Live Fire Training Operational Guidelines

Personnel Assignments

1. **Student/ Participants** in the direct firefighting operations shall have received training to meet the job performance requirements for Firefighter-1 prior to the live fire training evolution to include (NFPA 1403, 4.3.1, 2012 Ed.):
    a. Firefighter Safety
    b. Fire behavior
    c. Portable fire extinguishers
    d. Personal protective equipment
    e. Ladders
    f. Fire hose, appliances and fire streams
    g. Overhaul
    h. Water supply
    i. Ventilation
    j. Forcible entry
    k. Building construction

    If the participant did not receive the above training from the hosting agency, written documentation of successful completion of the training shall be provided to the instructor-in-charge prior to participating in the evolutions.

    ALL participants in the live fire training evolution must have a current OSHA medical examination as required in CFR 1910.134 Respiratory Protection and CFR 1910.156 Fire Brigade regulations.

    See OFPC's Firefighter Training Best Practices document for direction on what level of training participants should have to perform specific functions in the live fire training evolution.

2. **Safety Officer –** shall be appointed for all live fire-training evolutions.
    a. Safety officer shall be authorized by the authority having jurisdiction (AHJ) to serve as safety officer for the specific type of live fire-training evolutions being conducted.
    b. The safety officer shall be proficient in applying the requirements of NFPA 1403. This may be accomplished by successfully completing NYS OFPC courses 1A *Live Fire Training Safety* and 1B *Conducting Live Fire Training Evolutions. It is also recommended that the safety officer have completed the NYS OFPC Incident Safety Officer course 1D.*
    c. The Safety Officer shall have the authority to intervene and control any aspect of the operations when, in his or her judgment, a potential or actual danger, potential for accident, or unsafe condition exists.

d. Upon stopping an evolution due to an accident or safety concern, the safety officer shall confer with the instructor-in-charge/ incident commander and corrective action shall be taken prior to the evolutions starting again.
e. The responsibilities of the safety officer shall include, but not be limited to, the following:
    i. Prevention of unsafe acts
    ii. Elimination of unsafe conditions
f. The safety officer shall not be assigned other duties that interfere with their safety responsibilities.
g. The safety officer shall provide for the safety of all persons at the live fire training evolution.
h. The safety officer shall be knowledgeable with the safety features available at the training structure or prop, such as emergency shutoff switches, gas valves, etc.
i. Additional safety personnel, as deemed necessary by the safety officer, shall be positioned to react to any unsafe or threatening condition.

3. **All Instructors**
    a. All instructors shall be qualified and authorized to deliver live fire-training by the AHJ.
        i. Authorized- have been trained to operate any site specific live fire training props or equipment being utilized during the evolutions
        ii. Qualified- have successfully completed a respirator medical exam, possess NFPA 1971 approved personal protective equipment and have on-site access to NFPA 1981 approved self-contained breathing apparatus.
    b. All instructors shall be proficient in applying the requirements of NFPA 1403. This may be accomplished by successfully completing NYS OFPC courses 1A *Live Fire Training Safety* and 1B *Conducting Live Fire Training Evolutions*.
    c. It is recommended that all instructors complete, at a minimum, the NYS OFPC *Principles of Instruction* and *Fire Officer-1* courses or their equivalents.
    d. All instructors shall monitor and supervise all assigned students.
    e. All instructors shall maintain personal accountability by conducting a personal accountability report (PAR) upon entering and exiting the structure or prop during the live fire training evolutions.
    f. No instructor shall enter or work in or on the live fire training structure/ acquired structure alone.
    g. There shall not be more than five students assigned to any one instructor.

h. There shall be an instructor assigned to each functional (teaching) component/ crew involved in the evolution such as the fire attack crew, back-up hose line crew, building search crew, and ventilation crew, etc.
i. One instructor each shall also be assigned to the Incident Commander position and the Ignition Officer position at a minimum.
j. All instructors shall be rotated through the instructional assignments to assure they are rested, hydrated, and do not over-heat themselves or their PPE.

4. Instructor-in-charge/ Incident Commander

a. He/ She shall have received training to meet the minimum job performance requirements for Fire Service Instructor I in NFPA 1041, *Standard for Fire Service Instructor Professional Qualifications (NFPA 1403, 4.6.1, 2012 Ed.).* NYS Fire Service Instructor I, National Certification as a Fire Service Instructor I, or NYS OFPC Educational Methodology, OR Training Officer Workshop I AND Training Officer Workshop II.
b. He/ She are responsible for full compliance with NFPA 1403, NY State, and Local rules and regulations.
c. Prior to the ignition of any fire, the instructor-in-charge shall ensure that all participants are wearing personal protective clothing, specified in this document, according to manufacturer's instructions.
d. The instructor-in-charge shall ensure that instructors rotate through the instructional assignments to prevent over-exertion or over-heating of personnel.
e. The instructor-in-charge and the safety officer shall determine rate and duration of waterflow necessary for each individual live fire training evolution, including the water necessary for control and extinguishment of the training fire, the water supply necessary for back-up lines to protect personnel, and any water needed to protect exposed property.
f. The instructor-in-charge shall identify a location for rest and rehabilitation of all personnel operating at the live fire-training event, including medical evaluation and treatment, food and fluid replacement and relief from climatic conditions in accordance with the circumstances during the training session.
g. The Instructor-in-charge shall maintain awareness of weather conditions, wind velocity, and wind direction including a final check for possible changes in weather conditions immediately before actual ignition.
h. The instructor-in-charge, in consultation with the safety officer, shall curtail, postpone, or cancel the event to reduce the risk of injury or illness

caused by extreme weather conditions, if necessary. (NFPA 1403, 4.5, 2012 ed)

i. The instructor-in-charge shall allocate additional instructors for situations that would shorten the physical working time or threaten the health of assigned instructors such as temperature extremes, over-sized group of students, or if the event is planned to extend beyond normal time frames.
j. The instructor-in-charge shall ensure that all participants shall have no facial hair (beards, mustaches, or sideburns) that interferes with the proper SCBA face-piece seal while participating in the live fire training evolutions.
k. The instructor-in-charge shall provide a copy of NFPA 1403, local rules and regulations, and agency policies concerning live fire training to all support instructors if necessary.
l. The instructor-in-charge shall utilize and complete the agency's live fire checklist prior to the start of each live fire training evolution.
m. The instructor-in-charge shall ensure that all fires are extinguished without an excessive period of pre-burn and as soon as the training objectives are accomplished.

5. Fire Control Team – shall consist of a minimum of two people

a. **Ignition Officer/ Instructor –**
   - **i.** shall not be a student nor the safety officer
   - **ii.** Maintain and control materials being burned
   - **iii.** Ignite fires when directed by Instructor-in-charge/ incident commander in coordination with safety officer

b. **Ignition Observer –**
   - **i.** Shall not be a student nor the safety officer
   - **ii.** Shall have successfully completed the NYS OFPC courses 1A Live Fire Training Safety and 1B Conducting Live Fire Training Evolutions.
   - **iii.** Shall observe the ignition officer ignite and maintain the fire
   - **iv.** Shall maintain visual, verbal, or physical contact with ignition officer while operating in building or training structure

c. Operation of fire control team
   - **i.** Shall wear full personal protective equipment, including SCBA, when performing fire control function.
   - **ii.** Shall visually ensure that flame area is clear of personnel being trained just prior to fire ignition
   - **iii.** Shall have charged hoseline, capable of flowing at least 120 GPM, present when igniting or tending to any fire.

iv. No personnel shall remain in the burn room/ compartment after ignition of fuel package.

6. **Rapid Intervention Team (RIT)/ Firefighter Assist & Search Team (FAST)**
    a. Shall not be students in the evolutions
    b. For Acquired Structure live fires – A team of no less than **six** NFPA 1407 (*Standard for Training Fire Service Rapid Intervention Crews*) trained Firefighters shall be provided. (*the NYS OFPC Firefighter Assist and Search Team Operations course meets this requirement*)
    c. For Live Fire Training Structures – A team of no less than **four** NFPA 1407 (Standard for Training Fire Service Rapid Intervention Crews) trained Firefighters shall be provided. (the NYS OFPC Firefighter Assist and Search Team Operations course meets this requirement)
    d. Team shall be equipped to promptly respond to and rescue participants as per the building construction, type of evolutions being conducted, and rescue size-up. (see OFPC Live Fire Policy, attachment #2 for suggested equipment cache)
    e. Team shall manage their individual SCBA air supplies to ensure that an extended rescue operation can be supported, if necessary.
    f. A means of communication shall be established between the team and both the instructor-in-charge and the safety officer.
    g. Two members of the RIT/ FAST may serve as the “safety hose line” operators if four members are available to rescue participants from the interior hazard area.
7. **Emergency Medical Services (EMS) / Rehabilitation Personnel**
    a. A Basic Life Support (BLS) equipped crew of at least two Certified First Responders, who are not students in the evolutions, shall be on site to handle injuries, medical emergencies, and assist in monitoring participants in the rehabilitation area.
    b. For Acquired Structure Live Fires – at least BLS transport capability shall be on site to handle injuries and medical emergencies.
    c. Written reports shall be completed and submitted to the hosting AHJ and the specific students’ AHJ for all injuries and all medical aid rendered.
8. **Additional Support Personnel**
    a. Apparatus Operators – experienced operators who are very familiar with their assigned piece of apparatus
    b. Rehabilitation group personnel- work under the direction of the EMS provider(s) assigned to the rehabilitation function
    c. Traffic control personnel- do not report directly to the instructor-in-charge but to another supervisor to allow the instructor-in-charge to focus on the live fire evolution only.

d. Any support personnel shall not be allowed to work in an area within the collapse zone of the acquired structure nor in an area that may be contaminated with smoke
e. Support personnel shall wear personal protective clothing commensurate with their job duties and as approved by the instructor-in-charge/ incident commander in consultation with the safety officer.

Preparation Efforts

1. **Water Supply**
    a. Each hose line used for fire attack, back-up, safety, and exposure protection shall be capable of flowing at least 120 GPM. Exposure protection may require a hoseline that flows more than 120 GPM.
    b. There shall be at least three (3) hoselines in place during the evolutions;
        i. Attack line- manned by students (participants),
        ii. Back-up line- manned by students (participants) to provide protection of means of escape by attack line crew, and
        iii. Safety line- manned by RIT/ FAST and / or fire control team under the direction of ignition officer. This line is used to escort the fire control team during ignition and be in position to readily extinguish the fire if so directed by IC and/ or safety officer
    c. Safety hose lines shall be in place, charged and have the flow checked prior to the fire being ignited.
    d. Additional personal and property exposure protection hoselines are deployed and charged as needed. (*NYS DEC Open Fires regulation part 215 prohibits live fire training to occur within 300 feet of another occupied structure which may be an exposure*)The calculated water flow shall include water supply to any needed additional hose lines.
    e. Minimum water supply and delivery for the live fire training shall meet the criteria identified in NFPA 1142, *Standard on Water Supplies for Suburban and Rural Fire Fighting. OFPC's Water Supply Operations Course provides an understanding of how to apply the fire flow formulas and minimum water supply requirements as described in NFPA 1142.*
    f. When conducting live fire training in Acquired Structures OR in Live Fire Training Structures NOT equipped with gas-fueled training systems, a minimum reserve of additional water in the amount of 50% of the fire flow demand, determined in accordance with NFPA 1142, shall be available to handle exposure protection or unforeseen situations.

g. Separate water sources are used for the supply of the attack lines and the back-up or safety lines to prevent the loss of both water supply sources at the same time.
h. At a training facility where the water supply system has been engineered to provide adequate volume of water to conduct the evolutions and a back-up power source or back-up pumps, or both, are in place to ensure an uninterrupted supply in the event of a power failure or malfunction, a single water source shall be sufficient.

2. Facility / Prop Inspection

a. Live fire training structures shall be inspected visually for damage prior to live fire-training evolutions. (See OFPC's *Live Fire Training Facility Inspection and Maintenance Checklist* or *Acquired Structure Live Fire Decision Tree* document for further requirements)

b. Any damage shall be documented and the building owner or AHJ shall be notified.

c. Where the live fire training structure/ prop damage is severe enough to affect the safety of the participants, training shall not be permitted (Refer to OFPC Live Fire Training Facility Inspection and Maintenance checklist for further details)

d. All doors, windows, and window shutters, railings, roof scuttles, and automatic ventilators, mechanical equipment, lighting, manual or automatic sprinklers, and standpipes necessary for the live fire training evolution shall be checked and operated prior to any live fire training evolution to ensure they operate correctly.

e. All safety devices, such as thermal sensors, combustible gas monitors, evacuation alarms, and emergency shutdown switches, shall be checked prior to any live fire training evolutions to ensure they operate correctly.

f. For gas-fueled training systems , the instructors shall run the training system prior to exposing participants to live flames in order to ensure the correct operation of devices such as gas valves, flame safeguard units, agent sensors, combustion fans, and ventilation fans.

g. VEHICLES used as props for live fire training shall have all fluid reservoirs, tanks, shock absorbers, drive shafts, and other gas-filled closed containers removed, vented, or drained prior to any ignition. Batteries, air bags and igniters, and brake shoes shall also be removed from the vehicle prior to ignition.

3. Fuel Materials/ Packages (Burn Evolutions Matrix)

a. Only natural plant/ wood products such as hay, straw, pallets, and excelsior shall be used as fuel. Use of processed wood products such

as Oriented Strand Board (OSB) or laminated beams should not be used for interior-structural fire training as they contain large amounts of glue that can lead to rapid-fire growth, flashover, and unexpected fire spread.

b. In acquired structures, low-density combustible fiberboard (such as OSB or paneling) and other highly combustible interior finishes shall be removed. (See OFPC's *Acquired Structure Live Fire Training Decision Tree* document for further requirements)

c. Flammable / combustible liquids shall not be used as fuel for live fire training except in props specifically engineered for their use such as exterior combustible liquid spill fires, pit fires, or three-dimensional fire training props.

d. Toxic materials, as defined by 6 NYCRR, Section 371.1(d) shall not be used in live fire training evolutions. (http://www.dec.ny.gov/regs/14897.html)

e. Flammable metals shall not be used as fuel for live fire training evolutions.

f. Pressure-treated wood, rubber, plastic, polyurethane foam, upholstered furniture, and chemically treated straw or hay shall not be used.

g. Unidentified materials, such as debris found in or around the structure or prop that could burn in unanticipated ways, react violently, or create environmental or health hazards, shall not be used. (NFPA 1403, 4.12.4, 2012 Ed.)

h. Fusees (safety flares), kitchen matches and similar devices should be used to ignite interior-structure live training fires. Propane lighters, butane lighters and similar devices should only be used for exterior training fire ignition.

i. Excess class A materials shall not be stored in the burn room or any exposure room while conducting interior live fire training evolutions.

j. The fuel load for each evolution shall be limited to avoid conditions that could cause an uncontrolled flashover or backdraft.

k. The Instructor-in-Charge/ IC and the Safety Officer shall document the fuel loading, to include the following:

- **i.** Fuel material
- **ii.** Wall and floor coverings and ceiling materials
- **iii.** Type of construction of the structure, including type of roof and combustible void spaces
- **iv.** Dimensions of the burn room

l. The Instructor-in-Charge/ IC and the Safety Officer shall assess the selected fire room environment for factors that can affect the growth, development, and spread of fire.

m. Live Fire Training Structures- a burn sequence matrix chart shall be developed for the burn rooms. (See the Live Fire Fuel Load Example attached to this document.)

i. The burn sequence for each room shall define the maximum fuel load that can be used for the first burn and each successive burn.

ii. The matrix for each room shall also specify the maximum number of evolutions that can be safely conducted during a given training period before the room is allowed to cool.

iii. The fuel loads per evolution and maximum number of sequential evolutions in each burn room shall not be exceeded under any circumstances.

4. Participant PPE Inspection/ use

a. All participants shall wear personal protective equipment in accordance with manufacturer's instructions.

b. All participants shall be inspected by the Safety Officer prior to entry into a live fire training evolution to ensure that the personal protective clothing and SCBA are being worn correctly and are in serviceable condition. (See *NFPA 1851*, *Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting and NFPA 1852, Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA) for further details in determining if PPE is serviceable)*

c. ALL *students, instructors, safety personnel*, or other personnel participating in any evolution or operation of fire suppression during the live fire training evolution shall breathe from an SCBA air supply whenever they operate under one or more of the following conditions:

i. In an atmosphere that is oxygen deficient, or contaminated by products of combustion, or both

ii. In an atmosphere that is suspected of being oxygen deficient, or contaminated by products of combustion, or both

iii. In any atmosphere that can become oxygen deficient, contaminated, or both

iv. Below ground level

5. Site Control Plan

a. The instructor-in-charge/ IC, in consultation with the Safety Officer will develop a site control plan to include considerations for the following;

i. Safety of all persons on scene, including students, instructors, support personnel, visitors, and spectators.
ii. There shall be room provided around all props so that there is space for all attack line(s), back up line(s), and safety line(s) to operate freely.
iii. Site parking plan
    1. A parking area for an ambulance or EMS vehicle shall be designated and located where it will facilitate a prompt response in the event of personal injury to participants in the evolution
    2. Areas for the staging, operating, and parking of fire apparatus that are used in the live fire training evolution shall be designated
    3. An area for parking fire apparatus and vehicles that are not a part of the evolution shall be designated so as not interfere with fireground operations
    4. Apparatus that are designated as in-service to respond to an emergency shall be located in an area that will facilitate a prompt response.
    5. Parking areas for police or press vehicles shall be designated, if necessary.
    6. Ingress and egress routes shall be designated, identified, and monitored during the training evolutions to ensure their availability in the event of an emergency
iv. Visitors and Spectators
    1. All spectators shall be restricted to an area outside the operations area perimeter established by the safety officer.
    2. Control measures shall be posted to indicate the perimeter of the operations area.
    3. Visitors who are allowed in the operations are shall be escorted at all times and wear appropriate personal protective equipment (PPE)
    4. Control measures shall be established to keep pedestrian traffic in the vicinity of the training site clear of the operations area of the live burn.
v. Adjacent properties and notifications
    1. Property adjacent to the training site that could be affected by the smoke from the live fire training evolution, such as railroads, airports or heliports, and nursing

homes, hospitals, or other similar facilities shall be identified and the persons in charge of them notified of the date and time of the evolutions.

2. Streets or highways in the vicinity of the training site shall be surveyed for potential effects from the live fire training evolutions and safeguards shall be taken to eliminate possible hazards to motorists.

Pre-Burn Briefing

1. **Checklist**
   - **a.** A checklist similar to the sample provided with this document or to the sample provided by NFPA 1403 shall be completed
   - **b.** The checklist shall be used to conduct the pre-burn briefing
   - **c.** The checklist shall be maintained with the remaining live fire evolution documents with the hosting agency training records.
2. **Walkthrough of facility**
   - **a.** All personnel entering the building/ facility during the live fire evolutions, including the FAST/ RIT crew, shall walk through the building/ facility to gain familiarity with the layout, exits, and potential hazards.
   - **b.** Personnel shall operate the window and door closure devices during the walk through tour
   - **c.** It shall be confirmed that un authorized persons or animals are within the building/ facility prior to each live fire ignition
3. **Crew assignments**
   - a. Span of control shall not exceed one instructor for every five students
   - b. Assignments and crew rotations shall be clearly understood by all participants. A display of the assignments and rotations should be considered to enhance situational awareness by all participants
4. **Communication Procedures**
   - **a.** A method of fire ground communications shall be established to enable coordination among the instructor-in-charge/ incident commander, the interior and exterior crews, the safety officer, and external requests for assistance. All participants are to be made aware of the established communications system.
   - **b.** There shall be no artificial “maydays” scripted in any live fire training evolutions
   - **c.** The communications system shall be tested prior to ignition of training fires.

5. **Building Evacuation Plan** – a building evacuation plan shall be established, including an evacuation signal to be demonstrated to all participants in an interior live fire training evolution (NFPA 1403, 4.9.2, 2012 Ed.).
6. **Possibility of Simulated Victims**
    a. The location of simulated victims shall not be required to be disclosed, provided that the possibility of victims is discussed in the pre-burn briefing
    b. No person(s) shall play the role of a victim during live fire training evolutions (New York State Executive law 159-c/ NFPA 1403, 5.1.11, 2012 Ed.)
7. **Exits Identified and evaluated**
    a. Exits shall be identified and evaluated prior to each training burn.
    b. Every burn room or burn compartment should have a minimum of two means of escape (NFPA 1402, 10.1.4, 2007 Ed.).
    c. Participants of the live fire training shall be made aware of the exits from the structure prior to each training burn.
    d. Training fires shall not be located in any designated exit paths.

Post-Burn Administration

1. **Hot-wash (review) of operation**
    a. A brief review of crew operations during the live fire evolution should be conducted immediately after each evolution by the assigned instructor.
    b. A personal accountability report (PAR) should be conducted upon exiting the hazard area and crew assessed for status and possible injury.
    c. A briefing conducted by the instructor-in-charge shall be conducted at the conclusion of the evolutions to include personnel health assessment, equipment/ facility status, review of evolutions conducted, lessons learned during the evolutions, post-evolution instructions, and personal health/ fitness recovery instructions.
2. **Facility/ Acquired Structure post-burn inspection**
    a. Acquired Structure- If safe to perform, verify fire is completely extinguished and remains of building secured as per pre-burn agreement with the owner and per local laws and regulations
    b. Live Fire Training Facility- facility is inspected and any damage or concerns about the facility are relayed to the owner and facility is secured as per pre-burn agreement and local laws and regulations.
3. **Documentation of evolutions**
    a. All permit documentation requirements shall be completed
    b. Appropriate documentation is given to the property owner as necessary
    c. Copies of all documents, including the checklist, shall be filed in the hosting agency training records

d. Copies of training evolution documentation should be made available to all participants and/ or their sponsoring agency

4. **Re-servicing of Apparatus and Equipment**
    a. Instructor-in-charge should verify with apparatus operators that their apparatus and equipment are re-supplied and serviceable.
    b. Any damage or loss of equipment should be reported to the sponsoring agency
5. **Documentation of injuries or medical emergencies**
    a. The supervisors of any injured/ ill participants should be notified as soon as possible to allow them to complete the appropriate insurance forms such as the New York State VF-2 form and the NFIR fire service casualty report.
    b. An unusual incident report should be completed and maintained by the hosting agency and copies shared with the injured/ ill person's sponsoring agency.
    c. All minor injuries/ illness shall be documented as per agency policy

Acquired Structure Live Fire Training Decision Tree

If the answer is "NO" to ANY of the questions below, then live-fire training shall not be conducted in the structure.

Administrative

1. Fire Department has confirmed proof of current ownership of the structure (title search).

2. Fire department has received Release of insurance document.

3. Fire Department has received written permission from owner to perform live fire training in the structure.

4. Local air & water quality permits approved and permit requirements identified and addressed.

5. The fire department and the owner have agreed on the end condition of the structure after training has been completed (agreement has been documented).

6. The fire department has clearly written firefighting training objectives that are achievable by no other means than burning in the structure.

Exterior Structure Survey

1. The structure is at least 300 feet away from other occupied structures (*NYS DEC part 215 Open Fires regulation*).

2. All toxic materials were removed from the structure in an approved manner (asbestos, asphalt shingles, vinyl siding or other vinyl products).

3. All utilities to the structure are disconnected and all adjacent/ exposure utilities removed or protected. Including home heating oil containers and LP gas containers removed.

4. Is 1 ½ times the minimum water supply (NFPA 1142, *Standard on Water Supplies for Suburban and Rural Fire Fighting*) for the entire structure and exposures available to the site or can it be reasonably supplied to the site.

5. Is there adequate access for apparatus placement and to conduct safe fireground operations outside of the 1 ½ times the height of the structure collapse zone.

6. Fireground operations can be conducted without creating a dangerous traffic condition to site or can the hazard be addressed with appropriate traffic management.

7. Debris and runoff from site is prevented from creating human or environmental contamination.

8. Any potentially hazardous toxic weeds, insect hives, or vermin have been removed.

9. Any trees, brush, and surrounding vegetation that could be a hazard to participants were removed.

10. Dangerous portions of any chimney, TV antenna, satellite dish, or vent pipe rendered safe.

11. Combustible materials not being used in the evolutions are removed or protected from unplanned ignition.

Interior Structure Survey

If the answer is "NO" to ANY of the questions below then live fire *interior-structural* firefighting training shall not be conducted in the structure.

1. The structural components are capable of withstanding the live load of contents, participants, and accumulated water.

2. Floors are structurally sound or can be covered to be made structurally sound.

3. Combustible materials and closed containers have been removed or can be made inert.

4. Holes in walls and ceilings have been patched to prevent unexpected fire spread.

5. Low-density combustible fiberboard and other highly combustible interior finishes have been removed.

6. Extraordinary weight above the training area has been removed.

7. There are two means of escape from the training area.

Live Fire Training Facility Inspection and Maintenance Checklist

If the answer is "NO" to ANY of the questions below, then live-fire training shall not be conducted in the training structure.

Administrative

1. Fire Department has received written permission from owner or AHJ to perform live fire training in the training structure.

2. Any required permits obtained and permit requirements identified and addressed.

3. Any required notifications made prior to live fire ignition.

4. The fire department and the owner/ AHJ have agreed on the end condition of the structure after training is completed.

5. The fire department has clearly written firefighting training objectives that are achievable by no other means than burning in the training structure.

Facility Survey and Inspection

1. Training structure visually inspected for damage prior to each live fire training evolution and building owner notified and damage documented.

2. Identified damage to structure is not severe enough to endanger the participants.

3. The owner or AHJ conducts a structural Integrity evaluation of the structure at least annually. The evaluation must be documented. (NFPA 1403, 6.2.6, 2012 Ed)

4. Licensed professional engineer or competent professional evaluation has occurred
    a. Gas-Fired Live Fire Training Structures every 10 years to include inspection of structure behind thermal linings
    b. Non-Gas Fire Live Fire Training Structures every 5 years to include inspection of structure behind thermal linings
    c. All live fire-training structures constructed of aluminate refractory structural concrete every 3 years to include removal of concrete core samples.

5. One and ½ times the minimum water supply for the fire flow demand is available on site or can be supplied to the site? (NFPA 1142, *Standard on Water Supplies for Suburban and Rural Fire Fighting*)

6. Separate water sources are available to be utilized for attack and back-up lines OR a single water source is engineered to provide maximum required fire flow for evolutions and backup power source or backup pumps, or both, are in place to provide an uninterrupted supply during operations.

7. *"All doors, windows and window shutters, railings, roof scuttles and automatic ventilators, mechanical equipment, lighting, manual or automatic sprinklers, and standpipes necessary for the live fire training evolution"* are operational*. (NFPA 1403, 6.2.3, 7.2.3, 2012 Ed)*

8. *"All safety devices, such as thermal sensors, oxygen and toxic and combustible gas monitors, evacuation alarms, and emergency shutdown switches" are operational. (NFPA 1403, 6.2.4, 7.2.4, 2012 Ed)*

Live Fire Evolution Checklist

Host Department_____ **FDID**_____

Facility/ Address _____ **Date** _____

Location of Live Fire in Structure_____

***Instructor-in-Charge**_____ **Instructor Number**_____

***Safety Instructor**_____ **Instructor Number**_____

***Ignition Officer**_____ **Instructor Number**_____

***Additional Instructor**_____ **Instructor Number**_____

***Additional Instructor**_____ **Instructor Number**_____

NYS Office of Fire Prevention and Control's *Acquired Structure Live Fire Decision Tree* OR *Live Fire Training Facility Inspection and Maintenance Checklist* have been completed and all answers were Yes?

Yes_____ **No**_____

Instructor Preparations

[____] 1) Lead instructor has reviewed NFPA 1403 and the Agency's Live Fire Training Policy immediately prior to planning and conducting the exercise(s).

[____] 2) Safety instructor has reviewed NFPA 1403 and the Agency's Live Fire Training Policy immediately prior to planning and conducting the exercise.

[____] 3) Support Instructors have reviewed NFPA 1403 and the Agency's Live Fire Training Policy immediately prior to planning and conducting the exercise.

Notification and Permits:

[____] **1) Necessary authorization to use facility for live fire evolutions has been obtained in accordance with local procedures. A copy of this authorization is on file with _____. (attach copy if applicable)**

[____] **2) Necessary burn permits have been obtained. A copy of this authorization is on file with _____. (attach copy if applicable)**

Pre-burn Planning:

[____] **1) Establish location of command post**

[____] **2) Establish location of rehabilitation area**

[____] **3) Establish position of all apparatus and ambulance or EMS vehicle**

[____] **4) Establish positions of all hose lines (attack, backup, safety, and exposure lines)**

[____] **5) Establish location of emergency evacuation assembly area**

[____] **6) Determine water supply meeting required total water supply**

[____] **a) Hydrant (2 hydrants on system with back-up power?)**

[____] **b) Water Tenders (Tankers)**

[____] **c) Drafting pond (2 drafting pumps?)**

[____] **7) Obtain weather report (attach copy)**

[____] **8) Establish operations area and mark perimeter**

[____] **9) Establish communications with operations area and with dispatch center, communications may be direct, face to face, by hand signals or radio**

Pre-burn Procedures:

[____] **1) All participants briefed on the following:**

[____] **a) Building layout- exits identified**

[____] **b) Operation of door and window latches**

[____] **c) Crew and instructor assignments**

[____] **d) Safety rules and accountability procedures**

- **safety briefing about burn**
- **safety rules to follow**
- **accountability procedures**

[____] **d) Building evacuation / Mayday procedures**

[____] **e) Demonstrate evacuation signal**

[____] **f) Building walk through with students**

[____] **2) Hoselines**

[____] **a) Safety line is of adequate flow and supplied from a separate source as primary lines**

[____] **b) Lines charged and flow tested**

[____] **c) Supervised by qualified personnel**

[____] **d) Adequate number of personnel and proper equipment**

[____] **3) Necessary tools and equipment positioned**

[____] **4) Personnel check**

[____] **a) OSHA/ NFPA 1971 approved full protective clothing**

[____] **b) NIOSH/ NFPA 1982 approved self-contained breathing apparatus**

[____] **c) All personal protective equipment donned and working properly**

[____] **5) the fire setup is proper for the intended evolution**

[____] **a) the instructor knows what material is being burned**

[____] **b) the fire load does not exceed specifications of the Live Fire Training Policy or the Live Fire Training Facility live burn matrix**

[____] **c) No flammable liquids or combustible liquids are used in interior fires**

[____] **d) <u>Flammable and combustible liquids are only used in exterior extinguisher fires and ARFF training</u>**

[____] **e) <u>The fire load configuration does not restrict safe egress for the participants</u>**

[____] **6) EMS status**

[____] **a) Instructor has verified that adequate EMS is on site and prepared/ EMS transport is on site if burning in acquired structure.**

[____] **b) Instructor has outlined the emergency medical procedures to be followed in the event they are needed**

[____] **7) Rehab area**

[____] **a) EMS personnel are assigned to monitor participants**

[____] **b) Fluids are provided (minimum 32 oz. water per participant).**

[____] **8) Back-up Team or FAST/RIT**

[____] **a) Minimum 4 personnel / 6 for acquired structures (may NOT be students)**

[____] **b) *Trained to FF I or Equivalent, NFPA 1407 (FAST/ RIT) trained, and Certified Interior by the Local FD**

[____] **c) Equipment is staged**

[____] **d) Means of communications is established between Back-up team and all fire instructors**

<u>Post-burn Procedures:</u>

[____] **1) All personnel accounted for**

[____] **2) Training critique conducted**

[____] **3) Documentation of injuries incurred and treatment rendered**

Instructor-in-Charge Signature:_____ Date_____

Sample Burn Matrix Chart for 12’ X 12’ X 8’ unprotected concrete burn room

Task	Evolution 1	15 Min Cool down/ Reset	Evolution 2	15 Min Cool down/ Reset	Evolution 3	15 Min Cool down/ Reset	Evolution 4	15 Min Cool down/ Reset	Evolution 5
Attack Hose line	Company 1		Company 5		Company 4		Company 3		Company 2
Reset	Company 2		Company 1		Company 5		Company 4		Company 3
Back-Up Hose Line	Company 3		Company 2		Company 1		Company 5		Company 4
Reset	Company 4		Company 3		Company 2		Company 1		Company 5
Outside Ladder/ Vent	Company 5		Company 4		Company 3		Company 2		Company 1

Fuel	Evolution 1	15 Min	Evolution 2	15 Min	Evolution 3	15 Min	Evolution 4	15 Min	Evolution 5
Pallets (50# ea)	2		2		2		2		2
Bale Hay (40# ea.)	2		1.5		1.5		1		1
Total Weight	180		160		160		140		140

These charts are designed for a class of twenty (20) student/ participants to be conducted within a three (3) hour session with time for set-up and clean-up at a live fire training facility. (See your live fire training facility manufacturer’s guidelines for fire load maximums).

15 minute cool down/ reset time begins when attack crew has completely extinguished the training fire and begins hydraulic ventilation of burn room.

Attachment #2 Live Fire Policy
(Revised January 2007)

RECOMMENDED
FAST TEAM EQUIPMENT

- 2 sets of forcible entry tools (Halligan bar /flat axe)
- 2 six foot hooks **(steel recommended)**
- 2 search ropes - 150' X 1/4" dia.
- 1 cut off saw (w/blade appropriate for structure type) or ventilation chain saw
- 1 reciprocating saw (**battery operated recommended)**
- 1 Stokes style basket
- 2 Fire Service Ground Ladders appropriate for the size of structure
- 1 Thermal Imaging Camera (Optional)
- Spare SCBA
- Spare SCBA bottles
- 1 Rescue Rope - 150' X 1/2" dia. Life Safety
- 6 pieces 24' X 1" tubular webbing
- 2 - 2" and 2 - 4" split pulleys
- 6 large gate carabineers
- BLS EMS Equipment (C-collars, AED **(if available)**, O2, 1st aid kit)
- Charged hose line availability

RECOMMENDED
INDIVIDUAL FAST TEAM MEMBER'S EQUIPMENT

- Full PPE
- SCBA
- Pass Device
- Portable radio - min. of 1 per 2 FF□s
- Personal light - hands free
- **Personal rope - 35' X 3/8" dia or NFPA Escape rope**
- 1 - Large gate carabineer
- knife
- Wire Cutters
- Doors Chocks
- Forcible Entry Tool