

S.C. DEPARTMENT OF LABOR, LICENSING AND REGULATION  
DIVISION OF FIRE AND LIFE SAFETY

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# ANNUAL REPORT 2015 - 2016

CHIEF ROBERT O. POLK  
STATE FIRE MARSHAL



# Division of Fire and Life Safety

141 Monticello Trail  
Columbia, S.C. 29203  
(803) 896-9800

## LLR Deputy Director:

**Robert O. Polk**

The Division of Fire and Life Safety's goal is to make South Carolina safer by providing programs and services to enhance the quality of life for citizens, visitors, and firefighters. The Division consists of the Office of the State Fire Marshal, the S.C. Fire Academy, and the S.C. Emergency Response Task Force.

Chief Robert O. Polk was appointed by S.C. Gov. Nikki R. Haley as the State Fire Marshal effective August 1, 2014. He was also appointed by the Governor to serve on the State Emergency Response Commission. By S.C. Code of Laws, the State Fire Marshal also serves as the following: ex-officio member on the S.C. Manufactured Housing Board, chairman of the Firefighters Mobilization Oversight Committee, consultant to the Board of Pyrotechnic Safety, and staff support to the Liquefied Petroleum Gas Board.



The Office of State Fire Marshal is comprised of Community Risk Reduction, Inspection Services, Engineering Services, Licensing and Permitting, and Emergency Medical Services Training.

The S.C. Fire Academy, per S.C. Code of Laws (23-10-10), is operated for the express purpose of educating and training the state's paid, volunteer, and industrial fire service personnel. The Fire Academy also provides leadership, guidance, and services to help the fire service carry out its responsibilities at the local level.

The role of the S.C. Emergency Response Task Force (SCERTF) is to assist local, regional, and state governments in times of need. The Task Force assists by providing subject matter experts, guidance, and on-scene professional resources during disasters or emergencies that overwhelm local resources. The Task Force provides responses to all phases of firefighting, structural collapse, helicopter rescue, water rescue, and hazardous materials incidents. This response can range from sending two specific field experts to providing hundreds of firefighters to assist in a large-scale disaster. In addition, the SCERTF supports LLR's role in emergency support functions within the State Emergency Response Plans and day-to-day operations.

## OFFICE OF STATE FIRE MARSHAL

### State Fire Marshal:

**Robert O. Polk**

The Office of State Fire Marshal, per S.C. Code of Laws (23-9-10), has regulatory responsibility to ensure compliance with state fire safety regulations. This is accomplished through inspection activities by deputy state fire marshals in the field, code consultation, and plans review services provided by the Engineering Services section.

**Firefighter Registration:** S.C. State Fire, per S.C. Code of Laws (40-80-10), is also responsible for the registration of South Carolina firefighters. By law, firefighters employed on or after July 1, 2001, must register and complete a name-based criminal records check. In FY 2016, the Office requested and processed 2,959 State Law Enforcement Division background checks. In comparison, 2,605 background checks were performed in FY 2015.

## **FIRE PORTAL**

**Fire Portal:** In order to provide fire department personnel with a streamlined registration system, a user-friendly online database known as the "Fire Portal" currently reports 545 fire departments with nearly 17,800 firefighters. This "one stop shop" allows fire chiefs (and assigned administrators) to electronically submit SLED background checks, file mandatory

reports (quarterly inspections and annual fire equipment certificate), update rosters, and revise Firefighter Mobilization records. The Fire Portal is also a tool for fire department training officers as they are able to approve/register firefighters for classes, run selected performance reports, and view a complete training schedule. Once an email is provided for login access, an individual firefighter is able to view available courses, sign up for a class, and view a current Academy transcript.

Fire Portal Usage		
Year	Individual Users	Number of Fire Departments
2016	7500	470
2015	5100	469

**Reporting Local Inspections:** Quarterly inspections are conducted by local fire departments, and the total numbers are reported via the online Fire Portal. These reports, per S.C. Code of Laws (23-9-310), are due Dec. 31 (of previous year), March 31, June 30, and September 30 of current year. During the 2016 reporting period, the total number of occupancies inspected was 118,428.

**Annual Fire Equipment Report Statistics:** Per S.C. Code of Laws (23-9-310), in order to receive One Percent funding, a qualified fire department must submit an annual fire equipment certificate. This information is submitted via the online Fire Portal and has four separate categories: Fire department information (address, population coverage, water source, etc), S.C. Firefighters’ Association membership verification and other data (fund balance), Firefighter information (updated roster), and Apparatus information.

In FY 2016, \$700 million (estimated) in equipment was reported:

Equipment Type	Total Number	Total Estimated Value
Aerial/Ladder/Platform	242	\$126,904,235.62
Ambulance	83	\$9,565,743.00
ATV/UTV	73	\$800,420.00
Boat	90	\$3,899,307.45
Brush Truck	545	\$18,973,967.86
Breathing Air Truck	48	\$5,286,606.00
Engine (Structural)	1794	\$387,274,382.30
Rescue	339	\$48,404,430.44
Staff Vehicle 4WD	318	\$8,997,129.39
Crew Transport	49	\$983,939.00
Tanker/Tender	585	\$71,209,768.61
Rehab Truck	32	\$1,521,505.00
Mobile Command/Communications Post	51	\$2,156,196.00
Other	301	\$14,036,366.29
<b>TOTAL:</b>		<b>\$700,013,996.96</b>

**One Percent Fund:** This fund, which is commonly referred to as “one-percent money,” is a one-percent tax collected on fire insurance premiums written in the state. To obtain these funds, fire departments must submit quarterly inspection reports and annual fire equipment certificates to this Office. In 1907, the S.C. General Assembly passed the Firemen’s Insurance and Inspection Fund Act (see S.C. Code of Laws 23-9-310) for “the betterment and maintenance of skilled and efficient fire departments within the county.” After reports are received and verified, the qualifying information is provided to applicable county treasurers. The money is then distributed by each county treasurer to qualified fire departments based on the percentage of the total assessed value of the county that constitutes the fire department’s response or coverage area. By law, fire departments must spend one-percent money in one of three categories: retirement and insurance, training and education, or recruitment and retention.

**Social Media:** Using our “SC State Fire” Twitter account the Division provides informative updates to interested followers. The account currently has more than 900 followers (an increase of almost 300 followers since its FY 2015 inception) with the majority being fire departments, chiefs, firefighters, media outlets, and other state agencies. The Twitter account also allows the Division to follow almost 200 Twitter accounts consisting of South Carolina fire departments, state, and federal agencies as well as media outlets. During the eight-week recruit school, training photographs and videos (GIFs) are showcased using the Twitter account.

**SC State Fire**  
 @SCStateFire  
 Official Twitter account of South Carolina Division of Fire and Life Safety - home of the Fire Marshal's Office, State Fire Academy, and SC-TF1. #fireportal  
 Columbia, SC  
 scfiremarshal.llronline.com



**Volunteer Incentive Program (VIP):** Additionally, per S.C. Code of Laws (23-9-190), this Office compiles Volunteer Incentive Program (VIP) certification team reports for “Qualified Rescue Squads” and “HAZMAT Teams” and submits them to the S.C. Department of Revenue. In FY 2016, the OSFM reported the following (2014 and 2015 provided for comparison) number of members.

Year	Qualified Rescue Squad members	HAZMAT Team members
2016	559	85
2015	687	93
2014	799	111

**Division Logo:** To boost recognition and present a fresh image, a new logo was designed in-house and approved by the Governor’s office in FY 2015. The five-pointed gold star enclosed in a red circle has been in use since May 1, 2015, and replaces the original solid gold star.



**State Agency Partnerships:** To provide assistance, the Division also partners with several other state agencies. These include:

- Department of Administration – Inspection of existing state buildings
- Department of Commerce – Consultation with new business enterprises
- Department of Corrections - Assistance to inspect prisons/detention centers; provides inmate labor Department of Disabilities and Special Needs- Plan reviews and inspection of licensed facilities
- Department of Education’s Office of School Facilities – Provide inspections for new construction and public school renovations
- State Engineer’s Office – Review of sprinkler plans
- EdVenture Museum - Provide personnel and program support
- Emergency Management Division – Assist with development of State Emergency Operation Plan
- Department of Health and Environmental Control – Collaborate with HazMat mitigation and a pediatric disaster management project.
- Department of Social Services - Inspection of foster homes

## Community Risk Reduction

**Section Chief:**

**Tim Wojcik**

The Office of State Fire Marshal is responsible for programs designed to educate and enhance public awareness of fire safety and community risk reduction efforts. The Community Risk Reduction (CRR) team manages the Fire Marshal’s initiatives surrounding community risk reduction and data management. This section also continues to coordinate the Community Loss Education and Response (CLEAR) Team.

Major program areas include:

- Public Fire and Life Safety Education Delivery
- Data Collection and Management
- Fire Incident Research and Investigation
- Major Incident Support
- Smoke Alarm Installation
- Quarterly Public Fire and Life Safety Educator Training

To provide fire and life safety programs for school and family audiences, the Division and EdVenture Children's Museum continue its partnership. This arrangement allows LLR to provide personnel and program support for Dalmatian Station and Home Safe Home (a fire safety exhibit) within EdVenture. State Fire staff members are responsible for program development, delivery, and outreach activities. In FY 2016, risk reduction messages were shared with 2,623 adults and 7,048 children during direct delivery of Community Risk Reduction programs.

For example, “Little Sparks” is an interactive program designed for children up to seven years old and teaches how to recognize and respond to the most common causes of residential fires. Another program, “Burning Questions” teaches children eight years old and older the chemistry of fire. The program uses six scientific experiments to demonstrate the properties of fire.

### **CLEAR Team**

Every fatal fire in South Carolina is researched by a State Fire CLEAR staff member. The CLEAR team is comprised of several duty chiefs (weekly rotation), as well as a statistical research analyst, community risk reduction curriculum specialist, fire researcher, and the State Fire Marshal. Afterwards, to develop programs to better address South Carolina’s fire fatality problem, aggregate information is shared quarterly with the team and other stakeholders.

### **Fire and Life Safety Educator’s Quarterly Training**

To provide ongoing, high-quality training to community risk reduction and fire and life safety educators, CRR conducts Fire and Life Safety Educator’s Quarterly training sessions. These six-hour sessions are interactive and often include subject matter experts from other disciplines. Each session provides attendees with continuing education credits that meet the job performance requirements of NFPA 1035 that, in turn, assists their fire department with earning maximum ISO scale credit in the CRR category. In FY 2016, CRR trained 103 quarterly attendees.

In FY 2016, the Community Risk Reduction Working Group continued meeting with the goal of advising and collaborating with the Office of State Fire Marshal in regard to Community Risk Reduction efforts and campaigns. Members of the working group include representatives from the S.C. Firefighters’ Association, the S.C. EMS PIER Team, S.C. FALSE, S.C. Fire Marshals’ Association, American Red Cross, S.C. Office on Aging, S.C. Office of Rural Health, Palmetto State Teachers’ Association, EdVenture Children’s Museum, and S.C. Safe Kids.

## Fire Fatalities

State law requires the Fire Marshal’s Office to collect and analyze data on fire fatalities. In FY 2016 (chart below), there was a decrease in the number of fire deaths (67) compared to the previous year (93). The average age of those who died in fires was 55, and the majority of the fire victims (67 percent) were older than 50. Additionally, October 2015 was the deadliest fire fatality month with 13 victims, compared to two fire fatalities in September 2015.

South Carolina Fire Fatalities		
	FY 2016	FY 2015
<b>Number of Fire Fatalities</b>	67	93
<b>Average Age</b>	55 years	52 years
<b>Percent older than 50 years</b>	67 percent (45 victims)	60 percent (56 victims)
<b>Percent between 20-50 years</b>	21 percent (14 victims)	27 percent (25 victims)
<b>Percent younger than 20</b>	12 percent (8 victims)	12 percent (11 victims)
<b>Percent Male</b>	60 percent	66 percent
<b>Number of Fatal Fire Incidents</b>	60	76
<b>Number of Multiple Fire Fatalities</b>	7 incidents	15 incidents
<b>Highest Fire Fatalities by Month</b>	October 2015 (13 victims)	December 2014 (18 victims)
<b>Lowest Fire Fatalities by Month</b>	September 2015 (2 victims)	September 2014 (1 victim)
<b>Number of Residential Fires</b>	55 residential fire fatalities	78 residential fire fatalities

Data collection is accomplished through the National Fire Incident Reporting System (NFIRS) and used by South Carolina fire departments. After a fire department responds to an incident, a statistical report is completed. These statistics are analyzed by county, cause, presence of a smoke alarm, age of fire death victim, and type of structure. This statistical information represents information provided by more than 400 participating fire departments through the Fire Incident Reporting System.

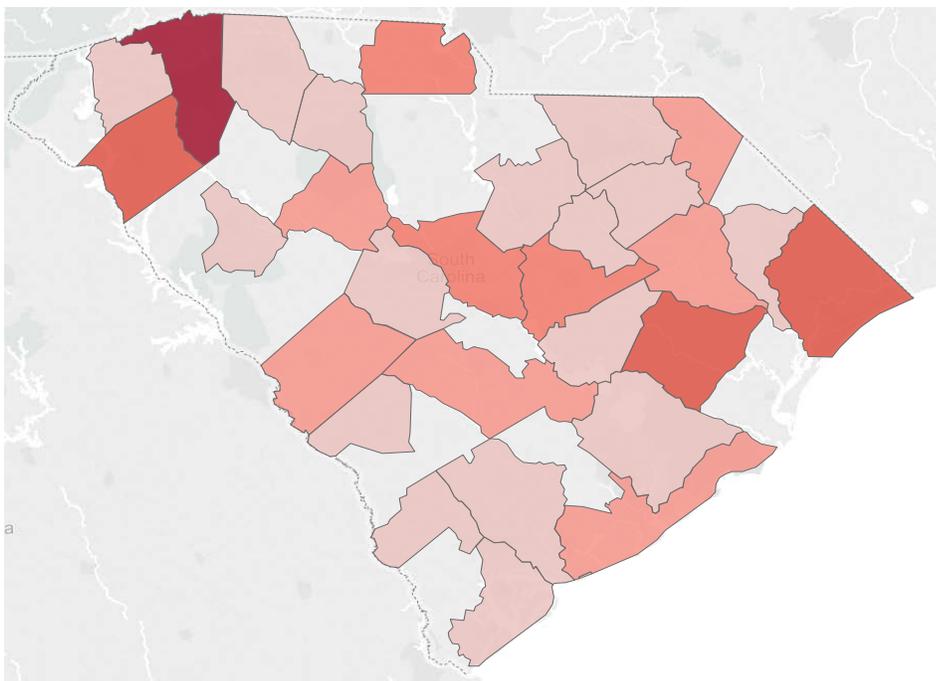
The map reflects FY 2016 fire fatalities by county. Greenville County had the highest total of fire fatalities at six. Additionally, 29 counties had at least one fire fatality.

Although not reflected on the map, 29 fire fatalities occurred in homes with no smoke alarm present. CRR records indicate 27 citizens died while attempting an escape, and another seven while sleeping. As a result, the Division has continued two safety campaigns - “Get Out and Stay Out” and “Shut the Door.”

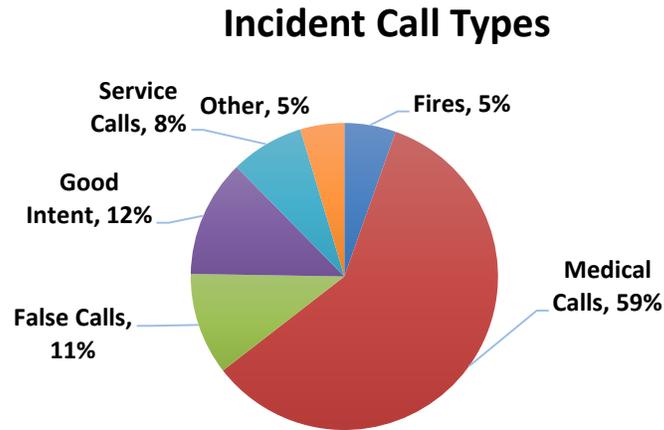
There were 279,488 incidents reported accounting for a property loss of more than \$130 million. The Division’s CLEAR Team responded and assisted fire departments with many of these fire fatalities and large loss fires.

Data management programs continue to expand beyond simple maintenance of National Fire Incident Reporting Systems.

Data management is also involved in fire service related research. CRR has the ability to assist fire departments with data analysis, GIS mapping, and quality control. In FY 2016, CRR impacted 261 fire departments, through training, answering questions and analysis requests, and helping build NFIRS programs in local departments where there previously were none. A standard operating guideline was implemented to provide local departments a baseline of how, when, and what to report to the State NFIRS Program.



This chart reflects a percentage of total incidents by call type. For example, EMS (medical) incidents are almost 60 percent of calls, and 11 percent are false alarms. Five percent of incidents were fires, which caused more than \$120 million in damages to property and contents. Of that amount, nearly \$2.5 million is attributed to intentionally ignited fires.



Significant fires with property loss estimates greater than \$1 million have an impact on communities and local economies. The chart below reflects the significant FY 2016 fires listed by the date of the incident, city, property type, and dollar loss.

Date	City	Property Type	Dollar Loss in Millions
July 19, 2015	Port Royal	Restaurant or cafeteria	1.5
July 20, 2015	Aiken	Multi-family dwellings	1.3
July 29, 2015	Greenville	Manufacturing, processing	2
October 16, 2015	Columbia	Open land or field	1
December 13, 2015	North Charleston	Manufacturing, processing	2
March 9, 2016	Green Pond	1 or 2 family dwelling	1.6
April 9, 2016	Mt. Pleasant	1 or 2 family dwelling	1.3
May 11, 2016	Cayce	1 or 2 family dwelling	1
June 16, 2016	Pawleys Island	Multi-family dwellings	1

### Fire Prevention Grants and Partnerships

In order to improve lifesaving educational initiatives across South Carolina, the Community Risk Reduction Team has spearheaded multiple partnerships. Additionally, multiple grant opportunities have made it possible to improve the impact of the following lifesaving efforts:

- The **Autism Spectrum Disorder (ASD) Emergency Planning Research Project** is a collaborative effort between the State Fire Marshal’s office and the University of South Carolina, College of Nursing. This research project challenges the literacy levels and validity of current ASD fire and life safety messaging. It has a strong focus on providing recommendations for improvements to these messages which will be utilized across the United States to provide ASD caregivers the right tools to protect the ASD individual from fire injury or death. The initial findings are expected to be released in late 2016.
- The **Carbon Monoxide Awareness Training** project is an educational partnership between the Jeffrey Lee Williams Foundation, the Batesburg-Leesville Fire Department, and the Division of Fire and Life Safety. This partnership will produce two online educational modules. Module one is designed for the public to learn about and mitigate the dangers of carbon monoxide in their homes. Module two is designed for first responders to learn about detecting and mitigating carbon monoxide incidents, as well as recognizing the signs and symptoms of carbon monoxide exposure during medical calls for service. Both modules are expected to be released in FY 2017.

- The State Fire Marshal’s office is a partner with the **Home Fire Preparedness Campaign** - an American Red Cross program. One of the major goals is to install 50,000 smoke alarms in homes across South Carolina from 2015-2017. During FY 2016, the program installed more than 20,000 smoke alarms in S.C. homes. The State Fire Marshal’s office continues to provide technical expertise in the area of education and logistics.
- Several entities including the State Fire Marshal’s office, S.C. Association of Fire Chiefs’, Vision 20/20, and multiple local fire departments have partnered to bring the **Home Fire Safety Patrol – Sound Off** program to this state. The program provides educationally viable fire and life safety messages, and smoke alarm installations, to second and third graders living in the areas where the highest risk of injury or death from fire exists. The program also utilizes local firefighters and teachers to provide this education. To assure the fire and life safety messages are effectively delivered, pre- and post-testing will take place. The program is expected to begin in FY 2017.
- The Office of State Fire Marshal, the S.C. State Association of Fire Chiefs’, and multiple local fire departments through the Michigan Public Health Institute from DHS/FEMA’s Grant Program Directorate and the Assistance to Firefighters Grant Program – Fire Prevention and Safety Grants will partner to deliver the **1,000 Smoke Alarm Program** to the highest risk areas in S.C. where injury or death from fire is most likely. In addition, the program will provide assistance to participating fire departments in the development of a “Home Fire Inspection Survey” that will place firefighters in the homes they protect to educate residents about reducing the risk and impact of fires. Additionally, participating departments will receive education for their staff in the area of current public risk reducing fire messaging and smoke alarm technology. The program is grant funded by Vision 20/20 and is expected to be completed by August 2017.

### Community Risk Reduction Research Projects

The Community Risk Reduction section recognizes the importance of evidence-based decision making, resulting in a better focus of effort and resources to where the highest-risk communities are located. With the help of data collected by local fire departments, South Carolina can be at the forefront of fire science and research within the next few years.

A large-scale project is being developed to identify the causes of elderly fire fatalities and will begin in FY 2017. With this project, select local departments will complete a questionnaire to determine several human factors and code issues that may have prevented the survivability of a single-family dwelling fire. As victims over the age of 50 consistently represent two-thirds of fire fatalities in S.C., this research project will identify where to target the message to reduce the number of fatalities in home fires.

As more research projects are being implemented, local fire departments are eager to work closely with and align themselves in mission with the State Fire Marshal. More fire departments are taking a preventative approach, which starts with ample data collection, partnerships with neighboring districts and agencies, and educating communities to keep them fire safe.

FY 2016 Staff Related Information	
Staff Positions	Number of Personnel (5)
Community Risk Reduction Program Manager	1
Statistical Research Analyst	1
Curriculum Coordinator	1
Community Risk Reduction Program Assistants (Temp/PT)	2

### Code Enforcement & Fire Marshal Training

**Section Chief:** Shawn Stickle

This section performs fire and life safety inspections for state buildings, public schools, fire equipment dealers, outdoor and indoor fireworks displays, Liquefied Petroleum gas, explosive magazines, contractual obligations, at the request of local officials. It also provides fire marshal training and certification to employees of local and state governments who perform fire inspection duties certified in accordance with S.C. Code of Laws 23-9-30.

Fire and Life Safety Inspection Statistical Information					
Inspection Statistic	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Inspections Per Deputy SFM (average)	970	947	840	873	855
Inspections Completed by Deputy SFMs	14,549	11,361	10,923	11,355	11,118
Total Violations Cited	7,804	4,284	5,265	7,875	8,521

The Code Enforcement Section focuses on conducting fire and life safety inspections throughout the state in various occupancies and conducting specialized inspections related to facilities obtaining state licenses or permits from the Office of State Fire Marshal and other state agencies.

FY 2016 Total Inspections per County (Top Five)	
County	No. of Inspections
Richland	1,281
Greenville	1,094
Spartanburg	653
Charleston	622
Lexington	574

During FY 2016, there were 35 fire marshal-related courses delivered to 1,439 students, composed of design professionals and building officials. These courses are delivered at the Academy, and regionally throughout the state, and provide required continuing education hours and a mechanism to improve statewide consistency of code interpretation and enforcement. There were more than 650 active certified fire marshals performing inspections in their local jurisdictions.

FY 2016 Fire Marshal Training and Certification			
Fire Marshal Training and Certification	FY 2014	FY 2015	FY 2016
ICC Fire Marshal Training Attendees	75	76	44
NFA Fire Inspection Principles (80 hours) Attendees	N/A	N/A	16
Fire Marshal Quarterly Training Courses	24	33	32
Quarterly Fire Marshal Training Attendees	1,194	1,375	1,347
Number of Certified Fire Marshals	620	655	666

FY 2016 Statistical Staff-Related Information	
Staff Positions	Number of Personnel (15)
Chief Deputy State Fire Marshal	1
Senior Deputy State Fire Marshals	3
Senior Deputy State Fire Marshal of Training	1
Deputy State Fire Marshals	10

## Engineering Services

**Section Chief:** David Blackwell, P.E.

The Engineering Services Section provides technical assistance and consultation services to design professionals, state officials, local building and fire officials, contractors, builders, building owners, and the public. Staff is responsible for plan reviews of: buildings, fire sprinkler systems, fire alarm systems, aboveground storage tank (AST) motor vehicle fuel storage and dispensing systems at retail service stations, liquefied petroleum gas (LP Gas) storage tank installations, and other reviews, as necessary, to assist design professionals, other state Authorities Having Jurisdiction (AHJs), local AHJs, and resident fire marshals (see S.C. Code of Regulations, Chapter 71, Article 8). Staff also assists other Agency divisions with special projects, research, and development of future regulations and state statutes.

FY 2016 Staff Related Information	
Staff Positions:	Number of Personnel (6)
Chief Engineer	1
Engineer	1
Engineering Associates	3
Administrative Assistant	1

## FY 2010 – FY 2016 Statistical Information

TYPE OF PLAN REVIEW	Fiscal Year/Number of Plan Review Projects*						
	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Building fire & life safety	14	12	6	6	6	7	10
Fire alarm system	2	6	5	4	1	1	0
AST fuel storage and dispensing systems	0	1	3	3	0	1	1
Alternate extinguishing system	0	0	4	2	0	0	0
LP-gas system	5	30	35	12	11	9	7
Fire protection sprinkler system – aboveground	492	574	641	646	602	648	699
Fire protection sprinkler system – underground	128	121	144	172	149	128	258
Hydrogen facility	0	2	0	0	3	1	3
<b>Total number of plan review projects</b>	<b>641</b>	<b>746</b>	<b>838</b>	<b>845</b>	<b>772</b>	<b>795</b>	<b>978</b>

### Developments, Activities, and Select Accomplishments:

In FY 2016, new equipment was acquired to improve processing of plans. These include high definition TV screens, to display electronic plans at the scale they were intended to be viewed, and more powerful desktop computers to improve capabilities of staff to conduct plan reviews faster and more accurately and provide better customer service.

The chief engineer continues to serve on the S.C. Building Codes Council. He also works with various LLR and OSFM staff to draft revised State Fire Marshal's Rules and Regulations which were submitted to the legislature and became effective in FY 2016. Among the many improvements in the revised regulations are refinements to foster homes requirements to improve upon the changes made in FY 2015. Changes are designed to provide appropriate fire safety requirements, with certain options, to facilitate compliance and assist the South Carolina Department of Social Services in its goals to reduce obstacles to child placements.

Staff continues to participate in a State Design Professionals Group and relate and discuss matters of common interest to state employees in the design and construction industry, including legislation, laws, regulations, codes, standards, and interpretations. The chief engineer also works with the Board of Registration for Professional Engineers and Land Surveyors to clarify the practice of engineering with regards to fire protection systems; to clarify the application of building codes and their requirements; and, to advise the Board on planned revisions to their regulations.

The chief engineer, along with select staff,:

- Participates in the Building Codes Council and International Code Council code development processes.
- Continues to assist the State Department of Education on various matters related to fire and life safety in public schools.
- Continues to grow and develop in their positions benefitting from multiple formal training and educational opportunities.

Staff continues to participate in Board meetings, and, when appropriate, provide Boards with relevant information and address matters of concern.

Lastly, to improve plan review services, staff continues to identify and investigate multiple technology, process, and policy solutions. Some of these technological solutions are planned to be purchased, researched, developed, and/or implemented in FY 2017 to improve: the electronic storage and communication of plan review documentation and results; data collection, analysis, and reporting; and instructional/educational services for customers.

## Licensing and Permitting

### Section Chief:

**Ray Hoshall**

This section is tasked with: the licensing and permitting responsibilities statewide for Liquid Petroleum (LP) gas installers, resellers, and cylinder exchange facility dealers; LP gas employees; public fireworks displays; proximate audience fireworks displays; individual pyrotechnic operators and trainees; the storage, use, sale, and manufacturing of explosives; individual blaster employees; and fire equipment dealers and employees. It also evaluates cigarette manufacturers' certifications, issues approvals, and performs random testing and compliance inspections.

In April 2016, the L&P Section transferred the administration and support function for the S.C. Board of Pyrotechnic Safety to the LLR POL Section, and in September 2016 (anticipated), the administrative and support function for the S.C. Liquefied Petroleum Gas Board will also be transferred to POL. Permitting inspections for these two POL Boards continue to be conducted by the OSFM.

FY 2016 Staff Related Information	
Staff Positions	Number of Personnel
Chief of Licensing and Permitting	1
Administrative Assistants	2
<b>Mailing Address:</b>	141 Monticello Trail, Columbia, SC 29203
<b>Telephone:</b>	(803) 896-9800
<b>Administrator:</b>	Ray Hoshall Ray.Hoshall@llr.sc.gov

The L&P Section verifies each blaster is certified to engage in the sale, use, or storage of explosives. Additionally, blasting permits are obtained before anyone is authorized to perform any blasting or to use any explosives for demolishing a structure, blasting out rock, earth or any other substance or material. Permits are issued for permanent and mobile explosive magazines. Licenses for the sale of explosives are also issued.

<b>Explosives Control Act / Blasters</b>	
<b>Website:</b>	<a href="http://www.scfiremarshal.llronline.com">http://www.scfiremarshal.llronline.com</a>
<b>S.C. Code of Laws:</b>	23-36-10, et. seq.
<b>Regulation:</b>	71-8302, et. seq.
<b>Licensure Information:</b>	
<b>Licensure Period:</b>	Annually 12/31
<b>Endorsement/Reciprocity Accepted:</b>	No
<b>Licensee Population Trend:</b>	Increasing
<b>Type of Exam:</b>	State exam on S.C. statutes, rules and regulations and NFPA Codes
<b>Statistical Information FY 2016</b>	
<b>Licensee Category:</b>	
Blasters Licensed (individuals performing blasting operations)	139
Blasting Permits Issued (specific location permits to blast)	180
Explosive Magazine Permits Issued (storage of explosive materials)	313
Explosive Dealers (sellers of explosive materials)	6
Explosive Magazine Inspections Conducted	62

The L&P Section verifies firms and personnel in the portable fire extinguishers and fixed engineered and pre-engineered fire protection systems business are properly trained. For example, since water spreads most commercial kitchen fires instead of extinguishing them, wet chemical systems are used to provide protection against hot grease and prevent fire from spreading. These wet chemical systems must be properly installed by a licensed company and permitted employee.

<b>Fire Equipment Dealer Licensure</b>	
<b>Website:</b>	<a href="http://www.scfiremarshal.llronline.com">http://www.scfiremarshal.llronline.com</a>
<b>S.C. Code of Laws:</b>	23-9-45
<b>Regulation:</b>	71-8303 et seq.
<b>Licensure Information:</b>	
<b>Licensure Period:</b>	Biennially
<b>Endorsement/Reciprocity Accepted:</b>	No
<b>Licensee Population Trend:</b>	Increasing

<b>Type of Exam:</b>	State exam on S.C. statutes, rules and regulations and NFPA Codes
<b>Statistical Information FY 2016</b>	
<b>Licensee Category:</b>	
Fire Equipment Company Licenses Issued	150
Fire Equipment Employee Permits Issued	724
Fire Equipment Company Inspections Conducted	4

To reduce the likelihood of cigarettes becoming an ignition source for upholstered furniture, mattresses, and bedding, cigarettes sold in South Carolina must meet certain criteria. As each cigarette must be properly marked "FSC," this Section evaluates manufacturers' certifications, issues approvals, and performs random testing and compliance inspections.

<b>Reduced Cigarette Ignition Propensity Standards and Firefighter Protection</b>	
<b>Website:</b>	<a href="http://www.scfiremarshal.llronline.com">http://www.scfiremarshal.llronline.com</a>
<b>S.C. Code of Laws:</b>	23-51-10, et. seq.
<b>Licensure Information:</b>	
<b>Licensure Period:</b>	Triennially
<b>Manufacturers Holding S.C. FSC Certification</b>	41
<b>Brand Styles of Cigarettes Certified</b>	1,210

LP gas is a flammable mixture used in heating and cooking appliances and vehicles. This Section utilizes deputy state fire marshals to conduct on-site facility inspections and verify employees are qualified to work with this type of flammable material.

<b>Liquid Petroleum (LP) Gas Board</b>	
<b>Website:</b>	<a href="http://www.llr.sc.gov/POL/LPgas/">http://www.llr.sc.gov/POL/LPgas/</a>
<b>Board Established:</b>	1999
<b>S.C. Code of Laws:</b>	40-82-5, et. seq.
<b>Regulation:</b>	71-8304, et. seq.
<b>Board Member Slots:</b>	7 (No vacancies)
<b>How appointed:</b>	Appointed by the Governor
<b>Board Meetings:</b>	At least annually (as called by Chairman)
<b>Licensure Information:</b>	
<b>Licensure Period:</b>	Biennially
<b>Endorsement/Reciprocity Accepted:</b>	No
<b>Licensee Population Trend:</b>	Stable
<b>Type of Exam:</b>	State exam on S.C. statutes, rules and regulations and NFPA Codes
<b>Statistical Information FY 2016</b>	
<b>Licensee Category:</b>	
Companies licensed to provide LP Gas Operations	815
Individuals permitted to perform LP Gas Operations	926
LP Gas Inspections Conducted	98

Explosions, flashes, smoke, flames, fireworks, and other pyrotechnic-driven effects are often used in the entertainment industry (i.e. concerts, football games, theatrical performances). The Licensing and Permitting Section (L&P) is tasked with promoting safety of the public and the environment by the effective regulation of this profession to include on-site inspections.

Additionally, certain times of the year (New Year’s Eve and July 4) are traditionally celebrated by using fireworks, which may be sold and used in South Carolina. This Section is tasked with inspecting temporary (90-day) or annual firework stands/stores, as requested by the Board of Pyrotechnic Safety. Prior to opening, these stands/stores must be inspected by a deputy state fire marshal.

**NOTE:** In April 2016, the L&P Section transferred the administration and support function for the S.C. Board of Pyrotechnic Safety to the LLR POL Section.

<b>Board of Pyrotechnic Safety (From July 1 – April 30, 2016)</b>	
<b>Website:</b>	http://www.llr.sc.gov/POL/Pyrotechnic/
<b>S.C. Code of Laws:</b>	40-56-1, et. seq.
<b>Regulation:</b>	71-8305, et. seq.
<b>Board Member Slots:</b>	7 (1 vacant position)
<b>How appointed:</b>	Appointed by the Governor
<b>Board Meetings:</b>	At least annually (as called by Chairman)
<b>Licensure Information:</b>	
<b>Licensure Period:</b>	Operators: Biennially Retail Sales: Annually Temporary Sales: 90 days from date of issue
<b>Endorsement/Reciprocity Accepted:</b>	No
<b>Licensee Population Trend:</b>	Increasing
<b>Type of Exam:</b>	State exam on S.C. statutes, rules and regulations and NFPA Codes
<b>Statistical Information FY 2016</b>	
<b>Licensee Category:</b>	
<b>Professional Fireworks Related</b>	
Pyrotechnic Operators Licensed	94
Pyrotechnic Trainee Operators Licensed	57
Public Fireworks Display Permits Issued	241
Proximate Audience Fireworks Display Permits Issued	32
Public Fireworks Display Inspections Conducted	9
Proximate Audience Fireworks Inspections Conducted	2
<b>Consumer Fireworks Related</b>	
Wholesaler/Storage Licenses Issued	N/A
Jobber Licenses Issued	N/A
Retail Sales Licenses Issued (temporary and annual)	N/A
Retail Sales Fireworks Inspections Conducted	2,098
Wholesale/Storage/Jobber Fireworks Inspections Conducted	N/A

## **EMERGENCY MEDICAL SERVICES TRAINING**

**Section Chief: Justin McConnell**

The EMS Training Section was created in FY 2015, reporting directly to the State Fire Marshal. In FY 2016, supervision was transferred to the newly created State Fire Executive Officer position. According to the S.C. Department of Health and Environmental Control (DHEC), an increasing number of credentialed pre-hospital providers (EMT-B, EMT-I/A and EMT-P) are associated primarily with a fire department. In FY 2016, a full-time education coordinator was hired and work began on innovative training programs such as a hybrid online/classroom Emergency Medical Responder course and an “inverted classroom” EMT Basic program.

The EMS Section coordinates CPR and First Aid classes for the Academy recruit program and, in FY 2017, will offer several catalog courses. In FY16, 170 students were trained in CPR, First Aid, or Blood Borne Pathogens. The section is also involved in multiple EMS

related committees in the state. These include “EMS for Children” assisting DHEC with a project focusing on pediatric disaster management.

The EMS Programs Working Group continues to advise and support the development of EMS training programs. It has representation from the South Carolina Firefighters’ Association, EMS Association, EMS Educators Association, Private Ambulance Providers Association, and the Carolinas Hospital System.

FY 2016 Staff Related Information	
Staff Positions	Number of Personnel (2)
EMS Education Coordinator	1
Medical Control Physician (Temp/PT)	1

## STATE FIRE ACADEMY

**141 Monticello Trail  
Columbia, South Carolina 29203  
(803) 896-9850**

**Superintendent:**

**Ken Kerber, Assistant State Fire Marshal**

The Fire Academy’s mission, per S.C. Code of Laws 23-10-10, is to provide statewide training for South Carolina fire service personnel: paid, volunteer, airport crash rescue firefighters, industrial fire brigade, and other emergency response personnel. Through more than 200 different courses, and the ability to customize programs, the South Carolina Fire Academy provides basic and advanced training for firefighters, fire officers, instructors, and fire department support functions, which include public fire education, fire prevention, inspections, and fire investigations.

The Academy offers training to in-state firefighters, out-of-state firefighters, non-member “Open Enrollment” students, Boy Scouts of America “Explorer, Learning for Life,” and Junior Firefighter programs for students 16 and 17-years-old. The Academy also provides training to local EMS, police, emergency management, and rescue squad personnel.

Academy training is based upon the National Fire Protection Association (NFPA) standards and S.C. OSHA regulations. The Academy also focuses its programs on the Fallen Firefighters Foundation’s 16 Life Safety initiatives and its “Everyone Goes Home” program. The “Everyone Goes Home” program focuses on firefighter safety and reducing the number of line-of-duty deaths and injuries.



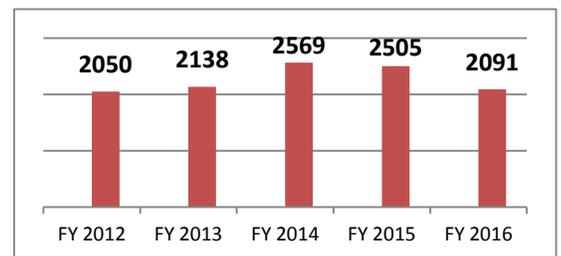
The South Carolina Fire Academy is accredited by the *International Fire Service Accreditation Congress* (IFSA) in 18 fire service occupational levels, and by the *National Board on Fire Service Professional Qualifications* (Pro Board) in 16 levels of Fire Service Professional Qualifications.

Accreditation to these professional levels reinforces the diligence of Academy staff, training programs, and testing process that represents the learning and mastery of each successfully completed student in any of the program levels. Accreditation ensures uniformity of statewide fire education, and also allows students trained and tested at the Academy more mobility to/from other accredited states.

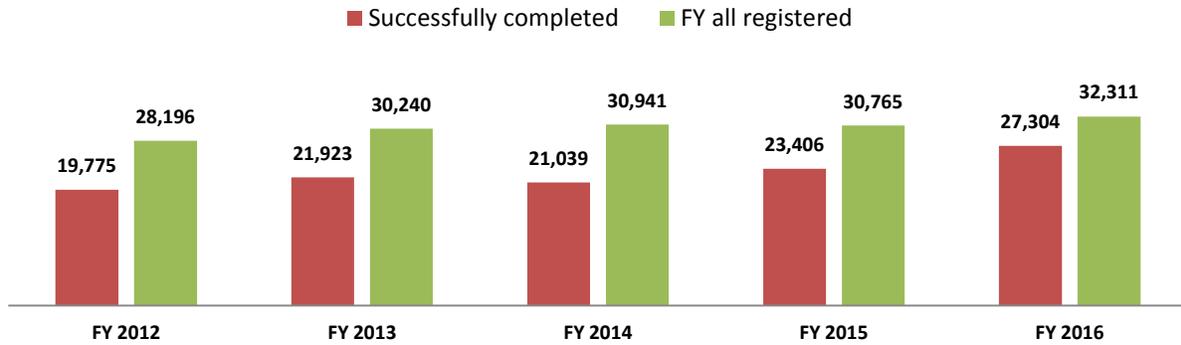
Throughout the year, the Academy provides a minimum of four on-site firefighter recruit programs. The number of programs conducted are based on department and student demand. The eight-week program requires each recruit to reside at the Academy by lodging in an on-site fire station and adhere to a strict instruction schedule. If successful, each recruit achieves nine Academy certificates, including National Accredited Firefighter I and II.

South Carolina has 545 fire departments with nearly 17,800 firefighters. In FY 2016, across the state, the Academy operated and provided 340 days of training. The Columbia site was open 302 days during this same time period (compared to the state employee work year of 247 days). The charts reflect a five-year perspective of the total number of training programs (courses) provided and students attending and completing the courses.

For FY 2016, the Academy provided 2,091 training programs for 32,311 students registered, and 27,304 successfully completed students.



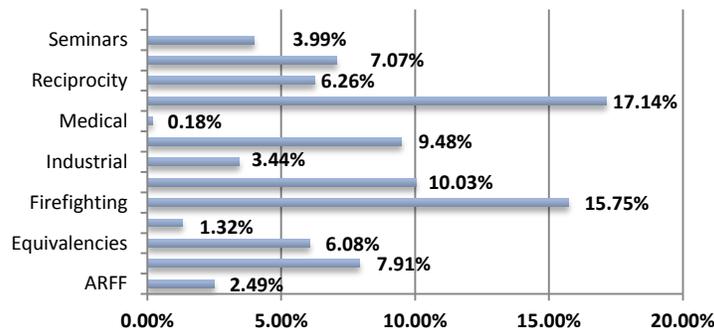
## Total Number of SCFA Registered and Completed Students



To meet the needs of those unable to commit to a traditional classroom environment, the Academy provided more than 11,000 students (completed) online independent learning, hybrid, and blended learning programs. Open enrollment “seminar” online program numbers are not captured as “completed students.” As such, please note many of these students are not counted in the above chart.

This chart reflects the percentage of types of training courses provided to the state’s fire service members. For example, in FY 2016, “Officer” related training totaled 17.14 percent and “Firefighting” was 15.75 percent of classes requested.

### FY 2016 Course Distribution



The South Carolina Fire Academy is comprised of the following areas of operations and support:

### Regional Training

**Program Administrator:** Phillip Russell

Regional training is the key to the delivery of Academy courses to fire service customers. A majority of courses are conducted in the regions at local fire departments. Five regional offices are located throughout the state, and staff works continuously to promote and provide training programs and services to fire service customers. In FY 2016, staff attended 624 fire department meetings.

Number and Types of Employees	
Full Time	Part Time
8	187 Instructors

Additionally, these offices:

- Trained 15,127 successful students in 1,315 provided programs.
- Continued to market programs to reduce the number of canceled programs through marketing, communication, and the addition of in-house instructors to meet fire customer needs.
- Provided an average of 130 retests per month to Academy students.
- Continued to work in support of online, alternative delivery programs and high school programs to increase student occupancy and customer support.
- Continued to add to the number of instructor accelerated training programs to benefit in-house instruction capabilities at the local level.
- Created, using the instructor recertification process, an updated true list of current instructors with accurate contact information.
- Provided 55 instructors recertification programs.
- Implemented a process to identify SCFA instructor needs and provide oversight of temporary instructors.

Regional Training Courses						
Courses	Reg. 1	Reg. 2	Reg. 4	Reg. 5	Reg. 6	Totals
Catalog	139	78	43	7	49	316
Request	106	46	98	109	60	419
In House	113	48	171	200	48	580
<b>Total</b>	<b>358</b>	<b>172</b>	<b>312</b>	<b>316</b>	<b>157</b>	<b>1,315</b>

Completed Students by Region						
Students	Reg. 1	Reg. 2	Reg. 4	Reg. 5	Reg. 6	Totals
Catalog	1,951	951	719	228	585	4,434
Request	1,230	471	912	1,016	517	4,146
In-House	1,588	399	1,853	2,163	544	6,547
<b>Total</b>	<b>4,769</b>	<b>1,821</b>	<b>3,484</b>	<b>3,407</b>	<b>1,646</b>	<b>15,127</b>

## Resident Training

**Program Supervisor:** Lenny Busby

Resident training is responsible for training activity on the Academy's main campus, as well as industrial marketing, industrial programs, technical-level hazardous material and rescue programs, and aircraft rescue firefighting (ARFF) courses. This year, resident staff provided 451 programs for 8,264 successfully completed students.

Specifically, in FY 2016, the Academy:

- Conducted its 33<sup>rd</sup> annual Southeastern Fire School with 10 classes for 207 students, 175 explorer competition students and supported by 17 vendors.
- Hosted its second annual HAZMAT weekend training event with 13 courses conducted for 94 students.
- Continued support and worked closely with the state industry emergency brigade working group, and toured many industrial facilities.
- Attended the ARFF Working Group Conference (Atlanta, Georgia) increasing the number of ARFF students.
- Purchased 35 new sets of firefighting protective clothing for student use.
- Upgraded one breathing air compressor and two utility tractors for better training operations and customer service.
- Assisted the S.C. Firefighters' Association by providing audio-visual equipment, and set up training programs for the Fire Service Improvement conference and the annual Myrtle Beach conference.
- Supported field programs delivering support trailers and equipment 327 times across the state totaling 59,158 truck miles.

Number and Types of Employees	
Full-Time	Part-Time
<b>6</b>	<b>2</b>

Resident Training Courses				
Courses	Municipal	Grant	Industry	Totals
Catalog	178	3	0	181
Grant	0	15	0	15
Industry	0	0	63	63
Request	170	0	0	170
In House	21	0	1	22
				<b>451</b>

Resident Training Students				
Students	Municipal	Grant	Industrial	Totals
Catalog	3,110	30	0	3,140
Grant	0	181	0	181
Industry	0	0	910	910
Request	2,985	0	0	2,985
In House	1,030	0	18	1,048
				<b>8,264</b>

## Instructional Design

**Interim Program Supervisor:** **Bonita Watters**

Instructional Design develops curriculum, audio-visual materials, and online training required for statewide delivery.

In FY 2016, this Section:

- Implemented new or updated curriculum packages to include 3309 Intro to Technical Rescuer, 3310 Technical Rescuer, 2100 Fire Officer I, 2102 Fire Officer II, all four of the Driver Operator series courses, 9121 Interior Structural Fire Brigade, 9181 Flammable Liquid and Gas, Fire Brigade, and 2189 Command and Control of Wildland Urban Interface Fire Operations for the Structural Chief Officer.
- Partnered with National Fire Academy to release national training programs to include updated Incident Safety Officer, and ICS 330 and 400, Shaping the Future.
- Created a Curriculum Resource Center for instructors to download up-to-date curriculum materials.
- Provided more than 11,000 students (see chart below) with open, hybrid, or blended-learning training on the online format.

Number and Types of Employees	
Full Time	Part Time
4	7

Online Training				
Month	Open	Hybrid	Blended	Total
July 2015	222	67	54	343
August 2015	1377	220	91	1688
September 2015	461	418	45	924
October 2015	296	463	17	783
November 2015	625	447	28	1120
December 2015	624	394	19	1037
January 2016	629	416	24	1069
February 2016	467	434	22	923
March 2016	478	472	26	976
April 2016	385	537	17	939
May 2016	415	561	15	991
June 2016	302	17	11	330
<b>FY16 Total</b>	<b>6281</b>	<b>4446</b>	<b>369</b>	<b>11,123</b>

*(Haz-Mat Awareness, Hybrid, and Blended courses are reflected in training courses and student totals.)*

## Accreditation, Testing, and Certification

**Interim Program Supervisor:** **Bonita Watters**

Accreditation and Testing is responsible for managing the Fire Academy's IFSAC (International Fire Service and Accreditation Congress) and Pro Board (National Board on Fire Service Professional Qualifications) Certification and Accreditation programs for the 18 areas of curriculum offered for national certification. This Section also manages the Equivalency and Reciprocity Review Program. In FY 2016, there was a 79.94 percent passing rate on IFSAC exams, an increase of .05 percent from the previous year.

Number and Types of Employees	
Full Time	Part Time
1	2

This Section also:

- Issued 2,514 IFSAC seals (in FY16 stopped issuing new seals for reciprocity).
- Awarded 164 students with 838 levels of reciprocity and 546 students with 1603 levels of equivalencies (accreditation took over ICS 100 and 200 equivalencies and added rescue courses).
- Reaccredited 1021 Fire Officer I and II and the 1002 the Driver Operator series (IFSAC and ProBoard).
- Added the ability for regions to grade certification tests and upload results with scanners.
- Managed the Department of Homeland Security/FEMA State Training grant.
- Managed the FEMA National Fire Academy Command Grant which provided \$20,000 for 70 NFA Officer level programs for 902 students.

## Administration

**Program Administrator:** Phillip Russell

**Program Supervisor:** Sherri Bush

Administration performs resident and regional registrations, course confirmations, resident course billing, dorm and meal coordination, transcript updates, and issues a certificate for each student completing a Fire Academy course (except IFSAC / Pro Board certifications).

Number and Types of Employees	
Full Time	Part Time
3	0

In FY 2016, this Section:

- Processed 1,335 course packages for classes and testing.
- Registered, created, and mailed 19,779 certificates (successfully completed students).
- Billed for 28,307 registered students.
- Maintained a schedule of resident activity, including 8,264 students, 21,192 meals, and 4,141 student dorms for on-site delivered programs.
- Provided site reservation and support for meetings and seminars for non-fire site use.

FY 2016 Administration Activity Report						
MONTH	PACKAGES	STUDENTS	CERTIFICATES	LETTERS	NO SHOWS	TRANSCRIPTS
July	96	1195	898	131	80	24
August	48	565	437	137	11	19
September	115	1649	1513	233	09	45
October	107	1177	939	194	12	12
November	11	153	129	21	11	27
December	104	1521	1105	222	40	15
January	79	1356	1185	130	34	31
February	138	2013	1714	221	40	18
March	148	2209	1959	233	80	27
April	125	2182	1864	383	62	16
May	149	2180	1999	437	65	14
June	215	3579	3337	526	20	08
<b>TOTAL</b>	<b>1335</b>	<b>19779</b>	<b>17079</b>	<b>2868</b>	<b>464</b>	<b>256</b>

## Facilities Maintenance

**Administrator:** Ray Reckelhoff

The facilities maintenance team provides maintenance and janitorial services for the 208-acre site, all buildings, systems, props, support equipment, trailers, and vehicles.

Number and Types of Employees	
Full Time	Part Time
3	1

In FY 2016, this Section:

- Upgraded campus security.
- Completed structural stability, door removal, and window installations projects.
- Repaired and replaced HVAC units on-site, as planned and needed.
- Fabricated and installed new facility entrance gates.
- Planned for the evaluation of the sewer and liquid petroleum gas systems.
- Maintained and upgraded Division fleet, props, and training equipment.
- Improved site grounds, concrete walkways, and signage.

## Cafeteria, Dormitory, and Retail Store

**Coordinator:** Curtis Jermstad

Feeding and lodging is part of the package the Academy provides to on-site customers. The cafeteria staff furnishes meals and dormitory rooms to support site operations and operates the Academy's retail store.

Number and Types of Employees	
Full Time	Part Time
2	0

In FY 2016, this Section:

- Operated 286 days providing 21,192 meals to students, staff, walk-in customers, and inmates.
- Returned to cooking and serving breakfast and lunch.
- Worked diligently in creating a continuous cycle menu for students and guests.
- Installed new Academy store retail display racks.
- Offered new products to customers resulting in \$57,733.60 of sales revenue.
- Provided 4,141 dorm rooms for 5,212 students.
- Assisted with booth/store management during annual S.C. Firefighters' convention in Myrtle Beach.

## S.C. Emergency Response Task Force: Firefighter Mobilization and Urban Search and Rescue

**Section Chief:** Vacant

The S.C. Emergency Response Task Force continues to provide initial and long-term responses to natural and man-made disasters. The program's primary focus is to provide immediate resources to local and regional fire service agencies. We continue into our eighth successful year of partnering with the S.C. National Guard to offer a statewide helicopter rescue program. This asset is one of only a few in the country, and was responsible for rescuing 26 people during the North American Storm Complex of October 2015.

### North American Storm Complex - October 2015

In October 2015, South Carolina was faced with a "1,000-year" flooding event. The state had not seen a natural disaster of this magnitude since Hurricane Hugo in 1989. During the course of nine days, 49 members of South Carolina Task Force 1 participated in numerous rescue and reconnaissance missions.

### Firefighter Mobilization

Per S.C. Code of Laws (23-49-10), this statewide mutual aid assistance agreement can be utilized by the state's 46 counties. The system allows for firefighting and rescue resources to be effectively and efficiently moved throughout the state to assist during local, regional, and statewide disasters or emergencies.

### New Partnerships

In FY 2016, new partnerships were fostered to further grow the Task Force. Relationships were made with the South Carolina State Guard and local agencies.

### Training and Scheduled Events

The Task Force continued to train in each quarter of FY 2016. To focus on rescue and team basics, Task Force leaders launched a "Core Competency" initiative. More than 1,800 hours were spent on FY 2016 team training exercises. An additional 600 hours were spent attending scheduled events and meetings.

### Staffing

In November 2015, several long-time members of the team departed after many years of valuable service. The State of South Carolina is thankful for their service as the program continues to refocus and make plans for future expansion and growth. In addition to the partnerships mentioned above, fire service recruiting continued, including the annual recruiting drive at the 2016 Fire Rescue Conference.

LLR staffing includes one full-time and two part-time administrative coordinators. A new management team will be in place in FY 2017.