

Live Fire Training

600.1 PURPOSE AND SCOPE

The purpose of this guideline is to protect the health and safety of members by providing procedures and responsibilities for live-fire training.

600.2 MEMBER PREREQUISITES

Before participating in any live-fire training exercise, members shall, at a minimum, have completed training equivalent to the requirements of NFPA 1001, Firefighter I.

600.3 TRAINING DIVISION RESPONSIBILITIES

The Training Division shall be responsible for:

1. Scheduling live fire training.
2. Confirming that the Division Chief of Training is notified when live-fire training is scheduled.
3. Ensuring that all live-fire training provided by the agency is conducted in accordance with state and local requirements (30 Tex. Admin. Code § 111.205; 30 Tex. Admin. Code § 111.219; 37 Tex. Admin. Code § 435.27) and NFPA 1403: Standard for live fire training evolutions
4. Providing a secure structure for the live fire training consistent with the requirements of this guideline.
5. Ensuring that all required permits and authorizations, if applicable, have been approved and received before conducting any training exercises.
6. Confirming that a sufficient number of Burn Managers and instructors will be present to fill mandatory roles for live fire training.
 1. Burn Manager In Charge (BMIC)
 2. Safety Officer
 3. Ignition Team
 4. Instructors - not to exceed a student to instructor ratio of 5:1
7. Confirming that the number of Burn Managers and Burn Manager assignments are detailed in the live fire training Burn Plan.
8. Designating a qualified safety officer for all live fire training exercises.
9. Ensuring that all live fire training is conducted using qualified instructors who meet the following requirements:
 1. For the lead instructor and Burn Manager in Charge, NFPA and any applicable state requirements for Fire Instructor II

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2. For all other instructors, NFPA and any applicable state requirements for Fire Instructor I
10. Ensuring all injuries sustained during live fire training are documented and reported to the Division Chief of Training.
11. Developing a standard operating procedure for Live-Fire Training Structure Evolutions in accordance with 37 Tex. Admin. Code § 435.27.

600.4 PERSONAL PROTECTIVE EQUIPMENT

During live fire training evolutions, all participants will wear full ensembles of structural firefighting personal protective equipment (PPE) that meets the requirements set forth in *NFPA 1971: Standard on Protective Ensemble for Structural Fire Fighting and Proximity firefighting Protective Ensemble* and a self-contained breathing apparatus (SCBA) that meets the requirements set forth in *NFPA 1981: Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services*.

A full ensemble of structural firefighting PPE shall at a minimum consist of:

- structural firefighting helmet with eye protection
- structural firefighting hood
- bunker coat
- bunker pants
- structural firefighting boots
- structural firefighting gloves.

All PPE that is to be worn for a live fire training evolution shall have a routine inspection performed and documented in PSTRax before and after the live fire training event has taken place. Any deficiencies found with the PPE that results in a failed routine inspection will require the deficiencies be documented and reported to the Quartermaster. PPE that has failed a routine inspection shall be placed out of service and remain out of service until it can be properly repaired by the fire departments qualified PPE service provider, or replaced.

Participants of the live fire training event shall wear at a minimum; bunker pants, structural firefighting boots, structural firefighting gloves and helmet during post burn cleanup and while performing overhaul.

600.5 WATER SUPPLY

Water supply can be provided through a combination or solitary use of a pressurized water source such as a fire hydrant, relay pumping fire apparatus, or the use of portable dump tanks. The water supply used for fire suppression during live fire training evolutions must be independent from water sources supplying safety hose lines that may be in use.

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The minimum gallons per minute (gpm) fire flow rate for fire suppression during live fire training evolutions shall be 160 gpm for one (1) single set burn package and 320 gpm for two (2) single set burn packages. There shall be no more than two (2) single set burn packages ignited per live fire training evolution.

600.5.1 SAFETY HOSE LINES

There shall be a safety hose line present for each ignited single set burn package during a live fire training evolution. The safety hose line shall be utilized by a burn manager ignition team to maintain desired fire conditions throughout the live fire evolution and must be capable of providing a minimum flow rate of 95 gallons per minute (gpm) per *NFPA 1403: Standard on Live Fire Training Evolutions*.

Safety hose lines may be supplied by a permanent pressurized water source, such as a fire hydrant, or a dedicated fire apparatus that is not taking part in the training evolution.

600.6 ACQUIRED STRUCTURES

An acquired structure will NOT be used for live-fire training.

600.7 TRAINING RECORDS

The Training Division shall be responsible for maintaining records of all live-fire training that is provided to members. At a minimum, the Training Division should document:

1. The dates of the training sessions.
2. A list of the topics or a summary of the content of the training sessions.
3. The names or other identifiers and job titles of the members who received the training.
4. The names, certificate numbers, and qualifications of persons conducting the training.
5. Injuries sustained during training exercises.

The Training Division should maintain the training records in accordance with established records retention schedules.

600.8 BURN MANAGERS ROLES AND RESPONSIBILITIES

Live fire training evolutions will be managed by Department Employees who are certified in live fire instructor training in accordance with NFPA 1403 Standard of Live Fire Training Evolutions. Employees that have been certified as a live fire instructor will be referred to as Burn Managers. Burn Manager Teams operate independently from suppression crews and instructors who are participating in training scenarios during live-fire training. Burn Managers are responsible for safety, creation of burn packages, fire ignition, fire and heat management, overhaul, and post burn cleanup. For live-fire training evolutions to take place, a Burn Manager Team must consist of the following

1. Burn Manager Instructor in Charge (BMIC)

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- BMIC must possess a live-fire training instructor certification, and a minimum of a TCFP Instructor II certification
- 2. Safety Officer
 - Safety Officer must possess at minimum a TCFP Instructor I certification.
- 3. Ignition Team
 - An Ignition team must be composed of at least two members, one of which must possess a live-fire training certification and a minimum of TCFP Instructor I certification. There must be an ignition team assigned for every fire ignited in a live-fire evolution.
- 4. Instructor
 - Instructors must have a minimum of a TCFP Fire Instructor 1 certification. Instructors shall not exceed a participant to instructor ratio of 5:1

In order to prevent PPE from heat saturation and exposing Burn Managers to excessive heat conditions, Burn Managers are not permitted consecutive ignition team assignments. It is recommended that Burn Managers that are assigned to an ignition team be rotated to exterior positions between live fire training evolutions to allow for proper cooling, hydration and rehab.

600.8.1 BURN MANAGER IN CHARGE

Burn Manager in Charge (BMIC) is the incident commander for the training event and oversees the entire live fire training evolution. The BMIC is responsible for adherence to the approved burn plan that has been approved by the Training Division, communicating the learning objectives to all participants, and ensuring the operational safety of the live fire training evolution. Before fire(s) are ignited for a training evolution, The BMIC must:

- conduct a Pre-Burn inspection of the training facility and document findings in the appropriate section of the burn plan.
- conduct A Pre-Burn Briefing with all participants that identifies training objectives, role rotations, safety concerns, and the EMS resources that are outlined in the burn plan
- conduct a guided tour of the burn building to all participants of the live fire training evolution. A guided tour of the burn building must be conducted in order for participants to identify what burn rooms will be used, any known hazards, and the location of doors and windows so all participants are aware of egress points.

At the conclusion of a live fire training evolution, the BMIC must:

- conduct a post-burn briefing of the training scenario to identify if training objectives were met and to facilitate constructive discussion regarding the outcome of the live fire training evolution. The post-burn debriefing is an opportunity for participants to reflect on their individual performance acknowledging areas of strengths, as well as areas for improvement. Post burn debriefings should be constructive in nature.
- conduct a post-burn inspection of the training facility documenting any deficiencies in the appropriate sections of the burn plan.

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600.8.2 SAFETY OFFICER

A safety officer shall be designated for all live-fire training exercises and shall have the same qualifications as an instructor. The safety officer has the authority to intervene and control any aspect of the operations when a potential or actual danger, potential accident, or unsafe condition exists (37 Tex. Admin. Code § 435.27). The safety officer may require additional safety personnel as deemed necessary.

The safety officer shall not be assigned duties that interfere with their safety responsibilities.

The safety officer shall be knowledgeable about all the safety features at the training location.

Before beginning any live-fire training, the designated safety officer shall be responsible for:

1. Inspecting all burn locations.
2. Ensuring that all members participating in the training meet the prerequisites for participation.
3. Inspecting each participant's personal protective equipment (PPE) and SCBA.
4. Ensuring that a pre-burn walk-through and briefing for all members and instructors has been conducted (37 Tex. Admin. Code § 435.27).
5. Ensuring an Emergency Medical Services (EMS) unit and advanced life support (ALS) crew capable of transporting a patient has been identified in the Burn Plan.

In no event shall a person be used as a simulated victim during live-fire training exercises.

600.8.3 IGNITION TEAM

The Ignition Team is responsible for igniting the burn packages located in the approved burn rooms that have been identified in the Burn Plan. The Ignition Team must not attempt to ignite burn packages until the BMIC has conducted a radio safety check and completed the "Go/Stop" sequence.

Burn managers assigned to ignition teams will utilize the safety hose lines to control the fire and smoke conditions throughout the live fire training evolution. It is the responsibility of the Ignition Team to monitor interior temperatures. Burn temperature upper limits are 600F for Floor 1 and 800F for Floor 2. Once an "End of Drill" declaration is made, the Ignition Team will be responsible for extinguishing any fire not extinguished during the training evolution.

600.9 BURN PLANS

Before live-fire training evolutions can take place, the assigned Burn Manager in Charge of the live-fire training event must submit a burn plan to the Training Division for review and approval. A burn plan for live-fire training must not have more than one active fire room planned per floor and include.

1. An organization chart and participation list
2. Site Plan
3. Floor Plan for each planned live-fire evolution identifying fire rooms and location of safety hose lines

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4. Communication Plan
5. Medical Plan
6. Roster of Roles and Rotation of Burn Managers
7. GO/STOP Checklist (For each planned live-fire evolution)
8. Pre-Burn Building Inspection
9. Post Burn Building Inspection
10. Safety Briefing Checklist

600.10 BURN PACKAGE

Burn packages are predetermined fire loads that are constructed with wood material. A standard set burn package consists of a combination of wood pallets and oriented strand board (OSB). A standard set burn package consists of six (6) 2'x4' pieces of OSB and three (3) wood pallets arranged in alternating layers. Small amounts of scrap wood and hay may be added to the burn package to assist in the production of smoke. These additions to the burn package are subject to the discretion of the Burn Manager in Charge.

Burn packages will require a minimum fire flow rate of 160 gallons per minute per single standard set burn package. Burn packages are only to be ignited in designated burn rooms that have been identified in the Burn Plan. A designated burn room shall not have more than one (1) standard set burn package loaded or ignited per each live-fire training evolution. Burn rooms are located on Floor 1 and Floor 2. There are no burn rooms on Floor 3 or Floor 4. Active burn rooms are limited to one room on Floor 1 and one room on floor 2 not to exceed two fires per evolution. Smoke barrels may be used in designated areas within the burn building in conjunction with active burn rooms not to exceed one barrel per fire floor.

600.11 FIRE IGNITION PROCEDURE

Before fire(s) are ignited for a training evolution, the Burn Manager in Charge must complete the following procedure:

1. Initiate a radio check and a Go/Stop sequence on the designated radio channel. A "Go" status must be declared by the
 - Safety Officer
 - Every Unit participating in the training evolution
 - All Ignition Teams participating in the training evolution
2. If a "Stop" status is given at any point throughout the Go/Stop safety check, the sequence will need to be restarted from the beginning.
3. After the Go/Stop sequence has been completed and all units involved in the training evolution have signaled a 'Go' status, Burn Manager Ignition Teams may initiate ignition of burn package(s) utilizing a propane torch. Once interior fire

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conditions reach the desired result for the training evolution, the Ignition Team will remove the propane torch from the interior of the burn building, and communicate to the BMIC that the training evolution is ready to begin.

4. The BMIC will then start the training evolution.

600.12 SAFETY AND EMERGENCY PROCEDURE

In the event of a MAYDAY, the BMIC will acknowledge and confirm the MAYDAY. ALL radio traffic not pertinent to the MAYDAY must cease. Once the MAYDAY is confirmed:

1. The BMIC will activate RIT followed by a PAR check to be completed by all personnel on the training ground.
2. The Burn Managers on the interior of the building will immediately begin opening doors and windows while the Ignition Team(s) utilize hose lines to control and extinguish all active fire.
3. The Exterior Safety Officer(s) will begin opening the back portion (Charlie Side) of the building on Floor 1 in order to assist in venting the building of smoke and heat.
4. If the MAYDAY situation is cleared, the training drill may resume.
5. If EMS is needed, the BMIC will refer to and activate the EMS plan that has been outlined in the Burn Plan.

Live-Fire training evolutions are permissible during rain weather events as long as lighting is not present. If thunder is heard within 30 seconds of a visible lightning strike, or a cloud-to-ground lightning bolt is seen, the thunderstorm is considered close enough to pose a risk to a lightning strike. In this instance, live-fire training is to be suspended and personnel on the training field should seek appropriate shelter. Live-Fire training evolutions can be resumed 30 minutes after lightning is witnessed as long as no other lightning strikes occur. The 30 minute suspension is restarted after any reoccurring lightning strikes.

The BMIC has the authority to postpone or cancel any live fire training events where extreme weather or other safety concerns may impact the safety of participants.