

- 8. Discussion and possible action regarding proposed rule changes to title 37 TAC, Chapter 435, Fire Fighter Safety, including but not limited to, §435.3, Self-Contained Breathing Apparatus.**

# Chapter 435

## FIRE FIGHTER SAFETY

### §435.1. Protective Clothing.

- (a) A regulated fire department shall:
- (1) purchase, provide, and maintain a complete set of protective clothing for all fire protection personnel who would be exposed to hazardous conditions from fire or other emergencies or where the potential for such exposure exists. A complete set of protective clothing shall consist of garments including bunker coats, bunker pants, boots, gloves, helmets, and protective hoods, worn by fire protection personnel in the course of performing fire-fighting operations;
  - (2) ensure that all protective clothing which are used by fire protection personnel assigned to fire suppression duties comply with the minimum standards of the National Fire Protection Association suitable for the tasks the individual is expected to perform. The National Fire Protection Association standard applicable to protective clothing is the standard in effect at the time the entity contracts for new, rebuilt, or used protective clothing; and
  - (3) maintain and provide upon request by the Commission, a departmental standard operating procedure regarding the use, selection, care, and maintenance of protective clothing which complies with NFPA 1851, Standard on Selection, Care, and Maintenance of Structural Fire Fighting Protective Ensembles.
- (b) An entity may continue to use protective clothing in use or contracted for before a change in the National Fire Protection Association standard, unless the Commission determines that the protective clothing constitutes an undue risk to the wearer, in which case the Commission shall order that the use be discontinued and shall set an appropriate date for compliance with the revised standard.
- (c) Protective clothing in use or contracted for prior to January 1, 2002, shall be exempted from the record keeping requirements contained in Section 2.3, Records, of NFPA 1851.

### §435.3. Self-Contained Breathing Apparatus.

The employing entity shall:

- (1) purchase, provide, and maintain a complete self-contained breathing apparatus for each on-duty fire protection personnel who engage in operations where IDLH atmospheres may be encountered, where the atmosphere is unknown or would be exposed to hazardous atmospheres from fire or other emergencies or where the potential for such exposure exists;
- (2) ensure that all self-contained breathing apparatus used by fire protection personnel complies with the minimum standards of the National Fire Protection Association identified in NFPA 1981, Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire Fighters.
  - (A) the National Fire Protection Association standard applicable to a self-contained breathing apparatus is the standard in effect at the time the entity contracts for new, rebuilt, or used self-contained breathing apparatus;
  - (B) an entity may continue to use a self-contained breathing apparatus in use or contracted for before a change in the National Fire Protection Association standard, unless the Commission determines that the continued use of the self-contained breathing apparatus constitutes an undue risk to the wearer, in which case the Commission shall order that the use be discontinued and shall set an appropriate date for compliance with the revised standard;
- (3) develop an air quality program that complies with the most recent edition of the NFPA 1989 Standard on Breathing Air Quality for Emergency Services Respiratory Protection;

- (4) maintain and supply upon request by the Commission, records and reports documenting compliance with Commission requirements concerning self-contained breathing apparatus and breathing air. Records of all tests shall be made and the records shall be retained for a period of no less than three years;
- (5) maintain and provide upon request by the Commission, a departmental standard operating procedure regarding the use of self-contained breathing apparatus; and
- (6) maintain and provide upon request by the Commission, a department standard operating procedure regarding the selection, care, and maintenance of self-contained breathing apparatus that complies with the most recent edition of the NFPA 1852 Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA).

#### **§435.5. Commission Recommendations.**

The commission recommends that all employing entities use as a guide the following publications:

- (1) NFPA 1403 "Live Fire Training Evolutions";
- (2) NFPA 1500 "Fire Department Occupational Safety and Health Program;"
- (3) IAFF/IAFC - "Fire Service Joint Labor Management Wellness-Fitness Initiative."

#### **§435.7. Fire Department Staffing Studies.**

- (a) Section 419.022(a)(4) Texas Government Code provides that the commission may "on request, assist in performing staffing studies of fire departments." Staffing studies must take into consideration all the objectives and missions of the fire department. The commission does not have the resources or the staff to directly assist in performing the necessary tasks to perform a staffing study. Many staffing studies have been developed that can be used to assist in evaluating the needs of a fire department.
- (b) A city should ultimately decide on the level of fire protection it is willing to provide to its citizens. The city and fire department should, as a minimum, address the needs of prevention, investigation and suppression as outlined in the appropriate NFPA Standards. That decision should be based on facts, the safety of its citizens, and the safety of the fire fighters providing that protection.
- (c) The commission will assist by maintaining information pertinent to fire department staffing. The information shall be maintained in the Ernest A. Emerson Fire Protection Resource Library at the Texas Commission on Fire Protection. Copies shall be made available, free of charge, to anyone requesting such information to the extent permitted by copyright laws.

#### **§435.9. Personal Alert Safety System (PASS).**

The employing entity shall:

- (1) purchase, provide, and maintain a PASS device for each on duty fire protection personnel who engage in operations where IDLH atmospheres may be encountered, or where the atmosphere is unknown, or where hazardous conditions from fire or other emergencies exist, or where the potential for such exposure exists;
- (2) ensure that all PASS devices used by fire protection personnel comply with the minimum standards of the National Fire Protection Association identified in NFPA 1982, Standard on Personal Alert Safety Systems (PASS) for Fire Fighters:
  - (A) the National Fire Protection Association standard applicable to a PASS device is the standard in effect at the time the entity contracts for new, rebuilt, or used PASS devices;

- (B) an entity may continue to use a PASS device that meets the requirements of an earlier edition of NFPA 1982, unless the commission determines that the continued use of the PASS device constitutes an undue risk to the wearer, in which case the commission shall order that the use be discontinued and shall set an appropriate date for compliance with the revised standard;
- (3) ensure that the PASS device assigned to an individual user be inspected at the beginning of each duty period and before each use.
- (4) maintain and provide upon request by the commission, a departmental standard operating procedure regarding the proper use, selection, care and maintenance of PASS devices.

#### **§435.11. Incident Management System (IMS)**

- (a) The fire department shall develop, maintain and use an incident management system.
- (b) The incident management system shall:
  - (1) include a written operating procedure for the management of emergency incidents;
  - (2) require that the IMS be used at all emergency incidents;
  - (3) require operations to be conducted in a manner that recognizes hazards and assists in the prevention of accidents and injuries;
  - (4) require that all fire protection personnel be trained in the use of the IMS; and
  - (5) require that the IMS be applied to all drills, exercises and all other situations that involve hazards similar to those encountered at an actual emergency.
- (c) The IMS shall meet the requirements of the applicable sections of the National Fire Protection Association 1561, Standard on Fire Department Incident Management System.
- (d) The Commission recommends departments follow the National Incident Management System (NIMS) when developing their incident management system.

#### **§435.13. Personnel Accountability System.**

- (a) The fire department shall develop, maintain and use a personnel accountability system that provides for a rapid accounting of all personnel at an emergency incident.
- (b) The accountability system shall:
  - (1) require all fire protection personnel be trained in the use of the accountability system;
  - (2) require that the fire protection personnel accountability system be used at all incidents;
  - (3) require that all fire protection personnel operating at an emergency incident to actively participate in the personnel accountability system; and
  - (4) require that the incident commander be responsible for the overall personnel accountability system for the incident.
- (c) The fire department shall be responsible for developing the system components required to make the personnel accountability system effective.

- (d) The personnel accountability system shall meet the minimum standards required by the National Fire Protection Association 1561, Standard on Fire Department Incident Management System. If the standard is revised, the fire department shall have one (1) year from the effective date of the new standard to comply.

#### **§435.15. Operating At Emergency Incidents.**

- (a) The fire department shall develop, maintain and use a standard operating procedure for fire protection personnel operating at emergency incidents.
- (b) The standard operating procedure shall:
  - (1) specify an adequate number of personnel to safely conduct emergency scene operations;
  - (2) limit operations to those that can be safely performed by personnel at the scene;
  - (3) require all personnel to be trained in and use the standard operating procedures; and
  - (4) comply with §435.17 (Procedures for Interior Structural Fire Fighting).
- (c) The fire department may use standards established by the National Fire Protection Association for fire protection personnel operating at an emergency incident.

#### **§435.17. Procedures for Interior Structural Fire Fighting (2-In/2-Out Rule).**

- (a) The fire department shall develop written procedures that comply with the Occupational Safety and Health Administration's Final Rule, 29 CFR Section 1910.134(g)(4) by requiring:
  - (1) a team of at least four fire protection personnel must be assembled before an interior fire attack can be made when the fire has progressed beyond the incipient stage;
  - (2) at least two fire protection personnel to enter the IDLH atmosphere and remain in visual or voice (not radio) contact with each other;
    - (A) Visual means that the fire protection personnel must be close enough to see each other.
    - (B) Voice means that the fire protection personnel of the entry team must be close enough to speak to one another without the use of radios.
  - (3) at least two fire protection personnel remain located outside the IDLH atmosphere to perform rescue of the fire protection personnel inside the IDLH atmosphere;
  - (4) all fire protection personnel engaged in interior structural fire fighting use self-contained breathing apparatus and be clothed in a complete set of protective clothing as identified in Chapter 435;
  - (5) all fire protection personnel located outside the IDLH atmosphere be equipped with appropriate retrieval equipment where retrieval equipment would contribute to the rescue of the fire protection personnel that have entered the IDLH atmosphere;
  - (6) one of the outside fire protection personnel must actively monitor the status of the inside fire protection personnel and not be assigned other duties. The second outside fire protection personnel may be assigned to an additional role, including, but not limited to, incident commander, safety officer, driver-operator, command technician or aide, or fire fighter/EMS personnel, so long as this individual is able to perform assistance or rescue activities without jeopardizing the safety or health of any fire protection personnel working at the scene;

- (7) the fire protection personnel outside the IDLH atmosphere must remain in communication (including, but not limited to, radio) with the fire protection personnel in the IDLH atmosphere. Use of a signal line (rope) as a communications instrument for interior fire fighting is not permitted by the commission. This does not preclude the use of rescue guide ropes (guide line or lifeline or by what ever name they may be called) used during structural searches; and
  - (8) each outside fire protection personnel must have a complete set of protective clothing and self-contained breathing apparatus, as identified in Chapter 435, immediately accessible for use if the need for rescue activities inside the IDLH atmosphere is necessary.
- (b) The fire department shall comply with the 2-in/2-out rule as described in this section except in an imminent life-threatening situation when immediate action could prevent the loss of life or serious injury before the team of four fire protection personnel are assembled.

#### **§435.19. Enforcement of Commission Rules.**

- (a) The Commission shall enforce all Commission rules at any time, including, but not limited to, Commission investigations, fire department inspections, or upon receiving a written complaint from an identified person or entity of an alleged infraction of a Commission rule.
- (b) The Commission shall not provide prior notification of an inspection to a fire department.
- (c) Upon receipt of a signed complaint alleging a violation of a Commission rule, the Commission shall have 30 days to initiate an investigation and report back to the complainant its progress.
- (d) Upon substantiating the validity of a written complaint, the Commission shall follow the procedures outlined in Government Code, Chapter 419, §419.011(b) and (c).

#### **§435.21. Fire Service Joint Labor Management Wellness-Fitness Initiative.**

- (a) A fire department shall assess the wellness and fitness needs of the personnel in the department. The procedure used to make this assessment shall be written and made available for commission inspection.
- (b) A fire department shall develop and maintain a standard operating procedure to address those needs.
- (c) The approach to the fitness needs of the department shall be based on the local assessment and local resources.
- (d) The standard operating procedure shall be made available to the commission for inspection.

#### **§435.23. Fire Fighter Injuries.**

- (a) A fire department shall report all Texas Workers' Compensation Commission reportable injuries that occur to on-duty regulated fire protection personnel on the Commission form.
- (b) Minor injuries are those injuries that do not result in the fire fighter missing more than one duty period or does not involve the failure of personal protective equipment. Minor injuries shall be reported within 30 business days of the injury event.
- (c) Major injuries are those that require the fire fighter to miss more than one duty period. Major injuries shall be reported within five business days of the injury event.
- (d) Investigatable injuries are those resulting from the malfunction of personal protective equipment, failure of personal protective equipment to protect the fire fighter from injury, or injuries sustained from failure to comply with any provision of Commission mandated department SOPs. Investigatable injuries shall be reported within five business days of the injury event.
- (e) The regulated entity shall secure any personal protective equipment involved in a fire fighter injury and shall be made available to the Commission for inspection.

#### **§435.25. Courage to be Safe So Everyone Goes Home Program.**

- (a) In an effort to improve firefighter safety in the State of Texas, all regulated entities will ensure that the National Fallen Firefighters Foundation's "Courage to be Safe So Everyone Goes Home" program be completed as part of the continuing education required for certified fire protection personnel by December 1, 2015. Individuals will be credited with four hours of continuing education credit for completing this program.
- (b) All regulated fire protection personnel must complete the National Fallen Firefighters Foundation's "Courage to be Safe So Everyone Goes Home" program prior to December 1, 2015.
- (c) All fire protection personnel appointed after December 1, 2015 will be required to complete the National Fallen Firefighters Foundation's "Courage to be Safe So Everyone Goes Home" program training within one year of appointment to a fire department.
- (d) Departments will report the completion of training through the Commission web based reporting system.
- (e) Failure to complete the National Fallen Firefighters Foundation's "Courage to be Safe So Everyone Goes Home" program before the required deadlines will be considered a violation of continuing education rules found in Chapter 441 of the Commission's Standards Manual.

#### **§435.27. Live Fire Training Structure Evolutions.**

The most current edition of NFPA 1403; Standard on Live Fire Training Structure Evolutions, shall be used as a guide when developing standard operating procedures for conducting live fire training. The following requirements shall apply for all Live Fire Training Structure Evolutions conducted.

- (1) The officer in charge or instructor will insure that the water supply rate and duration for each individual Live Fire Training Structure Evolution is adequate to control and extinguish the training fire, the supplies necessary for backup lines to protect personnel, and any water needed to protect exposed property.
  - (a) The instructor in-charge shall assign the following personnel:
    - (1) One instructor to each functional crew, which shall not exceed five students.
    - (2) One instructor to each backup line.
    - (3) Additional personnel to backup lines to provide mobility.
    - (4) One additional instructor for each additional functional assignment.
- (2) The officer in charge or instructor will insure that the buildings or props being utilized for live fire training are in a condition that would not pose an undue safety risk.
- (3) A safety officer shall be appointed for all Live Fire Training Structure Evolutions. The safety officer shall have the authority, regardless of rank, to alter, suspend or control any aspect of the operations when, in his or her judgment, a potential or actual danger, accident, or unsafe condition exists. The safety officer shall not be assigned other duties that interfere with safety responsibilities.
- (4) No person(s) shall play the role of a victim inside the building.
- (5) Prior to the ignition of any fire, instructors shall insure that all personal protective clothing and/or self-contained breathing apparatus are NFPA compliant and being worn in the proper manner.
- (6) Prior to conducting any live fire training, a pre-burn briefing session shall be conducted. All participants shall be required to conduct a walk-through of the structure in order to have a knowledge of, and familiarity with, the layout of the building and to be able to facilitate any necessary evacuation of the building.

- (7) A standard operating procedure shall be developed and utilized for Live Fire Training Evolutions. The standard operating procedure shall include, but not be limited to:
- (A) a Personal Alert Safety System (PASS). A PASS device shall be provided for all participating in live fire training and shall meet the requirements in §435.9 of this title (relating to PASS devices);
  - (B) a Personnel Accountability System that complies with §435.13 of this title shall be utilized;
  - (C) an Incident Management System;
  - (D) use of personal protective clothing and self-contained breathing apparatus;
  - (E) an evacuation signal and procedure; and
  - (F) pre-burn, burn and post-burn procedures.



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## Modification Proposal: Title 37 TAC, Chapter 435, Firefighter Safety, §435.3 SCBA subpart 2

Structural Composites Industries (SCI), on behalf of TCFP regulated Fire and Rescue providers, requests the Firefighter Advisory Committee to consider a proposed modification to title 37 TAC, Chapter 435, Firefighter Safety, (including but not limited to: §435.3 SCBA subpart 2) allowing TCFP regulated entities use of United States Department of Transportation (DOT) approved SCBA cylinders. This change will eliminate the burden TCFP regulated entities now encounter regarding adherence to NIOSH approval for spare & replacement cylinders, which have needlessly and significantly increased replacement costs and reduced cylinder durability.

Modification will allow regulated entities the same financial benefits, safety regulation, & quality control as other Texas State and Municipal agencies (police, city water and sewer, public prisons, etc.), which are currently not required to adhere to NIOSH approval criteria.

SCI requests of the Firefighter Advisory Committee an opportunity to present justification, provide background, & submit letters of support from TCFP regulated entities at the next Firefighter Advisory Committee meeting.

### Background:

For the most part, SCBA cylinders are generic and require no proprietary designs by individual respirator manufacturers. Cylinders from one manufacturer may be replaced with those of another, similar to replacing one brand of batteries with another in an electronic device, or one brand of tires being exchanged for another on a vehicle. The cylinder's job is to contain highly pressurized breathing air. For SCBA units in use in North America, SCBA cylinders must conform to Department of Transportation (DOT) standards while outlet and inlet standards are prescribed by the Compressed Gas Association (CGA) and the American National Standards Institute (ANSI), respectively. Using cylinders interchangeably does not affect the unit's fit, form or function.

The TCFP, in adopting NFPA 1981, has disqualified departments under its jurisdiction the ability to purchase spare and replacement cylinders through a competitive "open" market. An "open" market does not exist currently because the NFPA 1981 standard builds upon a NIOSH approval. The NIOSH approval is comprised of a specific list of components as presented to NIOSH by the SCBA manufacturer. This has created a monopolistic environment for spare and replacement cylinders, which needlessly drives up pricing and provides zero value added.

### Example:

An entity is not NFPA 1981 compliant when they replace an SCI manufactured cylinder containing the SCBA brand name with an identical SCI manufactured cylinder not containing the SCBA brand name. Does this make sense? The SCBA manufacturer has nothing to do with the manufacturing of SCBA cylinders!

### Financial Impacts:

- 1) Non TCFP regulated departments realize a savings benefit of 30% to 60% below the cost of SCBA branded cylinders.
- 2) Improved durability cylinders are available which reduce the cylinder cost of ownership and significantly lowering overall SCBA program costs.
- 3) Technical advancements in cylinder technology have allowed for the introduction of longer life (30 year life) cylinders into the US market which further improve durability & reduce costs

### Safety:

The regulatory agencies involved in this matter include: DOT, NFPA, and NIOSH.



The DOT is the regulatory entity responsible for cylinder manufacturing, construction, and testing in the United States. All Carbon Composite Cylinders are manufactured per DOT document "Basic Requirements for Fully Wrapped Carbon-Fiber Reinforced Aluminum Lined Cylinders." This document outlines such information as materials used and service life, ... but more importantly the tests - drop test, burst test, thermal test, bonfire test, gunfire test, etc., that cylinders must pass to earn DOT approval. From a physical and construction standpoint, DOT approval is the gold standard for cylinders in the United States.

NIOSH and the NFPA (by mirroring NIOSH) have the technical requirement that all cylinders be DOT approved. However, a NIOSH approval is granted only to the SCBA as a single product (which includes the cylinder) per 42 CFR Part 84. Because cylinders are not NIOSH-approved independent of the respirator, they cannot be labeled as such until they are assembled as a NIOSH-approved unit by respirator manufacturer, or repackaged and sold through the same manufacturer as a stand-alone "replacement" part. A respirator manufacturer may argue that safety is compromised with a non-NIOSH approved cylinder, but any failure that could be found would have been on a cylinder that had at some point received NIOSH approval. The rigorous DOT requirements are responsible for reducing potential failure, recalls or specific issues to cylinders.

**Conclusion:**

Given the financial repercussions and zero value added, it is critical the Firefighter Advisory Committee consider a proposal on this topic at the next meeting. SCI is prepared to demonstrate that the only obstacle in this change is the misinformation which exists within the Fire and Rescue community about composite cylinders and the technology which has made them safe for over 35 years.

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**Sample Proposal**

**37 TAC, Chapter 435.3**

**The employing entity shall:**

(2) ensure that all self-contained breathing apparatus used by fire protection personnel complies with the minimum standards of the National Fire Protection Association identified in NFPA 1981, Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire Fighters.

(A) the National Fire Protection Association standard applicable to a self-contained breathing apparatus is the standard in effect at the time the entity contracts for new, rebuilt, or used self-contained breathing apparatus;

(B) an entity may continue to use a self-contained breathing apparatus in use or contracted for before a change in the National Fire Protection Association standard, unless the Commission determines that the continued use of the self-contained breathing apparatus constitutes an undue risk to the wearer, in which case the Commission shall order that the use be discontinued and shall set an appropriate date for compliance with the revised standard;

(C) an entity, at its discretion, may utilize spare & replacement SCBA cylinders which are of the same Fit, Form and Function as those originally used on the SCBA at the time of purchase provided that the cylinders are DOT approved and comply with the Compress Gas Associations (CGA) requirements in CGA C-6.2 – 2005 for fiber reinforced composite cylinders;

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