

VIRGINIA FIRE SERVICES BOARD

Friday, August 9, 2019

10am

Hampton Convention Center

A regular meeting of the Virginia Fire Services Board was held at the Hampton Convention Center. Mr. Walter Bailey served as Chair.

BOARD MEMBERS PRESENT

Walter Bailey – Chair – Virginia State Firefighter’s Association

Dennis D. Linaburg – Virginia Chapter of the International Association of Arson Investigators

Ernie Little – Fire Prevention Association

James D. Poindexter – Virginia Professional Firefighters Association

James A. Calvert – Industry (SARA Title III & OSHA) Representative

David C. Hankley – Virginia Municipal League

James Stokely – Insurance Industry

Stephanie Koren – Association of Counties

H. Lee Day – Virginia Fire Services Council

Bettie Reeves-Nobles – General Public

Richard (Rick) Gregory- Virginia Board of Housing & Community Development

BOARD MEMBERS ABSENT

Rob Farrell – Virginia State Forester (ABSENT)

Keith Johnson, Virginia Fire Chiefs Association

VACANT - Virginia State Fire Marshal

Jeff Bailey - VA Chapter of the International Society of Fire Service Instructors

AGENCY MEMBERS PRESENT

William MacKay
Theresa Hunter

Brenda Scaife
Vanessa Copeland

Heather Smolka
Garrett Dyer
Mike Reilly

GUESTS PRESENT

Jerome Williams
Ken Brown
Larry Logan
Randy Wheeler

John Miller
Patrick Meeks
Dean Farmer

Richard Harris
Jeff Flippo
Larry Gwaltney

PLEDGE OF ALLEGIANCE & MOMENT OF SILENCE

ROLL CALL

CHANGES IN THE AGENDA

Public Comments

Consent Agenda

- A. Approval of the Minutes Of The Previous Meeting
- B. VDFP Liaison Reports

Report from the VDFP Executive Director

Report from the VDFP Deputy Executive Director-

Fire Education and Training

- A. Unfinished Business
- A. New Business
 - a. Five Year Training Plan – review/approve

Fire Prevention and Control Committee Business

- A. Report From The Department of Forestry
- B. Report From The Codes and Standards Subcommittee
- C. Unfinished Business
- D. New Business
 - a. Code Subcommittee Motions – Chapters 50, 51, 53, 54, 55, and 56 of the 2018 VA Statewide Fire Prevention Code.

Administration, Policy and Finance Committee Business

- A. Report from Administration, Policy and Finance Committee
- B. Report From The Live Structure Committee
- C. Grants and Finance Report from the VDFP Chief Administrative Officer
- D. Unfinished Business
- E. New Business
 - a. New Fire and EMS Study – Green County, Virginia

Comments from the Chairman, VFSB-

Best of luck to Brian McGraw and Thank You for your service to the Board

Full Board Business

- A. Unfinished Business
- B. New Business
 - a. FY20 Rules and Procedures Re-signing
 - b. FY20 Memorandum of Understanding Re-signing
 - c. Committee Assignment Announcements
 - d. Fall Board Meeting Location (November 2019)

PUBLIC COMMENTS

Chairman Walter Bailey thanked the board members and attendees for their commitment to public safety.

Larry Gwaltney, Executive Director of Virginia State Firefighters Association welcomed attendees.

Rick Gregory, BHCD representative introduced himself.

CONSENT AGENDA

Topic: Consent Agenda

Motion: To approve the Consent Agenda / Minutes.

Discussion: Motion to accept agenda and minutes.

Vote: Unanimous

Action: Motion Carries

REPORT FROM THE VDFP EXECUTIVE DIRECTOR

Michael Reilly provided the following report;

Congratulate the VAVRS and VSFFA collaboration. Introduced, William MacKay new fire chief for training and operations. Chief Reilly spoke on the fire related fatalities in the Commonwealth

SB1755 - Chief Reilly provided some update on - SB1755 – the bill directs the Board of Housing and Community Development to revise the Uniform Statewide Building Code and the Statewide Fire Prevention Code, as appropriate, to permit the use, by a staff member of a public or private elementary or secondary school or public or private institution of higher education, of a temporary barricade device on the door of a classroom or any other area where students are located for a finite period of time during an active shooter emergency or active shooter drill. The bill specifies several requirements for the use of such devices. Chief Reilly indicated that the State Fire Marshal’s Office is taking an active role in the discussion.

Cornerstone – Reilly advised the board members that there might have been some misunderstanding about the progress for Cornerstone. VDFP staff is working very hard to ensure the program is released and implemented in the most efficient manner.

REPORT FROM RISK MANAGEMENT BRANCH REPORT

Chief Safety Officer Briant Atkins provided the following report:

- **Firefighter Cancer Awareness** VDFP adjunct Steve Weissman will be presenting our Firefighter Cancer Awareness Program at Fire Rescue International August 8, 2019 in Atlanta. We are extremely pleased our VDFP Program will be presented at a national level event in this area of very vital concern for the fire service. We will also be delivering the full Cancer Prevention and Burn Prevention programs at The Virginia EMS Symposium in November.
- **Decontamination:** Incorporated in Draft of New Live Fire Training Policy awaiting final approval and then will be distributed. Decontamination in Live Fire Training has been taught as part of NFPA 1403. Will be disseminated immediately after approval
- **NFPA 1403 Program:** We finished piloting the program. The final product looks like it will be an attendance based program to update Compliance Officers and Instructors in Charge. The decision to go with this was based on almost overwhelming feedback that the Va. Fire services simply needed a program to update the jurisdictions on requirements of the NFPA 1403-18 standard and VDFP policies. Second a certification program based on several model programs might logistically be a significant hurdle to accomplish from both time manner and financially. Chief Liebold in Division 2 has taken over the operational management of the Program.
- **ISO Program:** We will begin working on an Incident Safety Officer Certification Program here in The Commonwealth. We have a test bank so that we can become accredited for this during our reaccreditation. More info to follow later. I feel Virginia's Fire Service should not have to pay vendors to come in from out of state to do this program and charge.
- **PPE for Instructors:** The third round of PPE is in and will be distributed. We also recently awarded a contract for PPE maintenance and approximately 1/3 of the PPE from the first round had its advanced cleaning and inspection as set forth in NFPA 1851.
- **Statistical Data:** Please see below for statistical data for the injuries documented in our training programs in FY2019. Our numbers are running parallel to what they were last year in numbers and type. The leading programs causing injury and the leading types remain unchanged and continue to be in the Firefighter Series Programs. Primarily Strains/Sprain type injuries lead with Exhaustion/overexertion type injuries right behind that.

August 2019 VFSB Meeting Report

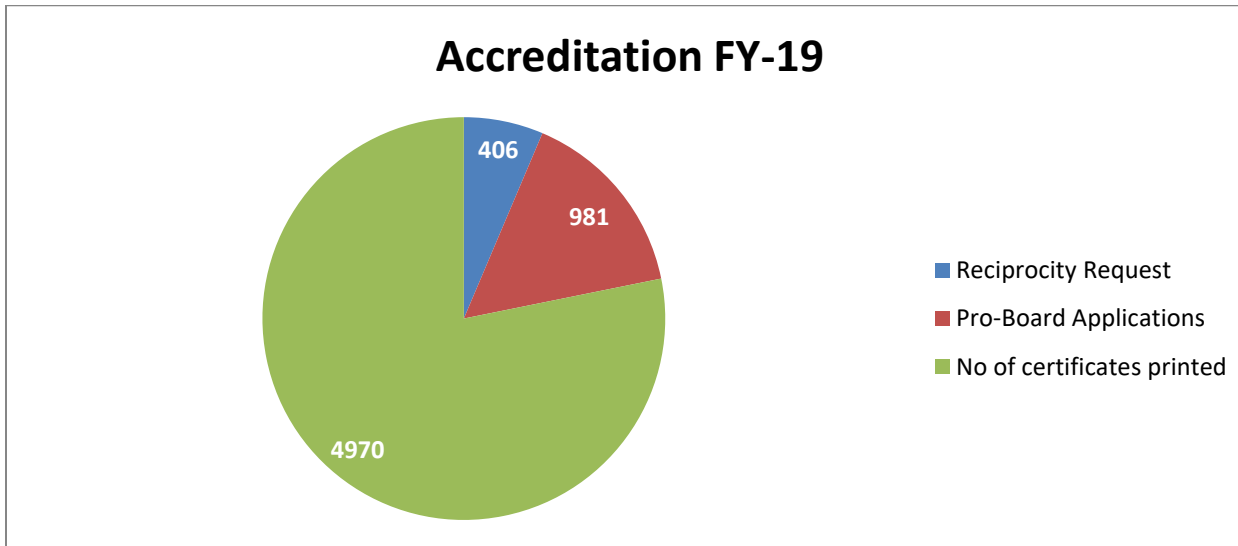
Data Classification	FY18	FY19	+/- % Change
Total Injuries	59	57	-3%
Leading Type of Injury	Strains, Sprains, and Pain	Strains, Sprains, and Pain	N/A
Most injuries by Division	Division 1	Division 2	N/A
Percentage of Injuries during Live Fire	46%	26%	-20%
Most injuries by Class	FF Series	FF Series	N/A
Average Age of Injured	28	30	8%
Average BMI of Injured	30.6%	28.5%	-3.8%
Percentage of Injuries-Career	47%	56%	19%
Percentage of Injuries-Volunteer	53%	44%	-17%

<u>Statistical Data: (FY 19 Final Totals)</u>	
<u>VDFP Training Injuries:</u>	FY -Injury From Fall: 4
Since FY Beginning: 57	FY -Exhaustion/Over Exertion: 18
	FY- Struck By: 6
Live Fire Training: FY: 15	FY – Strains, Sprain, Pain: 22
	FY – Burn : 3
<u>Program :</u>	FY – Other: 4
FY-Firefighter Series: 33	
FY – Mayday Operations: 9	<u>By Division:</u>
FY – HMO: 0	FY Div. 1: 6
FY- TRT: 10	FY Div. 2: 14
FY – VFMA: 1	FY Div. 3: 10
FY – DPO : 0	FY Div. 4: 2
FY – Marine: 0	FY Div. 5: 7
FY ARFF: 2	FY Div. 6: 3

FY – Other: 2	FY Div. 7: 2
	FY Specialty: 13
	(FMA: 1 TRT: 10 Marine: 0 ARFF: 2)

August 2019 VFSB Meeting Report

Quality Assurance Division Report:



The following items are being worked on by the QA Division staff:

- The above chart shows the current numbers for FY-19. We are currently working on finalizing all of the FY-19 schools and will provide the year-end report at a later meeting.

- The reaccreditation effort is underway for both IFSAC and Pro-Board. This will be completed by the end of CY-19.
- All new testing is being rolled out over the next six months. This includes the use of new ScanTron Forms and software.
- The Quality Assurance Programs was implemented on July 1, 2019. The program is designed to measure/review five areas: the instructional delivery by our instructors, the division office processing of training programs, the testing of both written and skills, the logistical support by the localities hosting training and the student feedback (evaluation).

FIRE EDUCATION AND TRAINING COMMITTEE BUSINESS REPORT FROM THE VDFP OPERATIONS AND TRAINING/TECH SERVICES

William MacKay provided the following report:

- **Course/Class Delivery:** VDFP has completed the delivery of classes for FY 2019. Overall we had an increase in actual courses run of 1.73% (1842 in FY18, 1874 in FY19) with three divisions reporting gains, while four reported reductions. A total of 2024 courses were scheduled, however, 8% (150) were cancelled. Of the 150 cancellations, 62 (41.3%) were cancelled due to low enrollment.
- **Staffing:** Consistent staffing at both the Division level as well as in Glen Allen continues to present some challenges. Several vacancies have existed for longer than anticipated time frames which have resulted in multiple staff members assuming duties normally performed by others.
- **Initiatives:** Work continues on the Cornerstone Project. When fully implemented this will dramatically improve the work flow, course/school administration, and student access to course/records. There will be some business model changes that will take a while to fully develop and implement. We continue to remind students that it is incumbent upon them to make a copy of their existing certificates and transcript to assist in any prerequisite issues going forward. Several courses are in various stages of re-write or development. The agency is/has adopted a Drug and Alcohol Policy that includes language for testing (with cause), as well as to be compliant with CDL License requirements.
- **Division Offices:** Both Division 5 and Division 6 offices have been relocated:
 - Division 5 - 1919 Commerce Drive, Suite 400, Hampton, VA 23666
 - Division 6 - 3003 Peters Creek Road, Roanoke, VA 24019
- **National Fire Academy, Virginia Weekend:** Currently scheduled for 11/16 & 11/17 with arrival on the 15th. There will be four classes offered:
 - Health and Safety Program Manager

- Incident Safety Officer
- Introduction to Unified Command, All Hazards
- Building Organizational Support for Community Risk Reduction

This will be a “Virginia only” weekend as Tennessee has elected not to participate. Additionally, it will be the first time we will be attending under the “Real ID” requirements.

- **VDFP Support:** VDFP staff will be supporting the First Responder Conference as well as in the coming months the Haz Mat Conference and the EMS Conference.

REPORT FROM TRAINING AND EDUCATION COMMITTEE

UNFINISHED BUSINESS

N/A

NEW BUSINESS

Topic: Five-Year Training Plan

Motion: Motion to accept and implement the five year strategic training plan.

Topic Discussion: Dr. Calvert sought to discuss the Five Year Training Plan. The below goals were presented.

Goal 1 – Improve the use of technology within the daily operations of Training and Education. (FY 2019)

Goal 2 – Improve the safe execution, program compliance documentation, and inspection records of NFPA 1403 Compliance in live fire training programs. (FY 2019)

Goal 3 – Implement Fire Instructor of the Year Program - One per Division (FY 2019)

Goal 4 –Transition to a computer-based testing component for written examinations. (FY 2019)

Goal 5 – Evaluate the required class hours and testing component of the certification training programs. (FY 2020)

Goal 6 – Improve the documentation of the fire department membership rosters for the Commonwealth. (FY 2019)

Goal 7 – Collaborate with the Virginia Department of Education to investigate offering Firefighter I & II curriculums components as part of the Commonwealth Science and Technology Centers. (FY 2020)

Goal 8 – Investigate partnerships with private industry representatives to obtain alternative means of financial support for volunteer fire departments and advise jurisdictions regarding the implementation of such alternatives. (FY 2021)

Goal 9 – Increase the availability and awareness of training programs throughout the Commonwealth. (Annually)

Goal 10- Provide up-dated and accurate information on policies and procedures related to training. (Annually)

Vote: Unanimous

Motion Action: Motion Carries

Enclosure 1

REPORT FROM THE DEPARTMENT OF FORESTRY

John Miller from Forestry delivered the following report on behalf of Forestry;

Virginia Dry Hydrant Program: The contractor failed to complete all of the FY 2019 installations by the June 1st date, as specified within the dry hydrant contract. The contractor assures the DOF that he will complete all of the remaining FY 2019 projects, and has agreed to a revised deadline of August 22, 2019 to complete this work. Pending the successful completion of the FY 2019 work, the FY 2020 projects will be released to the contractor for installation. The total project work includes the following:
FY 2019 – 32 New Installations with 14 Repairs.
FY 2020 – 25 New Installations are planned, along with two Repairs.

Fall Wildfire Training Academy: The DOF is hosting a fall wildfire-training academy at the Skelton 4H Center on Smith Mountain Lake, on October 1 – 4, 2019. A total of 120 local firefighters are expected to take the four classes being offered, which cover basic wildland firefighting, fire tractor operations, chainsaw operations and fire line leadership. Registration for the classes is open to anyone in the fire service, and more information can be found on the DOF's agency website.

Smokey's 75th Birthday: Wildfire prevention enthusiasts will note that today is the official 75th birthday of Smokey Bear. There are a number of special events throughout both the state and nation in 2019, marking the 75th anniversary of the wildfire prevention icon. Virginia highlights include a special birthday party at DOF's Charlottesville headquarters office, which will include a visit by Governor Northam along with a special proclamation; appearance of the Smokey Bear hot air balloon at the Shenandoah County fair later this month; and several local ceremonies throughout the Commonwealth.

REPORT FROM THE STATE FIRE MARSHAL'S OFFICE

N/A

REPORT FROM THE CODES AND STANDARDS SUBCOMMITTEE

Delivered by Ernie Little – Chair of Fire Prevention and Control Committee and a member of the Code Subcommittee

UNFINISHED BUSINESS

Topic: SFPC Recommendations from Code Subcommittee

Motion: To approve the committee's recommendations to chapters 50, 51, 53, 54, 55, and 56 of the 2018 SFPC. These changes will be submitted to the 2018 code development for consideration at the workgroup session.

Topic Discussion: Edits made to the chapters below are in the form of VFSB Code Subcommittee Recommendations;

Chapter 50

- **Section 5001.3.3** - provides performance based alternatives, not standard maintenance or prescriptive code requirements. Therefore, reference to maintaining in accordance with the building code would not be appropriate
- **Section 5001.3.3** provides performance based alternatives, not standard maintenance or prescriptive code requirements. Therefore, reference to maintaining in accordance with the building code would not be appropriate.
- 5003.1.3
- **5003.1.4** Quantities exceeding the maximum allowable quantity per control area. The storage and use of hazardous materials in quantities exceeding the maximum allowable quantity per control area indicated in Tables 5003.1.1(1) through 5003.1.1(4) shall be approved by the Building Code Official in accordance with the applicable building code.

- **5003.2** Systems, equipment and processes. Systems, equipment and processes utilized for storage, dispensing, use or handling of hazardous materials shall be in accordance with Sections 5003.2.1 through 5003.2.8
- **(N)5003.2.1** Design and construction of containers, cylinders and tanks. Portable containers and cylinders shall be designed and constructed in accordance with approved standards. Containers, cylinders, and other means used for containment of hazardous materials shall be of an approved type. Pressure vessels not meeting U.S. Department of Transportation requirements for transportation shall comply with the ASME Boiler and Pressure Vessel Code. Tanks shall be maintained as approved in accordance with the applicable building code.
- **(N)5003.2.2** Piping, tubing, valves and fittings. Piping, tubing, valves, and fittings conveying hazardous materials shall be maintained in accordance with ASME B31 or other approved standards in accordance with the applicable building code
- **5003.2.3** Equipment, machinery and alarms. Equipment, machinery and detection and alarm systems associated with the use, storage or handling of hazardous materials shall be listed or approved.
- **5003.2.4.1** Underground tanks. Underground tanks used for the storage of liquid hazardous materials shall maintain secondary containment. In lieu of secondary containment for an underground tank, an above-ground tank in an underground vault complying with the applicable building code and Section 5704.2.8 shall be permitted.
- **5003.2.4.2** Above-ground tanks. Above-ground stationary tanks used for the storage of hazardous materials shall be maintained in accordance with the requirements for outdoor storage of the particular material involved. Exception: Above-ground tanks that are installed in vaults complying with the applicable building code and maintained in accordance with Section 5303.16 or 5704.2.8 shall not be required to comply with location and protection requirements for outdoor storage.
- **5003.2.7** Liquid-level limit control. Atmospheric tanks having a capacity greater than 500 gallons (1893 L) and which contain hazardous material liquids shall maintain a liquid-level limit control or other approved means to prevent overfilling of the tank in accordance with the applicable building code.
- **5003.8** Construction requirements. Buildings, control areas, enclosures and cabinets for hazardous materials shall be in accordance with Sections 5003.8.1 through 5003.8.6.3.
- **5003.8.2** Detached buildings. Group H occupancies containing quantities of hazardous materials in excess of those set forth in Table 5003.8.2 shall be located as required by the applicable building code.
- **5003.8.3** Control areas. Control areas shall comply with Sections 5003.8.3.1 through 5003.8.3.5. Exception: Higher education laboratories in accordance with Chapter 38 and the applicable building code.
- **5003.8.3.1** Control Areas. Control areas separated from each other by fire barriers shall maintain those fire barriers in accordance with Chapter 7.
- **5003.8.3.2** Percentage of maximum allowable quantities. The percentage of maximum allowable quantities of hazardous materials per control area allowed at each floor level within a building shall be maintained in accordance with this chapter and the applicable building code. Quantities exceeding those listed in Table 5003.8.3.2 shall be approved by the Building Official in accordance with the applicable building code.
- **5003.8.3.4** Fire-resistance-rating requirements. The required fire-resistance rating for control areas shall be maintained in accordance with Chapter 7, this Chapter and the applicable building code.

- **5003.8.3.5** Hazardous material in Group M display and storage areas and in Group S storage areas. The aggregate quantity of nonflammable solid and nonflammable or noncombustible liquid hazardous materials allowed within a single control area of a Group M display and storage area or a Group S storage area shall comply with this chapter and the applicable building code. The aggregate quantity is allowed to exceed the maximum allowable quantities per control area specified in Tables 5003.1.1(1) and 5003.1.1(2), without classifying the building or use as a Group H occupancy, provided that the materials are displayed and stored in accordance with Section 5003.11 and the applicable building code.
- **5003.8.4** Gas rooms. Where a gas room is provided it shall be maintained in accordance with the provisions of Chapter 60, this chapter, and the applicable building code.
- **5003.8.4.1** Protection. Gas rooms shall maintain fire protection systems and separation from the remainder of the building in accordance with the applicable building code.
- **5003.8.4.2** Ventilation system. The ventilation system for gas rooms shall be maintained in accordance with this chapter, Chapter 60, and the applicable building code.
- **5003.8.5** Exhausted enclosures. Where an exhausted enclosure is used to increase maximum allowable quantity per control area, the exhausted enclosure shall be maintained in accordance with this chapter, Chapter 60, and the applicable building code
- **5003.8.5.1** Construction. Exhausted enclosures shall remain as and be maintained with noncombustible materials unless otherwise approved by the applicable building code.
- **5003.8.5.2 Ventilation.** The ventilation system for exhausted enclosures shall be maintained in accordance with this chapter, Chapter 60, and approved by the applicable building code.
- **5003.8.5.3** Fire-extinguishing system. Fire-extinguishing systems required for exhaust enclosures shall be maintained in accordance with Chapter 9 and the applicable building code.
- **5003.8.6.2** Ventilation. The ventilation system for gas cabinets shall be maintained in accordance with this chapter, Chapter 60, and approved by the applicable building code.
- **5003.9.9 Shelf storage.** Shelving shall be of substantial construction, comply with the requirements of this chapter and NFPA 30, and shall be braced and anchored in accordance with the seismic design requirements of the applicable Building Code. Shelving shall be treated, coated or constructed of materials that are compatible with the hazardous materials stored. Shelves shall be provided with a lip or guard when used for the storage of individual containers.
- **5003.11.1** Maximum allowable quantity per control area in Group M or S occupancies. The aggregate amount of nonflammable solid and nonflammable or noncombustible liquid hazardous materials stored and displayed within a single control area of a Group M occupancy or stored in a single control area of a Group S occupancy shall not exceed the amounts set forth in the applicable building code. Quantities exceeding those listed in Table 5003.11.1 shall be approved by the Building Official in accordance with the applicable building code.
- **5003.8.3.3** Number. The maximum number of control areas per floor within a building shall be maintained in accordance with this chapter and the applicable building code.
- **5003.11.2** Maximum allowable quantity per outdoor control area in Group M or S occupancies. The aggregate amount of nonflammable solid and nonflammable or noncombustible liquid hazardous materials stored and displayed within a single outdoor control area of a Group M occupancy shall not exceed the amounts set forth in the applicable building code. Quantities

exceeding those listed in Table 5003.11.1 shall be approved by the Building Official in accordance with the applicable building code.

- **5003.11.3** Storage and display. Storage and display shall be in accordance with Sections 5003.11.3.1 through 5003.11.3.10.
- **5003.11.3.1** Density. Storage and display of solids shall not exceed 200 pounds per square foot (976 kg/m²) of floor area actually occupied by solid merchandise. Storage and display of liquids shall not exceed 20 gallons per square foot (0.50 L/m²) of floor area actually occupied by liquid merchandise.
- **5003.11.3.2** Storage and display height.
- Display height shall not exceed 6 feet (1829 mm) above the finished floor in display areas of Group M occupancies. Storage height shall not exceed 8 feet (2438 mm) above the finished floor in storage areas of Group M and Group S occupancies.
- **5003.11.3.4** Racks and shelves.
- Racks and shelves used for storage or display shall be maintained in accordance with Section 5003.9.9.
- **5003.11.3.8** Floors. Floors shall be maintained in accordance with section 5004.12 unless otherwise approved by the applicable building code.
- **5004.1** **Scope.** Storage of hazardous materials in amounts exceeding the maximum allowable quantity per control area shall be maintained in Sections 5001, 5003 and 5004 and the applicable building code. Storage of hazardous materials in amounts not exceeding the maximum allowable quantity per control area shall be in accordance with Sections 5001 and 5003 and the applicable building code. Retail and wholesale storage and display of nonflammable solid and nonflammable and noncombustible liquid hazardous materials in Group M occupancies and Group S storage shall be maintained in accordance with section 5003.11 and the applicable building code.
- **5004.2** Spill control and secondary containment for liquid and solid hazardous materials. Spill control and secondary containment for rooms, buildings or areas used for the storage of liquid or solid hazardous materials shall be maintained in accordance with this Chapter the applicable building code. Exception: Outdoor storage of containers on approved containment pallets in accordance with Section 5004.2.3.
- **5004.2.1** Spill control for hazardous material liquids.
- Unless otherwise required by the applicable building code, rooms, buildings or areas used for the storage of hazardous material liquids in individual vessels having a capacity of more than 55 gallons (208 L), or in which the aggregate capacity of multiple vessels exceeds 1,000 gallons (3785 L), shall maintain spill control to prevent the flow of liquids to adjoining areas in accordance with the applicable building code.
- **5004.2.2** Secondary containment for hazardous material liquids and solids.
- Unless otherwise required by the applicable building code, buildings, rooms or areas used for the storage of hazardous materials liquids or solids shall maintain secondary containment in accordance with the applicable building code and this section when the capacity of an individual vessel or the aggregate capacity of multiple vessels exceeds the following: Liquids: Capacity of an individual vessel exceeds 55 gallons (208 L) or the aggregate capacity of multiple vessels exceeds 1,000 gallons (3785 L); and Solids: Capacity of an individual vessel exceeds 550 pounds (250 kg) or the aggregate capacity of multiple vessels exceeds 10,000 pounds (4540 kg).

- **5004.2.2.1** Containment and drainage methods. Facilities, equipment, and method used for containment and drainage of hazardous materials and fire protection water shall be maintained in accordance with this Chapter and the applicable building code.
- **5004.2.2.5 Monitoring.** An approved monitoring method shall be provided to detect hazardous materials in the secondary containment system. The monitoring method is allowed to be visual inspection of the primary or secondary containment, or other approved means. Where secondary containment is subject to the intrusion of water, a monitoring method for detecting water shall be provided. Where monitoring devices are provided, they shall remain connected to approved visual or audible alarms in accordance with the applicable building code.
- **5004.2.2.6** Drainage system design. Drainage systems shall be maintained in accordance with this Chapter and the applicable building code.
- **5004.3 Ventilation.** Indoor storage areas and storage buildings shall maintain ventilation in accordance with the applicable building code and it shall be operated and maintained in accordance with this Chapter. Exception: Storage areas for flammable solids complying with Chapter 59.
- **5004.5** Automatic sprinkler systems. Automatic sprinkler systems for the storage of hazardous materials shall be maintained in accordance with this Chapter, chapter 9 and the applicable building code.
- **(N)5004.6** Explosion control. Explosion control for storage rooms, areas and buildings shall be maintained in accordance with this chapter, chapter 9 and the applicable building code.
- **5004.7** Standby or emergency power. Where mechanical ventilation, treatment systems, temperature control, alarm, detection or other electrically operated systems are required to have emergency or standby power systems in accordance with the applicable building code, those power systems shall be operated and maintained in accordance with NFPA 70, Section 604, and this Chapter.
- **5004.8 Limit controls.** Limit controls shall be maintained in accordance with Sections 5004.8.1 and 5004.8.2.
- **5004.8.1** Temperature control. Where materials that must be kept at temperatures other than normal ambient temperatures to prevent a hazardous reaction shall maintain a means to maintain the temperature within a safe range method in accordance with this Chapter and the applicable building code.
- **5004.8.2** Pressure control. Stationary tanks and equipment containing hazardous material liquids that can generate pressures exceeding design limits because of exposure fires or internal reaction shall maintain an approved means that will relieve excessive internal pressure in accordance with the applicable building code.
- **5004.9** Emergency alarm. Where provided, an approved manual emergency alarm system shall be maintained in buildings, rooms or areas used for storage of hazardous materials in accordance with Chapter 9 and the applicable building code.
- **5004.10** Supervision and monitoring. Where emergency alarm, detection and automatic fire-extinguishing systems are required by the applicable building code to be electrically supervised they shall maintain monitoring by an approved supervising station, or when approved, sound an audible and visual signal at a constantly attended on-site location.
- **5004.12** Noncombustible Floors. Except for surfacing, floors of storage areas shall remain non-combustible where required by the applicable building code.

- **5005.1** General. Use, dispensing and handling of hazardous materials in amounts exceeding the maximum allowable quantity per control area shall be maintained in accordance with Sections 5001, 5003 and 5005 and the applicable building code. Use, dispensing and handling of hazardous materials in amounts not exceeding the maximum allowable quantity per control area set forth in Section 5003.1 shall be maintained in accordance with Sections 5001 and 5003 and the applicable building code.
- **5005.1.2** Noncombustible floor. Except for surfacing, floors of areas where liquid or solid hazardous materials are dispensed or used in open systems shall be maintained as noncombustible, and liquid-tight where required by the applicable building code.
- **5005.1.3** Spill control and secondary containment for hazardous material liquids. Where required by the applicable building code, spill control and secondary containment shall be maintained in accordance with section 5004.2 and the applicable building code.
- **5005.1.4** Limit controls. Limit controls shall be maintained in accordance with Sections 5005.1.4.1 through 5005.1.4.4.
- **5005.1.4.1** High-liquid-level control. Where required by the applicable building code, open tanks in which liquid hazardous materials are used shall maintain a liquid-level limit control or other means to prevent overfilling of the tank.
- **5005.1.4.2** Low-liquid-level control. Where required by the applicable building code, approved safeguards shall be maintained to prevent a low-liquid level in a tank from creating a hazardous condition, including but not limited to, overheating of a tank or its contents.
- **5005.1.4.3** Temperature control. Where required by the applicable building code, temperature controls shall be maintained in accordance with Section 5004.8.1.
- **5005.1.4.4** Pressure control. Where pressure controls are required by the applicable building code they shall be maintained in accordance with section 5004.8.2.
- **5005.1.5** Standby or emergency power.
- Where mechanical ventilation, treatment systems, temperature control, alarm, detection or other electrically operated systems are required to have emergency or standby power systems in accordance with the applicable building code, those power systems shall be operated and maintained in accordance with NFPA 70, Section 604, and this Chapter.
- **5005.1.6** Supervision and monitoring. Where emergency alarm, detection and automatic fire-extinguishing systems are required by the applicable building code to be electrically supervised they shall maintain monitoring by an approved supervising station, or when approved, sound an audible and visual signal at a constantly attended on-site location.
- **5005.1.7** Lighting. Natural or artificial lighting provided for use, dispensing and handling of hazardous materials shall be maintained in accordance with this Chapter, Chapter 6, and the applicable building code.
- **5005.1.8** Fire-extinguishing systems. Where Fire-extinguishing systems for rooms or areas in which hazardous materials are dispensed or used are required by the applicable building code they shall be maintained in accordance with this Chapter, Chapter 9, and the applicable building code
- **5005.1.9** Ventilation. Indoor dispensing and use areas shall be operated and maintained with exhaust ventilation in accordance with the applicable building code and Section 5004.3. Ventilation is not required for dispensing and use of flammable solids other than finely divided particles.

- **5005.2.1.3 Spill control for hazardous material liquids.** Buildings, rooms, or areas where hazardous material liquids are dispensed into vessels exceeding a 1.3-gallon (5 L) capacity or used in open systems exceeding a 5.3-gallon (20 L) capacity shall be maintained with spill control in accordance with Section 5004.2.1 and the applicable building code.
- **5005.2.1.4 Secondary containment for hazardous material liquids.** Where required by the applicable building code and Table 5005.2.1.4, buildings, rooms or areas where hazardous material liquids are dispensed or used in open systems shall maintain secondary containment in accordance with Section 5004.2.2 when the capacity of an individual vessel or system or the capacity of multiple vessels or systems exceeds the following: Individual vessel or system: greater than 1.3 gallons (5 L). Multiple vessels or systems: greater than 5.3 gallons (20 L).
- **5005.2.2.1 Ventilation.** Where closed systems are designed to be opened as part of normal operations, ventilation required by the applicable building code shall be maintained in accordance with Section 5005.2.1.1.
- **5005.2.2.2 Explosion control.** Where required by the applicable building code, explosion control shall be maintained in accordance with Section 5004.6 where an explosive environment exists because of the hazardous materials dispensed or used, or as a result of the dispensing or use process. Exception: Where process vessels are designed to contain fully the worst-case explosion anticipated within the vessel under process conditions based on the most likely failure.
- **5005.2.2.3 Spill control for hazardous material liquids.** Where required by the applicable building code, spill control for buildings, rooms or areas where hazardous material liquids are used in individual vessels exceeding a 55-gallon (208 L) capacity shall be provided with spill control in accordance with Section 5004.2.
- **5005.2.2.4 Secondary containment for hazardous material liquids.** Where required by the applicable building code and Table 5005.2.1.4, buildings, rooms or areas where hazardous material liquids are used in vessels or systems shall maintain secondary containment in accordance with Section 5004.2.2 when the capacity of an individual vessel or system or the capacity of multiple vessels or systems exceeds the following: Individual vessel or system: greater than 55 gallons (208 L) and Multiple vessels or systems: greater than 1,000 gallons (3785 L).
- **5005.3.4 Spill control for hazardous material liquids in open systems.** Outdoor areas where hazardous material liquids are dispensed in vessels exceeding a 1.3-gallon (5 L) capacity or used in open systems exceeding a 5.3-gallon (20 L) capacity shall be provided with spill control in accordance with Section 5004.2.1 and the applicable building code. Where required by the applicable building code and Table 5005.2.1.4, outdoor areas where hazardous material liquids are dispensed or used in open systems shall maintain secondary containment in accordance with Section 5004.2.2 when the capacity of an individual vessel or system or the capacity of multiple vessels or systems exceeds the following: Individual vessel or system: greater than 1.3 gallons (5 L). Multiple vessels or systems: greater than 5.3 gallons (20 L).
- **5005.3.6 Spill control for hazardous material liquids in closed systems.** Outdoor areas where hazardous material liquids are used in closed systems exceeding 55 gallons (208 L) shall maintain spill control in accordance with Section 5004.2.1 and the applicable building code.
- **5005.3.7 Secondary containment for hazardous material liquids in closed systems.** Where required, outdoor areas where hazardous material liquids are dispensed or used in closed systems shall maintain secondary containment in accordance with the applicable building code and section 5004.2.2 where the capacity of an individual vessel or system or the capacity of multiple

vessels or systems exceeds the following: 1. Individual vessel or system greater than 55 gallons (208 L). 2. Multiple vessels or systems greater than 1,000 gallons (3785 L).

- **5005.4 Handling.** Handling of hazardous materials shall be in accordance with Sections 5005.4.1 through 5005.4.4.
- **5005.4.1** Quantities exceeding the maximum allowable quantity per control area. Handling of hazardous materials in indoor and outdoor locations in amounts exceeding the maximum allowable quantity per control area indicated in Tables 5003.1.1(1) through 5003.1.1(4) and the applicable building code shall be in accordance with Sections 5001, 5003, 5005.1 and 5005.4.
- **5005.4.2** Quantities not exceeding the maximum allowable quantity per control area. Handling of hazardous materials in indoor locations in amounts not exceeding the maximum allowable quantity per control area indicated in Tables 5003.1.1(1) and 5003.1.1(2) and the applicable building code shall be in accordance with Sections 5001 and 5003 and 5005.1. Handling of hazardous materials in outdoor locations in amounts not exceeding the maximum allowable quantity per control area indicated Table 5003.1.1(3) and 5003.1.1(4) and the applicable building code shall be in accordance with Sections 5001 and 5003.
- **5005.4.4** Dispensing, use and handling. Unless otherwise permitted by the applicable building code, hazardous materials having a hazard ranking of 3 or 4 in accordance with NFPA 704 should not be transported through corridors, interior exit stairways or ramps or exit passageways, unless such areas maintain an emergency telephone system, a local manual alarm station or an approved alarm-initiating device throughout the transport route. Where required by the applicable building code, the signal shall be relayed to an approved central, proprietary or remote station service or constantly attended on-site location and shall also initiate a local audible alarm.

Chapter 51

- **5104.1** General. The inside storage of Levels 2 and 3 aerosol products shall be maintained in accordance with section 5104.2 through 5104.7, NFPA 30B, and remain in accordance with the applicable building code.
- **5104.3** Storage in general purpose warehouses.
- Aerosol storage in general purpose warehouses utilized only for warehousing-type operations involving mixed commodities shall be maintained in accordance with Section 5104.3.1 or 5104.3.2 and remain in accordance with the applicable building code.
- **5104.3.1** Nonsegregated storage.
- Unless otherwise approved by the applicable building code, storage consisting of solid pile, palletized or rack storage of Level 2 and 3 aerosol products not segregated into areas utilized exclusively for the storage of aerosols shall comply with Table 5104.3.1.
- **5104.3.2** Segregated storage.
- Unless otherwise approved by the applicable building code, storage of Level 2 and 3 aerosol products segregated into areas utilized exclusively for the storage of aerosols shall comply with Table 5104.3.2 and Sections 5104.3.2.1 and 5104.3.2.2. Keep table - operational storage limits
- **5104.3.2.1** Chain-link fence enclosures. Unless otherwise approved by the applicable building code, chain-link fence enclosures required by Table 5104.3.2 shall be maintained in accordance with the following: The fence shall not be less than No. 9 gage steel wire, woven into a maximum 2-inch (51 mm) diamond mesh. 2.The fence shall be maintained from the floor to the underside of

the roof or ceiling above. 3. Class IV and high-hazard commodities shall be stored outside of the aerosol storage area and a minimum of 8 feet (2438 mm) from the fence. 4. Access openings in the fence shall be maintained with either self- or automatic-closing devices or a labyrinth opening arrangement preventing aerosol containers from rocketing through the access openings. 5. Not less than two means of egress shall be maintained from the fenced enclosure.

- **5104.3.2.2** Aisles. The minimum aisle requirements for segregated storage in general purpose warehouses shall be maintained in accordance with Table 5104.3.2.2 and remain in accordance with the applicable building code. Keep table - operational storage limits
- **5104.4** Storage in aerosol warehouses. The total quantity of Level 2 and 3 aerosol products in a warehouse utilized for the storage, shipping and receiving of aerosol products shall not be restricted in structures complying with Sections 5104.4.1 through 5104.4.4.
- **5104.4.1** Automatic sprinkler system capability. Aerosol warehouses protected by an approved wet-pipe automatic sprinkler system in accordance with NFPA 30B and the applicable building code shall be maintained in accordance with Chapter 9. The highest classification level of aerosol product present shall not exceed the capability of the approved sprinkler system.
- **5104.4.2** Pile and palletized storage aisles.
- Solid pile and palletized storage shall be arranged so the maximum travel distance to an aisle is 25 feet (7620 mm). Aisles shall have a minimum width of 4 feet (1219 mm).
- **5104.4.3** Rack storage aisles. Rack storage shall be maintained in accordance with Chapter 32 and remain in accordance with the applicable building code.
- **5104.4.4** Combustible commodities. Combustible commodities other than flammable and combustible liquids shall be permitted to be stored in an aerosol warehouse. Exception: Flammable and combustible liquids in 1-quart (946 mL) metal containers and smaller shall be permitted to be stored in an aerosol warehouse.
- **5104.5** Storage in inside flammable liquid storage rooms.
- Inside flammable liquid storage rooms shall be maintained in accordance with Section 5704.3.7 unless otherwise approved by the applicable building code. The maximum quantities of aerosol products shall be maintained in accordance with Section 5104.5.1 or 5104.5.2.
- **5104.5.1** Storage rooms of 500 square feet or less. The storage of aerosol products in flammable liquid storage rooms less than or equal to 500 square feet (46 m²) in area shall not exceed the following quantities: 1. A net weight of 1,000 pounds (454 kg) of Level 2 aerosol products. 2. A net weight of 500 pounds (227 kg) of Level 3 aerosol products. 3. A combined net weight of 1,000 pounds (454 kg) of Level 2 and 3 aerosol products.
- **5104.5.2** Storage rooms greater than 500 square feet.
- The storage of aerosol products in flammable liquid storage rooms greater than 500 square feet (46 m²) in area shall not exceed the following quantities: 1. A net weight of 2,500 pounds (1135 kg) of Level 2 aerosol products. 2. A net weight of 1,000 pounds (454 kg) of Level 3 aerosol products. 3. A combined net weight of 2,500 pounds (1135 kg) of Level 2 and 3 aerosol products. The maximum aggregate storage quantity of Level 2 and 3 aerosol products permitted in separate inside storage rooms protected by an approved automatic sprinkler system in accordance with NFPA 30B shall be 5,000 pounds (2270 kg).

- **5104.6** Storage in liquid warehouses. The storage of Level 2 and 3 aerosol products in liquid warehouses shall be maintained in accordance with NFPA 30B. Unless otherwise approved by the applicable building code, the storage shall be maintained within segregated storage areas in accordance with Section 5104.3.2 and Sections 5104.6.1 through 5104.6.3.
- **5104.6.1** Containment. Where provided, spill control or drainage shall be maintained to prevent the flow of liquid to within 8 feet (2438 mm) of the segregated storage area.
- **5104.6.2** Sprinkler system.
- Sprinkler protection shall be maintained in accordance with Chapter 9.
- **5104.6.3** Opening protection into segregated storage areas.
- Fire doors or gates opening into the segregated storage area shall be maintained in accordance with Chapter 7 and remain in accordance with the applicable building code.
- **5104.7** Storage in Group M occupancies. Storage of Level 2 and 3 aerosol products in occupancies in Group M shall be maintained in accordance with Table **5104.7** unless otherwise approved in accordance with the applicable building code. Retail display shall be maintained in accordance with Section 5106. Keep table - operational storage limits
- **5106.1** General.
- This section shall apply to the retail display of 500 pounds (227 kg) or more of Level 2 and 3 aerosol products.
- **5106.2** Aerosol display and normal merchandising not exceeding 8 feet (2438 mm) high.
- Aerosol display and normal merchandising not exceeding 8 feet (2438 mm) in height shall be maintained in accordance with Sections 5106.2.1 through 5106.2.4.
- **5106.2.1** Maximum quantities in retail display areas. Aerosol products in retail display areas shall not exceed quantities needed for display and normal merchandising and shall not exceed the quantities in Table 5106.2.1.
- **5106.2.2** Display of containers. Level 2 and 3 aerosol containers shall not be stacked more than 6 feet (1829 mm) high from the base of the aerosol array to the top of the aerosol array unless the containers are placed on fixed shelving or otherwise secured in an approved manner. When storage or retail display is on shelves, the height of such storage or retail display to the top of aerosol containers shall not exceed 8 feet (2438 mm).
- **5106.2.3** Combustible cartons. Aerosol products located in retail display areas shall be removed from combustible cartons. Exceptions: 1. Display areas that use a portion of combustible cartons that consist of only the bottom panel and not more than 2 inches (51 mm) of the side panel are allowed. 2. When the display area is protected in accordance with Tables 6.3.2.7(a) through 6.3.2.7(l) of NFPA 30B, storage of aerosol products in combustible cartons is allowed 5106.2.4 Retail display automatic sprinkler system. When an automatic sprinkler system is required for the protected retail display of aerosol products, the wet-pipe automatic sprinkler system shall be maintained in accordance with Chapter 9 and remain in accordance with NFPA 13 of the applicable building code. 5106.3 Aerosol display and normal merchandising exceeding 8 feet (2438 mm) high. Aerosol display and merchandising exceeding 8 feet in height shall be maintained in accordance with Sections 5106.3.1 through 5106.3.3.

- **5106.3.1** Maximum quantities in retail display areas. Aerosol products in retail display areas shall not exceed quantities needed for display and normal merchandising and shall not exceed the quantities in Table 5106.2.1, with fire protection in accordance with Section 5106.3.2.
- **5106.3.2** Automatic sprinkler protection. Aerosol display and merchandising areas shall be protected by an automatic sprinkler system based on the requirements set forth in Tables 6.3.2.7(a) through 6.3.2.7(l) of NFPA 30B and the following:
 - 1. Protection shall be based on the highest level of aerosol product in the array and the packaging method of the storage located more than 6 feet (1829 mm) above the finished floor.
 - 2. When using the cartoned aerosol tables of NFPA 30B, uncartoned or display-cut Level 2 and 3 aerosols shall be permitted not more than 6 feet (1829 mm) above the finished floor.
 - 3. The design area for Level 2 and 3 aerosols shall extend not less than 20 feet (6096 mm) beyond the Level 2 and 3 aerosol display and merchandising areas.
 - 4. Where ordinary and high-temperature ceiling sprinkler systems are adjacent to each other, noncombustible draft curtains shall be maintained at the interface.
- **5106.3.3** Separation of Level 2 and 3 aerosol areas.
 - Separation of Level 2 and 3 aerosol areas shall comply with the following:
 - 1. Level 2 and 3 aerosol display and merchandising areas shall be separated from each other by not less than 25 feet (7620 mm). Also see Table 5106.2.1.
 - 2. Level 2 and 3 aerosol display and merchandising areas shall be separated from flammable and combustible liquids storage and display areas by one or a combination of the following:
 - 2.1. Segregating areas from each other by horizontal distance of not less than 25 feet (7620 mm).
 - 2.2. Isolating areas from each other by a noncombustible partition extending not less than 18 inches (457 mm) above the merchandise.
 - 2.3. In accordance with Section 5106.5.
 - 3. When Item 2.2 above is used to separate Level 2 or 3 aerosols from flammable or combustible liquids, and the aerosol products are located within 25 feet (7620 mm) of flammable or combustible liquids, the area below the noncombustible partition shall be liquid tight at the floor to prevent spilled liquids from flowing beneath the aerosol products.
- **5106.4 Maximum quantities in storage areas.** Aerosol products in storage areas adjacent to retail display areas shall not exceed the quantities in Table 5106.4.
 - Keep table - operational storage limits
- **5106.5** Special protection design for Level 2 and 3 aerosols adjacent to flammable and combustible liquids in double-row racks. The display and merchandising of Level 2 and 3 aerosols adjacent to flammable and combustible liquids in double-row racks shall be maintained in accordance with Sections 5106.5.1 through 5106.5.8 or Section 5106.3.3.
 - **5106.5.1 Fire protection.** Fire protection for the display and merchandising of Level 2 and 3 aerosols in double-row racks shall be maintained in accordance with Chapter 9, NFPA 30B and remain in accordance with the applicable building code.
 - 5106.5.2 Cartoned products. Level 2 and 3 aerosols displayed or merchandised more than 8 feet (2438 mm) above the finished floor shall be in cartons.
 - 5106.5.3 Shelving. Unless otherwise approved by the applicable building code, shelving in racks shall be maintained as wire mesh shelving having uniform openings not more than 6 inches (152 mm) apart, with the openings comprising at least 50 percent of the overall shelf area.

- **5106.5.4 Aisles.** Racks shall be maintained so that aisles not less than 71/2 feet (2286 mm) wide are maintained between rows of racks and adjacent solid-piled or palletized merchandise.
- **5106.5.5 Flue spaces.** Flue spaces in racks shall comply with the following: 1.Transverse flue spaces—Nominal 3-inch (76 mm) transverse flue spaces shall be maintained between merchandise and rack uprights. 2.Longitudinal flue spaces—Nominal 6-inch (152 mm) longitudinal flue spaces shall be maintained.
- **5106.5.6 Horizontal barriers.** Horizontal barriers of minimum 3/8-inch-thick (10 mm) plywood or minimum 0.034-inch (0.086 mm) (No. 22 gage) sheet metal shall be maintained in accordance with NFPA 30B when in-rack sprinklers are installed.
- **5106.5.7 Class I, II, III, IV and plastic commodities.**
- Class I, II, III, IV and plastic commodities located adjacent to Level 2 and 3 aerosols shall maintain protection from an approved NFPA 13 sprinkler system where required in accordance with the applicable building code.
- **5106.5.8 Flammable and combustible liquids.** Unless otherwise approved in accordance with the applicable building code, Class I, II, III A and III B Liquids shall be allowed to be maintained adjacent to Level 2 and 3 aerosol products when the following conditions are met: 1.Class I, II, IIIA and IIIB liquid containers: Containers for Class I, II, IIIA and IIIB liquids shall be limited to 1.06-gallon (4 L) metal-relieving and nonbelieving style containers and 5.3-gallon (20 L) metal-relieving style containers, and 2.Fire protection for Class I, II, IIIA and IIIB Liquids: Automatic sprinkler protection for Class I, II, IIIA and IIIB liquids shall be in accordance with Chapter 57.
- **(N)5107.1 General.** Manufacturing facilities shall be maintained in accordance with NFPA30B and remain in accordance with the applicable building code.

Chapter 53

- **5301.1 Scope.** Storage, use and handling of compressed gases in compressed gas containers, cylinders, tanks and systems shall remain in accordance with the applicable building code and be maintained in accordance with this chapter, and the use and handling provisions of NFPA 55, including those gases regulated elsewhere in this code.
- **5305.5 Venting.** Venting shall be maintained and operated in accordance with this chapter and remain in accordance with the applicable building code.

Chapter 54

- **5403.1** Quantities not exceeding the maximum allowable quantity per control area. The storage and use of corrosive materials in amounts not exceeding the maximum allowable quantity per control area shall be maintained in accordance with Sections 5001, 5003 and 5401.
- **5403.2** Quantities exceeding the maximum allowable quantity per control area. The storage and use of corrosive materials in amounts exceeding the maximum allowable quantity per control area shall be maintained in accordance with this chapter, chapter 50 and remain in accordance with the applicable building code for a high-hazard, group H occupancy.
- **5404.1.1 Liquid-tight floor.** In addition to the provisions of Section 5004.12, floors in storage areas for corrosive liquids shall remain as liquid-tight construction in accordance with the applicable building code.

- 5404.2.1 Above-ground outside storage tanks. Where secondary containment is provided for above-ground outside storage tanks of corrosive liquids, it shall be maintained in accordance with Section 5004.2.2.
- **5405.1.2** Ventilation. Where required, mechanical exhaust ventilation shall be maintained and used in accordance with the applicable building code.

Chapter 55

- **5503.6** Electrical wiring and equipment. Electrical wiring and equipment shall be maintained in accordance with NFPA 70 and Sections 5503.7.1 and 5503.7.2.
- **5504.2.1** Stationary containers. Stationary containers shall remain in accordance with the applicable building code and comply with the maintenance provisions of this section and those applicable to the type of fluid stored.
- **5504.2.1.2** Indoor storage areas. Cryogenic fluids in stationary containers stored indoors shall be stored in buildings, rooms or areas constructed for this use in accordance with the applicable building code.
- **5504.2.1.3** Ventilation. Storage areas for stationary containers shall be ventilated in accordance with the applicable building code.
- **5504.2.2.2** Indoor storage areas. Cryogenic fluids in portable containers stored indoors shall only be stored in buildings, rooms or areas constructed for this use in accordance with the applicable building code.
- **5504.2.2.3** Ventilation. Storage areas for portable containers shall be ventilated in accordance with the applicable building code.
- **5505.4.1.1** Ventilation. Ventilation required by the applicable building code shall be maintained and operated in areas where cryogenic fluids are dispensed. Exception: Cryogenic fluids that can be demonstrated not to create harmful vapors.

Chapter 56

- **5601.8.1.1** Mass-detonating explosives (Division 1.1, 1.2 or 1.5). The total net explosive weight of mass-detonating explosives (Division 1.1, 1.2 or 1.5) shall be used. See Table 5604.5.2(1) or Table 5605.3 as appropriate. Exception: When the TNT equivalence of the explosive material has been determined, the equivalence is allowed to be used to establish the net explosive weight.
- **5601.8.1.3** Combinations of mass-detonating and nonmass-detonating explosives (excluding Division 1.4). Combination of mass-detonating and nonmass-detonating explosives (excluding Division 1.4) shall be as follows: 1. When Division 1.1 and 1.2 explosives are located in the same site, determine the distance for the total quantity considered first as 1.1 and then as 1.2. The required distance is the greater of the two. When the Division 1.1 requirements are controlling and the TNT equivalence of the 1.2 is known, the TNT equivalent weight of the 1.2 items shall be allowed to be added to the total explosive weight of Division 1.1 items to determine the net explosive weight for Division 1.1 distance determination. See Table 5604.5.2(2) or Table 5605.3 as appropriate. 2. When Division 1.1 and 1.3 explosives are located in the same site, determine the distances for the total quantity considered first as 1.1 and then as 1.3. The required distance is the greater of the two. When the Division 1.1 requirements are controlling and the TNT equivalence of the 1.3 is known, the TNT equivalent weight of the 1.3 items shall be allowed to be added to the total explosive weight of Division 1.1 items to determine the net explosive weight for Division 1.1 distance determination.

See Table 5604.5.2(1), 5604.5.2(2) or 5605.3, as appropriate. 3. When Division 1.1, 1.2 and 1.3 explosives are located in the same site, determine the distances for the total quantity considered first as 1.1, next as 1.2 and finally as 1.3. The required distance is the greatest of the three. As allowed by paragraphs 1 and 2 above, TNT equivalent weights for 1.2 and 1.3 items are allowed to be used to determine the net weight of explosives for Division 1.1 distance determination. Table 5604.5.2(1) or 5605.3 shall be used when TNT equivalency is used to establish the net explosive weight. 4. For composite pyrotechnic items Division 1.1 and Division 1.3, the sum of the net weights of the pyrotechnic composition and the explosives involved shall be used. See Tables 5604.5.2(1) and 5604.5.2(2).

- **5605.6.4.1** Magazines. Magazines used for storage in processing areas shall be in accordance with the requirements of Section 5604.5.1. All explosive materials shall be removed to appropriate storage magazines for unattended storage at the end of the work day. The contents of indoor magazines shall be added to the quantity of explosives contained at individual workstations and the total quantity of material stored, processed or used shall be utilized to establish the intraplant separation distances indicated by Table 5605.3 or 5604.5.2(3), as appropriate.

Vote: Unanimous

Motion Action: Motion Carries

ADMINISTRATION, POLICY AND FINANCE COMMITTEE BUSINESS

REPORT FROM ADMINISTRATION, POLICY AND FINANCE COMMITTEE

No Meeting Held

GRANTS AND FINANCE REPORT FROM THE VDFP CHIEF ADMINISTRATION OFFICER

1. FY2020 Live Structure Budget

- a. Live Structure Obligations/Availability as of August 2019
 - i. **Cash on hand:** \$3,948,827
 - ii. **Unobligated:** \$468,518

2. Aid to localities –As of August 2019

FY-2019 Fire Programs Fund Aid to Localities Payments

Pay Cycle	Date Pymt. Requested	No. of Localities	% of Localities	Amount	% of Funds
1	9-21-18	147	45.5%	\$14,567,405	50.7%
2	12-12-18	41	12.7%	\$4,474,459	15.6%
3	3-22-19	57	17.6%	\$3,841,615	13.4%
4	6-22-19	66	20.4%	\$5,620,971	19.6%
5	7-12-19	7	2.2%	\$173,839	0.6%
6	8-1-19	1	0.00309598	\$10,000.00	0.0%
Funds Released		319	98.8%	\$28,688,289	99.9%
Total Funds Not Released		4	1.2%	\$40,002	0.1%
AtL Total		323	100.0%	\$28,728,291	100.0%

Forfeitures FY19

349	Crewe (Town)	\$10,000
395	Keller (Town)	\$10,000
428	Pamplin City (Town)	\$10,000
447	Saint Charles (Town)	\$10,000
Total		\$40,000

REPORT FROM THE LIVE FIRE STRUCTURE COMMITTEE

Unfinished Business

NA

New Business

Topic: Green County Fire and EMS Study

Motion: To approve the Green County Fire and EMS Study.

Discussion: The Board approved to conduct the Green County Fire and EMS Study.

Vote: Unanimous

Action: Motion Carries

COMMENTS FROM THE CHAIRMAN

Walter Bailey thanked everyone for attending. There was a brief discussion on the FSTRS

FULL BOARD BUSINESS

UNFINISHED BUSINESS

N/A

NEW BUSINESS

Topic: FY20 Rules and Procedure Re-signing.

Motion: Approved to sign the updated RR per Code of Virginia changes.

Topic Discussion: The updated R and R was approved.

Vote: Unanimous

Action: Motion Carries

Topic: FY20 Memorandum of Understanding Re-signing.

Motion: Approve to sign the FY20 MOU.

Topic Discussion: Unanimously approved to sign the FY20 MOU.

Vote: Unanimous

Action: Motion Carries

Topic: Committee Assignments

Motion: N/A

Topic Discussion: Board Chair, Walter Bailey advised the board members to send him an email advising their specific request for committee assignments.

Vote: N/A

Action: N/A

Topic: Fall Board Meeting

Motion: N/A

Topic Discussion: The Board were advised of an upcoming October – November conference in Virginia Beach. The board has not made a decision for their next meeting.

Vote: N/A

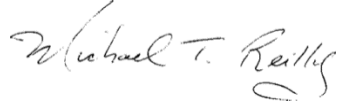
Action: N/A

ADJOURNMENT

The Board adjourned at 11:45am

Clerk of the Committee

REVIEWED BY:



Friday, August 9, 2019

Michael T. Reilly
Executive Director

Date

Enclosures:

Enclosure 1 – Five Year Training Plan

Virginia Fire Services Board

MOTION

Committee (check one): Fire Education & Training Fire Prevention & Control
 Finance Administration & Policy Virginia Fire Services Board

Date: 07/09/2019

Motion made by: Committee or name: Fire Education & Training (Jim Calvert)

Second (if required): _____

Signature of presenter of motion: James Alan Calvert

MOTION TO:
Approve the Virginia Five Year Strategic Training Plan as approved by the Fire Education & Training Committee.

Amended: (y/n) _____

Motion Carried: <u>X</u>	Vote: Unanimous: <u>X</u>
Motion Failed: _____	Majority: _____
	Abstentions: _____

Virginia Fire Services Board

MOTION

Committee (check one): Fire Education & Training Fire Prevention & Control
 Finance Administration & Policy Virginia Fire Services Board

Date: 08/09/2019

Motion made by: Committee or name: A. LEE DAVIS III

Second (if required): JAMES STOKELY

Signature of presenter of motion: [Signature]

MOTION TO:

APPROVE 5 YEAR STRATEGIC TRAINING PLAN

Amended: (y/n)

Motion Carried: _____

Vote: Unanimous: _____

Motion Failed: _____

Majority: _____

Abstentions: _____

Virginia Fire Services Board

MOTION

Committee (check one): Fire Education & Training Fire Prevention & Control
 Finance Administration & Policy Virginia Fire Services Board

Date:

8/9/19

Motion made by:

Committee or name:

H. LEE DAVIS

Second (if required):

as by act

Signature of presenter of motion:



MOTION TO:

Approve MOW - 2019 VFSB

Amended: (y/n)

Motion Carried: _____

Vote: Unanimous: _____

Motion Failed: _____

Majority: _____

Abstentions: _____

Virginia Fire Services Board

MOTION

Committee (check one): Fire Education & Training Fire Prevention & Control
 Finance Administration & Policy Virginia Fire Services Board

Date: 8/9/19

Motion made by: Committee or name: H. LEEDAY III

Second (if required): James Alcatraz

Signature of presenter of motion: [Signature]

MOTION TO:
Approve and sign the updated
Rules and procedure

Amended: (y/n)

Motion Carried: _____	Vote: Unanimous: _____
Motion Failed: _____	Majority: _____
	Abstentions: _____

Virginia Fire Services Board

MOTION

Committee (check one): Fire Education & Training Fire Prevention & Control
 Finance Administration & Policy Virginia Fire Services Board

Date: 8/9/19

Motion made by: Committee or name: H. LEE DAVIS III

Second (if required): BETTYE REEVES NOBLES

Signature of presenter of motion: [Signature]

MOTION TO:
Approve Greene County fire
and EMS Study

Amended: (y/n)

Motion Carried: _____	Vote: Unanimous: _____
Motion Failed: _____	Majority: _____
	Abstentions: _____

Virginia Fire Services Board

MOTION

Committee (check one): Fire Education & Training Fire Prevention & Control *Code or Standards Comm.*
 Finance Administration & Policy Virginia Fire Services Board

Date: 7/18/19

Motion made by: Committee or name: Ernie Little

Second (if required): Mike Perdue

Signature of presenter of motion: Ernie Little

MOTION TO:

Approve the committee's recommendations to Chapters
50, 51, 53, 54, 55 and 56 of the 2018 Virginia Statewide
Fire Prevention Code. These changes will be submitted
to the 2018 Code Development process for consideration
at the workgroup session

Amended: (y/n)

Motion Carried:

Vote: Unanimous:

Motion Failed:

Majority:

Abstentions:

Updated: 8/14/2019

**VIRGINIA
FIVE YEAR STRATEGIC
TRAINING PLAN**



Fiscal Years 2020 to 2024

Effective August 1, 2019

Prepared by:
Virginia Fire Services Board
Virginia Department of Fire Programs

Updated: 8/14/2019

**Message from the Fire Education and Training Committee
Dr. Jimmy Calvert, Chair**

We are pleased to present the Five-Year Strategic Training Plan for the Virginia Fire Services Board. This plan outlines the Virginia Fire Services Board's critical goals and objectives related to fire service training. This plan shall serve as a guide for enhancing existing training services while building on new initiatives to assist the Virginia Department of Fire Programs and Virginia's Fire Services Stakeholders in meeting their goals of saving lives and protecting property.

The foundation for this plan was established as a joint venture between the Virginia Fire Services Board, stakeholder groups, and the Virginia Department of Fire Programs staff. Our goal was to develop a strategic training plan that would outline the goals for the next five years and beyond. The plan is to be considered a living document. As current goals are achieved, new goals will be added as needed in order to meet the changing needs of the stakeholder groups. The plan will be reviewed and updated annually. By implementing the plan the stakeholders will be able to continue fulfilling their mission of saving lives and protecting property.

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Virginia Fire Services Board

The Virginia Fire Services Board is created within the Virginia Department of Fire Programs pursuant to [§ 9-1-202 of the Code of Virginia](#). Further, pursuant to [§9.1-203, A, 2 of the Code of Virginia](#) the Board is given the authority for this Five-Year Strategic Training Plan, as seen below.

About the Fire Education & Training Committee

The Committee on Fire Education and Training shall be responsible for providing information and making recommendations to the Virginia Fire Services Board on developing a five-year (5) statewide plan for fire education and training, providing technical assistance and advice to local fire departments and fire service organizations and local governments; developing personnel standards for fire service personnel; providing criteria for training schools for fire service personnel and rendering assistance to local fire departments and volunteer fire companies in training firefighters.

About the Five Year Strategic Training Plan

This document provides goals and objectives to address strategic training issues for the fire service in the Commonwealth of Virginia. For the purposes of this document, a goal is a broad statement of the long-term results needed to accomplish the organization's mission and achieve its vision. An objective is a description of the results that, when achieved, move an organization toward its stated goal(s).

The Fire Education & Training Committee, with input from Virginia's fire service stakeholders and the Division Chiefs of the Virginia Department of Fire Programs, has developed this Five Year Strategic Training Plan. This document will be updated *annually* through continued stakeholder feedback and the inclusion of emerging strategic issues in the fire service community.

[§ 9.1-203. Powers and duties of Virginia Fire Services Board; limitation.](#)

- A. The Board shall have the responsibility for promoting the coordination of the efforts of fire service organizations at the state and local levels. To these ends, it shall have the following powers and duties to:
 1. Ensure the development and implementation of the Virginia Fire Prevention and Control Plan;
 2. Review and approve a five-year statewide plan for fire education and training;
 3. Approve the criteria for and disbursement of any grant funds received from the federal government and any agencies thereof and any other source and to disburse such funds in accordance therewith;

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4. Provide technical assistance and advice to local fire departments, other fire services organizations, and local governments through Fire and Emergency Medical Services studies done in conjunction with the Department of Fire Programs;
 5. Advise the Department of Fire Programs on and adopt personnel standards for fire services personnel;
 6. Advise the Department of Fire Programs on the Commonwealth's statewide plan for the collection, analysis, and reporting of data relating to fires in the Commonwealth;
 7. Make recommendations to the Secretary of Public Safety and Homeland Security concerning legislation affecting fire prevention and protection and fire services organizations in Virginia;
 8. Evaluate all fire prevention and protection programs and make any recommendations deemed necessary to improve the level of fire prevention and protection in the Commonwealth;
 9. Advise the Department of Fire Programs on the Statewide Fire Prevention Code; and
 10. Investigate alternative means of financial support for volunteer fire departments and advise jurisdictions regarding the implementation of such alternatives.
- B. Except for those policies established in § [38.2-401](#), compliance with the provisions of § [9.1-201](#) and this section and any policies or guidelines enacted pursuant thereto shall be optional with, and at the full discretion of, any local governing body and any volunteer fire department or volunteer fire departments operating under the same corporate charters.

Five Year Strategic Training Plan

1. Goal 1 – Improve the use of technology within the daily operations of Training and Education. (FY 2019)

Objectives

1. Find innovative methods to reduce the total amount of paperwork burden imposed on stakeholders.
 - a. Allow stakeholder to submit training request online.
 - b. Provide electronic course paperwork to the locality and/or instructors.
 - c. Online only student and course registration.
2. Reduce the school processing times within the agency.
 - a. Streamline processes to reduce course processing times within the agency.
 - b. Online student feedback
 - c. Online certification printing

2. Goal 2 – Improve the safe execution, program compliance documentation, and inspection records of NFPA 1403 Compliance in live fire training programs. (FY 2019)

Objectives

1. Provide students with safe live fire training evolutions in properly inspected facilities.
 - a. Create required documentation packages that will assist the VDFP Funded Live Fire Facilities in safely performing live fire evolutions and the completion of the required inspections according to NFPA 1403.
 - b. Develop and communicate the execution, documentation, and inspection policy changes/expectations to educate the VDFP Funded Facility Owners on the purpose of the policy change (e.g. safe execution of live fire evolutions, prevention of live fire facility damage due to facility misuse, traceability of live fire facility use and inspection, etc.).

3. Goal 3 – Implement Fire Instructor of the Year Program - One per Division (FY 2019)

Objectives

1. Develop Criteria/ Eligibility for Fire Instructor of the Year Program.
2. Develop an application process for Fire Instructor of the Year.
3. Develop submission time frames for potential award recipients.

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4. Award individual Division Fire Instructor of the Year annually at the Virginia Fire Chief's Conference while also awarding Commonwealth Fire Instructor of the Year award annually at the Virginia State Firefighters Conference.
 - a. Commonwealth Fire Instructor of the year will be chosen from Division Fire Instructor award recipients.

4. Goal 4 – Transition to a computer-based testing component for written examinations. (FY 2019)

Objectives

1. Provide students with test results in a timely manner.
2. Provide students with an assessment of strengths and weaknesses of test results.
 - a. Correlate the testing to specific JPR's.
 - b. Provide feedback to students on their overall test results as it relates to the specific JPR's.
3. Allow the agency to better understand the pass/ fail percentages within each discipline.

5. Goal 5 – Evaluate the required class hours and testing component of the certification training programs. (FY 2020)

Objectives

- a. Evaluate the current certification class hours in relation to the regulatory requirements and perform an evaluation of possible/needed training program changes.
- b. Seek input from stakeholder regarding the class time and resource requirements and practical and written examination measurements.
 - a. Receive feedback from stakeholder as to whether the written and practical testing should be measured together or independently.

6. Goal 6 – Improve the documentation of the fire department membership rosters for the Commonwealth. (FY 2019)

Objectives

1. Update the Virginia Department of Fire Programs Database for the Commonwealth of Virginia fire department membership.
 1. Allow the agency to ensure the accuracy of their training database to permit more comprehensive evaluations of the training needs of the Commonwealth Firefighters.
 2. Improve the documented membership of the Commonwealth of Virginia Fire Departments to allow for efficient execution of line of duty related fatalities

and disease presumption benefits evaluations (Line of Duty Act § 9.1-400).

7. Goal 7 – Collaborate with the Virginia Department of Education to investigate offering Firefighter I & II curriculums components as part of the Commonwealth Science and Technology Centers. (FY 2020)

Objectives

1. Utilize Governor Northam’s “Virginia is for Learners” Education Initiative of maximizing the potential of all students to meet the needs of the Commonwealth’s Fire Service. With the current projected need of the fire service related to the reduction of volunteerism, this program could assist the training of the next generation of the Commonwealth’s Fire Service for both career and volunteer ranks. This initiative could ensure that the Commonwealth’s public education system is positioned to achieve equitable academic outcomes for students to become interested in the fire service as a career.

8. Goal 8 – Investigate partnerships with private industry representatives to obtain alternative means of financial support for volunteer fire departments and advise jurisdictions regarding the implementation of such alternatives. (FY 2021)

Objectives

1. Develop an informational program that outlines the importance of the volunteer fire service to the business continuity of members of private industry.
2. Communicate the training needs of the Commonwealth of Virginia’s Volunteer Fire Service and private industries potential role in meeting this need while enhancing their emergency preparedness and business continuity needs.

9. Goal 9 – Increase the availability and awareness of training programs throughout the Commonwealth. (Annually)

Objectives

1. Research and provide feasibility and cost analysis study of training throughout the Commonwealth.
 - a. Determine an approximate cost per year that the agency would incur with increased training.
 - i. Review cost saving strategies to provide additional training at a reduced cost.

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2. Seek and develop alternative educational opportunities for current and potential students to enhance their professional development through advanced training courses (e.g. National Fire Academy, Department of Homeland Security, etc.).
 3. Determine and implement alternative learning platforms that would allow students greater access to training.
 - a. Online course availability
 - b. Distant learning opportunities
 4. Conduct at least seven (7) stakeholder feedback sessions per year to receive input on additional training needs and course opportunities throughout the Commonwealth.
 5. Pursue grant opportunities to enhance training availability throughout the Commonwealth.
 6. Improve public/private partnership collaboration to enhance training opportunities.
 7. Review and collaborate with the Virginia Community College System (VCCS) to provide a crosswalk between VDFP delivered programs and Virginia Community College Programs.
 8. Utilization of 18 month training calendar
 - a. Provide students with an awareness of training opportunities over the course of 12-18 months.
 - b. Assist the agency with course scheduling amongst the different training divisions.
 - c. Strategically plan and place courses to ensure full course enrollment to better utilize agency funding.
- 10. Goal 10- Provide up-dated and accurate information on policies and procedures related to training. (Annually)**

Objectives

1. Update the Department of Fire Program's Training Policies and Procedures manual every five (5) years or sooner.
2. Conduct at least 14 Instructor in-service updates annually to provide guidance and receive input to enhance training needs throughout the Commonwealth.
3. Keep the most current forms, policies, and procedures located on the agency's website.

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Agency Accreditation

Virginia Department of Fire Program's visit for Pro-Board will be in the November 2019 timeframe with IFSAC visitation scheduled for October 2019. The Agency's objective is to be dually accredited with the same levels.

In order to accomplish the reaccreditation effort, the Agency will have to complete an extensive review of all policies as it relates to testing as well as ensure each of the programs has all the required documentation. The first step is to educate the fire service what the accreditation is/is not. NFPA-1000-17 Standard for Fire Service Professional Qualification Accreditation and Certification Systems was updated since the last site visit.

ProBoard Accredited

NFPA Standard	No.	Levels to which Agency is Accredited
Firefighter	1001	Firefighter I, II
Driver/Operator	1002	Pumper, Aerial
Airport Firefighter	1003	Airport Firefighter
Marine Firefighter	1005	Marine Firefighter
Rescue Technician	1006	Rope Rescue I/II; Trench Rescue I/II; Confined Space Rescue I/II; Vehicle I, II, I/II; Machinery I, II, I/II
Fire Officer	1021	Fire Officer I, II, III, IV
Fire Inspector	1031	Fire Inspector I, II, I/II
Fire Investigator	1033	Fire Investigator
Public Fire Educator	1035	Public Fire Educator I, II
Fire Instructor	1041	Fire Instructor I, II, III
Haz Mat	472	Awareness; Operations Core; Operations Mission Specific: PPE & Product Control

IFSAC Accredited

NFPA Standard	No.	Levels to which Agency is Accredited
Hazardous Materials	472	Awareness
Fire and Life Safety Educator	1035	Level I, II
Fire Inspector	1031	Level I, II
Fire Investigator	1033	Investigator

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NFPA Standard Revision Cycle

2019-2023 (Revision Date)

The agency is accredited to the Standards that are **bolded**. The goal is to ensure it meets the needs of the first responder community and ensure it is compliant with the applicable NFPA Standard. The revision cycle for NFPA Standards (every three to five years)

2019	2020	2021	2022	2023
1021 Fire Officer Professional Qualifications (2014)	1031 Fire Inspector and Plan Examiner Professional Qualifications (2014)	1000 Fire Service, Public Safety and Related Personnel to Professional Qualifications Accreditation and Certification Systems (2017)	1001 Fire Fighter Professional Qualifications (2019)	1041 Fire Service Instructor and Emergency Services Professional Qualifications (2019)
1521 Fire Department Safety Officer Professional Qualifications (2015)	1033 Fire Investigator Professional Qualifications (2014)	1072 Haz-Mat/WMD Emergency Response Personnel Professional Qualifications (2017)	1081 Industrial Fire Brigade Personnel Professional Qualifications (2018)	1003 Airport Fire Fighter Professional Qualifications (2019)
1051 Wildland Fire Fighting Personnel Professional Qualifications (2016)	1035 F&LSE, PIO, YFIS, and YFPM Professional Qualifications (2015)	1006 Technical Rescuer Professional Qualifications (2017)	1026 Incident Management Personnel Professional Qualifications (2018)	1005 Marine Fire Fighting for Land-Based Fire Fighters Professional Qualifications (2019)
1071 Emergency Vehicle Technician Professional Qualifications (2016/2020)	1037 Fire Marshal Professional Qualifications (2016)	1002 Fire Apparatus Driver/Operator Professional Qualifications (2017)	1061 Public Safety Telecommunication Personnel Professional Qualifications (2018)	1091 Traffic Control Incident Management Personnel Professional Qualifications (2019)

influences the review and updating of VDFP programs.

Currently, the Agency ensures it updates the program and testing within the allotted 24 months of the release of a new edition.

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Over the next five years, VDFP expects to be requested on extending its accreditation for standards such as NFPA-1026 Incident Management Personnel and NFPA-1091 Traffic Incident Management.

The Agency's reaccreditation is scheduled for completion by Calendar Year 2019. Therefore, VDFP should identify any new levels within the current standard it is accredited for and/or address the need to extend to a new standard so it can be completed as part of the upcoming submission to the accreditation organizations.

Training funding and Spending Allocations

Approximately \$4.5 million allocated towards training

Training Program Support	\$1.8 Million	42%
Direct Delivery of Training	\$1.8 Million	42%
Office and Equipment Rentals	\$354,000.00	9%
New Training Equipment	\$200,000.00	4%
Equipment Maintenance/ Repair	\$200,000.00	4%