction of exit. (SCFC 1031.6)

11. Points of Entry/Exit

A. Restricted Access and Building Security Recommendations and Best Practices

There are essentially three levels of facility access: campus access, building access, room access. Restricting entry access at these levels provides a multi-layer barrier to protect a school facility against an intruder.

i. Campus Access

The use of physical barriers to restrict campus entry access is an obvious solution. Careful planning, with local first responder agencies, must be part of the process for determining to use physical barriers to restrict campus access. Access for emergency vehicles must be maintained, as required by applicable codes and standards, and to get help to the facility as quickly as possible. (SCFC 503.1, 503.4, 503.5)

ii. Building Access

When it comes to entry and egress, entry access to a building can always be prevented. However, egress or exit from a building cannot be prevented, restricted, or blocked. This would violate the South Carolina Fire Code (SCFC 1031.2, 1031.3), as well as the Americans with Disabilities Act. Most fires that have resulted in high numbers of fatalities, involved limited or restricted exits from a building. Limiting entry access to a main entrance, especially if the entrance is monitored or access-controlled is a standard best practice. This can be accomplished with magnetic locks and a camera system, controlled by the front office.

iii. Room Access

Just like building access, entry access to a room can always be prevented. However, egress or exit from a room cannot be prevented, restricted, or blocked. This would violate the South Carolina Fire Code (SCFC 1031.2, 1031.3), as well as the Americans with Disabilities Act. The easiest way to accomplish restricted entry access to a classroom, is to simply lock the door. This allows the teacher to become the “gatekeeper” to the classroom. Most door barricade devices are not compliant with code or the Americans with Disabilities Act, and are generally not necessary. Studies have shown, that an intruder will not waste time trying to defeat a commonly-locked door. While there are a few code-compliant door barricade solutions on the market, they are few and far between.

B. Maintaining Means of Egress

The South Carolina Fire Code (SCFC 1031.2) states that all required exit accesses, exits, and exit discharges shall be continuously maintained free from obstructions or impediments to full instant use in the case of fire or other emergency where the building area served by the means of egress is occupied. An exit or exit passageway shall not be used for any purpose that interferes with a means of egress.

Exit signs shall be installed and maintained. Decorations, furnishings, equipment or adjacent signage that impairs the visibility of exit signs, creates confusion or prevents identification of the exit shall not be allowed. (SCFC 1031.4)

Means of egress doors shall be maintained in such a manner as to be distinguishable from the adjacent construction and finishes such that the doors are easily recognizable as doors. Furnishings, decorations or other objects shall not be placed so as to obstruct exits, access to exits, egress from exits, or visibility of exits. Hangings and draperies shall not be placed over exit doors or otherwise be located to conceal or obstruct an exit. Mirrors shall not be placed on exit doors. Mirrors shall not be placed in or adjacent to any exit in such a manner as to confuse the direction of the exit. (SCFC 1031.6)

12. Campus Access

Emergency access roads shall be provided for every facility, building or portion of a building hereafter constructed. The emergency access road shall comply with the requirements of the SCFC 503.1 and extend to within 150 feet of all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility. Roads must be at least 20 feet wide and constructed of an all-weather accessible surface. The owner must maintain the access roads to be free and clear of obstructions including parked cars. If the emergency access roads are used for vehicle stacking during times of drop off and dismissal, the curbs should be rolled or smooth to allow cars to pull off the roads to make way for approaching emergency vehicles. The building owner is responsible for installing and maintaining signs and road and curb markings as required by the local fire department and as necessary to prevent obstructions from occurring in emergency access roads. (SCFC 503.)

Attachments

1. Form 4.a – Responsible Party Identification and Contact Form
2. Form 4.b – Monthly Self-Assessment Checklist
3. Table 5.f – Emergency Power Supply System Generator Inspection, Testing, and Maintenance Schedule
4. Form 5 – System Impairment – Fire Watch Procedures and Record Form

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| | | | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|--|--|
| <p>8. Has the Kitchen Hood Suppression System been subject to inspection, testing, and maintenance by a SC Licensed Fire Equipment company within the past 6 months? (Documentation must be maintained on site)</p> | | | | | | | | | | | | |
| <p>9. Is the hood canopy and filters free from excessive accumulations of grease?</p> | | | | | | | | | | | | |
| <p>10. Has the hood canopy, filters, ducts and exhaust fan assembly been inspected and/or cleaned in accordance with the ANSI/KECA C 10 Standard within the past 12 months? (Documentation must be maintained on site)</p> | | | | | | | | | | | | |
| <p>11. Have all fire rated assemblies, including all assessable above ceiling spaces, been inspected and all penetrations and openings maintained to provide the required fire rating and prevent the passage of smoke and fire within the past year? (A record of inspection must be maintained on site)</p> | | | | | | | | | | | | |
| <p>12. Have all fire rated doors and shutters been inspected and maintained in accordance with NPFA 80 within the past 12 months? (A record of inspection must be maintained on site)</p> | | | | | | | | | | | | |
| <p>13. Have all fire and smoke dampers been subject to inspection and test in accordance with Chapter 19 of NFPA 80 at least at the following intervals? 1 year after initial acceptance tests and at least every 4 years after that. (Records of inspection and test must be maintained on site)</p> | | | | | | | | | | | | |
| <p>14. Has all battery operated emergency lighting been subject to an activation test at least once monthly?</p> | | | | | | | | | | | | |
| <p>15. Has all battery operated emergency lighting equipment been subject to an annual 90 minute duration test?</p> | | | | | | | | | | | | |
| <p>16. Has the emergency power supply sytem generator been subject to a weekly inspection of the fuel and fluid levels and general condition of the equipment?</p> | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 28. Are Safety Data Sheets (SDS) readily available and does staff know how to access them? | | | | | | | | | | | | | | |
| 29. Are all classroom and other egress doors readily openable from the egress side with a single operation, and without the use of a key, special knowledge, or effort? | | | | | | | | | | | | | | |
| 30. Are all doors free of barricade/security devices that violate the provisions of the item above? | | | | | | | | | | | | | | |
| 31. Are required exit accesses, exits and exit discharges continuously maintained free from obstructions or impediments to full and instant use in the case of fire or other emergency? | | | | | | | | | | | | | | |
| 32. Are all portable fire extinguishers subject to monthly inspections to verify that they are installed, accessible, and "in the green" ready for use? | | | | | | | | | | | | | | |
| Initials of person responsible for completing the monthly self-assemssmet | | | | | | | | | | | | | | |

Table 5f – Emergency Power Supply System Generator Inspection, Testing, and Maintenance Schedule

| EPSS Maintenance Schedule | | | | | | | |
|---|-------------------|-------|--------|-------|------|-----------|---------|
| Component (as applicable) | Procedure | | | | | Frequency | |
| | Visual Inspection | Check | Change | Clean | Test | Level 1 | Level 2 |
| 1. Fuel | | | | | | | |
| (a) Main supply tank level | | X | | | | W | M |
| (b) Day tank level | X | X | | | | W | M |
| (c) Day tank float switch | X | | | | X | W | Q |
| (d) Supply or transfer pump operation | X | | | | X | W | Q |
| (e) Solenoid valve operation | X | | | | X | W | Q |
| (f) Strainer, filter, dirt leg, or combination | | | | X | | Q | Q |
| (g) Water in system | | X | | X | | W | Q |
| (h) Flexible hose and connectors | X | | R | | | W | M |
| (i) Tank vents and overflow piping unobstructed | | X | | | X | A | A |
| (j) Piping | X | | | | | A | A |
| (k) Gasoline in main tank (when used) | | | R | | | A | A |
| 2. Lubrication System | | | | | | | |
| (a) Oil level | X | X | | | | W | M |
| (b) Oil change | | | R | | | 50 or A | 50 or A |
| (c) Oil filter(s) | | | R | | | 50 or A | 50 or A |
| (d) Lube oil heater | | X | | | | W | M |
| (e) Crankcase breather | X | | R | X | | Q | S |
| 3. Cooling System | | | | | | | |
| (a) Level | X | X | | | | W | M |
| (b) Antifreeze protection level | | | | | X | S | A |
| (c) Antifreeze | | | R | | | A | A |
| (d) Adequate cooling water to heat exchanger | | X | | | | W | M |
| (e) Rod out heat exchanger | | | | X | | A | A |
| (f) Adequate fresh air through radiator | | X | | | | W | M |
| (g) Clean exterior of radiator | | | | X | | A | A |
| (h) Fan and alternator belt | X | X | | | | M | Q |
| (i) Water pump(s) | X | | | | | W | Q |
| (j) Condition of flexible hoses and connection | X | X | | | | W | M |
| (k) Jacket water heater | | X | | | | W | M |
| (l) Inspect duct work, clean louvers | X | X | | X | | A | A |
| (m) Louver motors and controls | X | | | X | X | A | A |
| 4. Exhaust System | | | | | | | |
| (a) Leakage | X | X | | | | W | M |
| (b) Drain condensate trap | | X | | | | W | M |

FIGURE A.8.3.1(a) Suggested Maintenance Schedule for Emergency Power Supply Systems (EPSSs).

EPSS Maintenance Schedule *(continued)*

| Component (as applicable) | Procedure | | | | | Frequency | |
|--|-------------------|-------|--------|-------|------|--------------------|---------------------|
| | Visual Inspection | Check | Change | Clean | Test | W — Weekly | S — Semiannually |
| | | | | | | M — Monthly | A — Annually |
| X — Action R — Replace, if needed | | | | | | Q — Quarterly | Nos. indicate hours |
| | | | | | | Level 1 | Level 2 |
| (c) Insulation and fire hazards | X | | | | | Q | Q |
| (d) Excessive backpressure | | | | | X | A | A |
| (e) Exhaust system hangers and supports | X | | | | | A | A |
| (f) Flexible exhaust section | X | | | | | S | S |
| 5. Battery System | | | | | | | |
| (a) Electrolyte level | | X | | | | W | M |
| (b) Terminals clean and tight | X | X | | | | Q | Q |
| (c) Remove corrosion, case exterior clean and dry | X | | | X | | M | M |
| (d) Specific gravity or state of charge | | | | | X | M | M |
| (e) Charger and charge rate | X | | | | | M | M |
| (f) Equalize charge | | X | | | | M | M |
| 6. Electrical System | | | | | | | |
| (a) General inspection | X | | | | | W | M |
| (b) Tighten control and power wiring connections | | X | | | | A | A |
| (c) Wire chafing where subject to movement | X | X | | | | Q | S |
| (d) Operation of safeties and alarms | | X | | | X | S | S |
| (e) Boxes, panels, and cabinets | | | | X | | S | S |
| (f) Circuit breakers, fuses <i>Note: Do not break manufacturer's seals or perform internal inspection on these devices.</i> | X | X | R | X | X | M | A |
| (g) Transfer switch main contacts | X | | | X | | A | A |
| (h) Calibration of voltage-sensing relays/devices | | X | | | X | A | A |
| (i) Wire insulation breakdown | | | | | X | 5/500 ^a | 3/500 ^b |
| 7. Prime Mover | | | | | | | |
| (a) General inspection | X | | | | | W | M |
| (b) Service air cleaner | | | R | X | | S | S |
| (c) Governor oil level and linkage | X | X | | | | M | M |
| (d) Governor oil | | | R | | | A | A |
| (e) Ignition system — plugs, points, coil, cap, rotor, secondary wire insulation | X | X | R | X | X | A | A |
| (f) Choke setting and carburetor adjustment | | X | | | | S | S |
| (g) Injector pump and injectors for flow rate pressure and/or spray pattern | | | | | X | A | A |
| (h) EPS at minimum of 30% nameplate rating | | | | | X | 3/4 ^c | 3/4 ^c |

FIGURE A.8.3.1(a) *Continued*

EPSS Maintenance Schedule (continued)

| Component (as applicable) | Procedure | | | | | Frequency | |
|---|-------------------|-------|--------|-------|------|--------------------|--------------------|
| | Visual Inspection | Check | Change | Clean | Test | Level 1 | Level 2 |
| (i) Valve clearance | | | | | X | 3/500 ^b | 3/500 ^b |
| (j) Torque bolts | | | | | X | 3/500 ^b | 3/500 ^b |
| 8. Generator | | | | | | | |
| (a) Brush length, appearance, free to move in holder | X | X | | X | | S | S |
| (b) Commutator and slip rings | X | | | X | | A | A |
| (c) Rotor and stator | X | | | X | | A | A |
| (d) Bearing(s) | X | | R | | | A | A |
| (e) Bearing grease | | X | R | | | A | A |
| (f) Exciter | X | X | | X | | A | A |
| (g) Voltage regulator | X | X | | X | | A | A |
| (h) Measure and record resistance readings of windings with insulation tester (Megger) | | | | | X | A | A |
| 9. (a) General condition of EPSS, any unusual condition of vibration, leakage, noise, temperature, or deterioration | X | | | X | | W | M |
| (b) Service room or housing house-keeping | X | | | X | | W | M |
| 10. Restore system to automatic operation condition | X | | | | | W | M |

^a Every 5 years or 500 hours

^b Every 3 years or 500 hours

^c Every 3 years for 4 hours

FIGURE A.8.3.1(a) *Continued*

Handling System Impairments / Fire Watch Procedures

There may be instances when a building or area of a building is left unprotected by a code required fire protection system. This may be due to a planned event, like maintenance or repair to a fire sprinkler system. Or it could be the result of an unplanned event, like a lightning strike that damages the fire alarm system. Regardless of why the system is impaired, the South Carolina Fire Code requires that either the building be evacuated and no longer occupied for any purpose, or that an approved fire watch procedure be put in place. The following guidelines and form is intended to document the owner's intent and responsibility in implementing a fire watch for fire protection system impairments. (SCFC 901.7)

Step 1: The owner must designate an impairment coordinator. The impairment coordinator is responsible for identifying the impairment, initiating the fire watch program, coordinating and procuring the repair of the system, ensuring that all notification and documentation is completed, restoring the system and the operations of the facility back to normal.

Step 2: Notify the local fire department. The fire code requires that the local responding fire department be notified of the impairment right away. Additionally, the local fire department may want to review and approve your fire watch program.

Step 3: Tag the system out of service. Post a sign or tag that indicates that the system is not working correctly, at the fire alarm panel, main sprinkler control valves, FDC, or other locations where impaired equipment might otherwise be assumed to be operational. The sign should provide enough detail about the system impairment that the reader understands the consequences of the impairment.

Step 4: Evaluate conditions and identify any increased risks created by the impairment. This evaluation will assist the impairment coordinator in determining the next steps. If the building will continue to be occupied, the owner, building managers, supervisors, and employees should all be notified of the system impairment, any increased risks, and any behavior changes that must occur as a result of the impairment during normal facility operation and in the event of an alarm or fire.

Step 5: Designate responsible persons to perform a fire watch in the area affected by the system impairment. The fire watch personnel shall have no other duties except to intervene in the absence of the impaired fire protection system in the event of a fire. This may require the fire watch personnel to patrol the building to look for signs of an unwanted fire. It may require the fire watch personnel to have a plan and method to initiate evacuation of the building. The fire watch personnel must have a means to communicate to the fire department (call 911). The fire watch personnel should report only to the designated impairment coordinator. The impairment coordinator is responsible for developing the fire watch plan that describes the specific duties for the fire watch personnel.

Step 6: Document the performance of the fire watch program. This may include activity logs completed by the fire watch personnel. The documentation will serve as proof to the authorities having jurisdiction that the owner is satisfactorily performing the fire watch procedures.

Step 7: Coordinate the repairs of the system. The impairment coordinator shall secure the necessary resources to correct the impairment. When the impairment is planned, all equipment and personnel necessary to make the repair or perform the maintenance should be assembled prior to taking the system out of service. In all cases, design professionals, licensed contractors, and building permits must be secured when required by law, regulation or ordinance.

Step 8: Restore the system to normal conditions. All system tests and inspections must be performed prior to returning the system to normal conditions. After the system is restored to normal, impairment tags and labels may be removed. Next, notify the fire department that the system has been returned to normal. Finally, end the fire watch procedure and maintain all documentation for at least 1 year after the end of the fire watch procedure.

The health and safety of the occupants of a building are always the responsibility of the building owner and operator. The SC Office of State Fire Marshal and the local fire department has the authority to perform and inspection of your facility at any time. Should a required fire protection system be found to be impaired, and an approved fire watch procedure is not being conducted while the building is occupied, the building may be required to be evacuated and posted as an unsafe building and the building owner may be subject to civil or criminal penalties. (SCFC 110, SC Code of Law 23-9-150, 23-9-170)



Fire Protection System Impairment Record

Section 1. Responsible Party

Date and time of impairment: _____

Name of Facility: _____

Address: _____

Impairment Coordinator: _____

Impairment Coordinator's 24 hour phone number: _____

Section 2. Impairment Details

Describe the type of fire protection system impairment: _____

Describe the increased risks created by the impairment: _____

Anticipated duration of the impairment: _____

The building or area affected by the impairment will be:

Unoccupied during the duration of the impairment.

Occupied with the performance of an approved fire watch for the duration of the impairment.

Section 3. Fire Watch Details

Identify the areas of the building included in the fire watch: _____

Identify the persons responsible for conducting the fire watch: _____

Fire watch will include (check all that apply):

- Continuous, systematic surveillance of all areas affected by the impairment.
- Identifying and controlling fire hazards.
- Providing a method to initiate building evacuation.
- Providing a method to notify the fire department of a fire.
- Fire watch personnel shall have no other duties but these listed above.

Describe the communications plan between the fire watch and building occupants: _____

Describe the communications plan between the fire watch and fire department: _____

Describe the documentation requirements to be maintained during the fire watch to demonstrate compliance with the program, typically an activity log. _____

Impairment Coordinator's Signature: _____

Date: _____

4. Restoring Systems to Service:

Repairs will require:

AHJ to approve plans/issue permits: _____

SC Licensed Design Professional: _____

SC Licensed Contractor: _____

Date and time repairs are initiated: _____

Date and time repairs are completed: _____

Date and time fire watch procedures are ended: _____

Note: Inspections and tests of the affected fire protection systems must be approved by the permitting AHJ prior to the end of the fire watch procedure. Removal of impairment tags and labels and the notification to fire department and other responsible parties that the system may be returned to normal must occur prior to the end of the fire watch procedure. Fire watch procedure documentation must be maintained for 1 year after the conclusion of the impairment.

Impairment Coordinator's Signature: _____

Date: _____