

Operating Guideline # 1700

Live Fire Training

April 13, 2026



PURPOSE:

The purpose of this Operating Guideline (OG) is to inform firefighters about the risks and benefits of live fire training and apply control measures to minimize chemical and thermal exposures on the training ground to all participants.

ISSUE/RATIONALE:

Live fire training provides important practical learning for firefighters. Live fire is any unconfined open flame or device that can propagate fire to a structure or other combustible materials. From a safety perspective, a live fire training evolution should be treated as if it is a real fire emergency. If pre-planning and safe operations are not followed, this type of training has great potential for injuries or deaths to firefighters.

GUIDELINE:

1. Every firefighter will take the Fire Safety Research Institute online training course titled "[Training Fire Exposures](#)", this course will explore the risks and benefits of live fire training and learn how to apply control measures to minimize chemical and thermal exposures on the training ground.
2. All live fire training shall follow NFPA 1403, Standard on live fire training, most current edition.
3. Only approved fuel bundles shall be used in live fire training environments; any other fuels that are added to the training environment may cause unpredictable fire behaviour and unnecessary exposure to chemicals that have not been considered.
4. Live fire should be developed to allow students to experience fire dynamics such as obscured vision and working in this condition, high heat and use of personal protective equipment for interior operations, hose handling, and how to recognize cues for flashover, rollover and surface burning.
5. OSB, particle board, and plywood fuel loads should only be considered when training members on visual cue recognition. These fuels present the most severe thermal environments, the most dramatic visual obscuration and the most consistent fire dynamics.
6. Lowering the head of participants, rotation of participant positions in the interior fire environment, and limiting the overall duration of time inside the training structure will all correspondingly lower the chemical and heat exposure to all participants.
7. Smoke barrels are helpful to generate more visual obscurity
8. All participants in the warm and hot zones will wear full personal protective equipment, including respiratory protection. Any time you see smoke, there is potential for chemical exposure risk.
9. Fuel loads made of particle board and pallets will produce less smoke and the least consistent fire dynamics when burning class A fuels; however, they may offer greater safety due to the lower heat exposure.
10. Changing the amount of structure ventilation can impact smoke concentrations and heat production.
11. Good hygiene and cleaning practices after/during live fire training are effective control measures for reducing risk and must be in place, including:

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- A) Bucket, Soap, Decon appliance with Brushing
 - B) Hose specific for washing down gear
 - C) Area where debris and dirt can be washed away
 - D) Decon firefighters should also have PPE
12. Participants should all stay out of the flow paths created by the fire. Do not stand in the smoke if possible.
13. Instructors should be mindful to keep students back from the fire area, to rotate positions of everyone interior and to use shields to minimize the heat exposure to PPE.
14. Adjusting head height by one foot lower, can have important impacts on thermal exposure risk. Similar reductions were found in the chemical exposures.
15. Instructors and safety officers should limit the amount of time that they spend inside elevated thermal environments. Rotation of instructors, switching instructors, limiting the fuel load heat production and reducing ventilation cycles can reduce thermal and chemical conditions.
16. The instructor in charge shall develop and utilize a training safety plan that formalizes all safety measures and ensure it is shared with all students and instructors.
17. The instructor in charge shall designate an incident safety officer (ISO) who will conduct a safety briefing and safety walkthrough of the building in advance of the training, and as part of it daily or when the building changes any safety layouts; the ISO will review the Training Safety Plan and ensure all students and instructors know how to identify and respond to an emergency.
18. The instructor in charge and the incident safety officer will ensure all students and instructors have the appropriate personal protective equipment and that it is inspected prior to and after use. Use the form Appendix II.
19. The instructor in charge shall use effective incident command, accountability and entry control systems during live fire training and ensure all students and instructors are accounted for at all times.
20. The instructor in charge will brief all students on any changes to radio communications outside of standard processes, confirm which radio channel the training will operate on, confirm each student is equipped with a portable radio and ensure the portable radios are functioning.
21. The instructor in charge will establish and include in the Training Safety Plan a procedure for how a firefighter emergency will be managed ("No Duff" procedure) and ensure that all students and instructors are familiar with it.
22. The instructor in charge will establish and include in the Training Safety Plan a procedure on the emergency evacuation of the building if required.
23. The instructor in charge will establish and maintain a team capable of executing a firefighter rescue in the event of a mayday (Rapid Intervention Team (RIT) or on-deck crew) and ensure that all required equipment is immediately available.
24. The incident safety officer and instructor in charge shall ensure that patient care equipment (such, as medical bag and defibrillator) are centrally staged and that all students and instructors are aware of their location in the event they are urgently required.

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25. The incident safety officer and instructor in charge shall ensure all students and instructors are instructed to immediately report any injuries or illness.
26. Live fire will not use people as simulated victims — instead, live fire mannequins will be used only.
27. The instructor in charge will evaluate the quantity and types of materials to be burned, referencing NFPA 1403 for guidance, to ensure that fires are properly and safely constructed. This shall include determination of combustible materials, fuels and ignition procedures. Use fuels that have known burn characteristics and use only the amount of fuel necessary to create the desired size fire.
28. The instructor in charge will complete a comprehensive inspection of the burn building prior to use to ensure that it is not inhabited and to confirm that it is structurally sound and there are no hazards — use a formal checklist to ensure the inspection is consistent and does not miss anything (Appendix III).
29. The instructor in charge will mitigate any hazards that are identified before training begins. Ensure all unnecessary combustibles and fuels are removed from the building and the immediately adjacent area.
30. The incident safety officer shall ensure all access/egress points are free of potential obstructions.
31. The incident safety officer shall ensure a rehabilitation sector is established that includes, at minimum, the following:
 - an area for students and instructors to dress down when assigned to rehabilitation
 - water and electrolyte drinks for students and instructors to remain hydrated
 - an area for cooling and reducing core temperatures (misting fans, cooling chairs etc.)
 - medical monitoring as part of rehabilitation (Appendix IV)
 - air monitoring at the rehabilitation area
32. The instructor in charge will encourage all participants to pre-hydrate 5 days before training begins via email.
33. The incident safety officer will ensure a decontamination sector is set up and utilized and that all students and instructors are decontaminated prior to being assigned to rehabilitation and at the completion of training.
34. The instructor in charge and incident safety officer shall ensure a sufficient supply of Self-Contained Breathing Apparatus (SCBA) air cylinders is available and that respiratory protection is utilized when required.
35. The instructor in charge will provide a reliable and sustainable water supply, and ensure a redundancy in the event that water supply suddenly fails (such as, ensuring the main pumping unit has a full tank and a second pumping unit is immediately available).
36. The instructor in charge and the incident safety officer will utilize assistant safety officers interior and exterior, qualified under NFPA 1521, whose function is to continually evaluate the training environment to identify hazards and changing conditions. The Training Safety Officers have the authority to alter, suspend or terminate dangerous or life-threatening operations.

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37. The instructor in charge will ensure enough participants (students and instructors) to safely and effectively complete the training and ensure the provision of RIT/On-deck, pump operator(s), entry control and Training Safety Officers.

38. The instructor in charge will make sure participants have the appropriate equipment, knowledge and practical training prior to participating in the scenario, such as:

- safety
- fire behaviour
- personal protective equipment
- ladders
- fire hoses and streams
- water supply
- ventilation
- forcible entry

39. The instructor in charge will ensure that each day a PAR Q questionnaire is completed by all participants including instructors and safety officers prior to the commencement of the daily training. This document must be retained for records. Appendix I

RESPONSIBILITY:

It is the responsibility of all staff to comply with the provisions of this Operating Guideline.

REFERENCES:

- [UL Fire Safety Research Institute online training course “Training Fire Exposures: A Risk-Benefit Framework”](#)
- [Tactical Considerations Firefighter Research: Follow the rules of live-fire training](#)
- [Section 21 Firefighters Guidance Note 7-5](#)
- [NFPA 1403, Standard on live fire training, 2012 edition](#)
- NFPA 1521, Standard for Fire Department Safety Officer Professional Qualifications
- [Occupational Health and Safety Act](#)
 - clause 25(2)(a) for providing information and instruction to a worker
 - clause 25(2)(d) for making workers aware of hazards
 - clause 25(2)(h) for taking every precaution reasonable in the circumstances to protect workers

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Appendix I – Daily PAR Q form

Common sense is your best guide when you answer these questions. Please read the questions carefully and answer each one honestly:

1. Has your doctor ever said that you have a heart condition and that you should only do physical activity recommended by a doctor?
2. Do you feel pain in your chest when you do physical activity?
3. In the past month, have you had chest pain when you were not doing physical activity?
4. Do you lose your balance because of dizziness or do you ever lose consciousness?
5. Do you have a bone or joint problem (for example, back, knee or hip) that could be made worse by a change in your physical activity?
6. Is your doctor currently prescribing drugs (for example, water pills) for your blood pressure or heart condition?
7. Do you know of any other reason why you should not do physical activity?

If you answered yes to any of the questions above, you can not participate until you talk with your doctor by phone or in person and have a fitness appraisal. Tell your doctor about the PAR-Q and which questions you answered YES.

PLEASE NOTE: If your health changes so that you then answer YES to any of the above questions, tell the instructor in charge immediately.

“I have read, understood and completed this questionnaire.”

NAME

SIGNATURE

DATE _____

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Appendix II - NFPA 1403: Live Fire PPE Daily Inspection Checklist

Date: _____

Participant Name: _____

Instructor/Safety Officer: _____

- Turnout Coat & Trousers (NFPA 1971)
 - No rips, tears, or open seams in the outer shell.
 - Thermal liners and moisture barriers are present and completely dry.
 - DRD (Drag Rescue Device) is correctly installed and accessible.
 - Reflective trim is secure and visible.
 - All closures (hooks, loops, zippers) are fully functional.
- Helmet & Hood
 - Helmet shell is free of cracks, dents, or heat-related warping.
 - Suspension system and chin strap are secure and undamaged.
 - Face shield/Goggles are clean, clear, and functional.
 - Protective hood is free of holes and maintains elasticity at the face opening.
- Gloves & Boots
 - Gloves are free of punctures, charring, or liner inversion.
 - Boots have no punctures and maintain water resistance.
 - Boot soles have adequate tread; steel toes/shanks are not exposed.
- SCBA & PASS (NFPA 1981 / 1982)
 - Cylinder is full and within the current hydrostatic test date.
 - Facepiece seal is intact; no "crazing" or pitting on the lens.
 - Hoses and regulator are free of leaks and physical damage.
 - PASS device is tested and confirmed functional.
 - Low-air alarm (Vibralert/Whistle) is functional.
- Final Safety Verification
 - Gear is confirmed dry (Internal & External).
 - Interface check completed (No exposed skin at wrists, neck, or ankles).
 - Participant has cleared pre-burn medical vitals.

Participant Signature: _____

Safety Officer Signature: _____

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Appendix III – Burn Building NFPA 1403 Live Fire Training Checklist

Structure Location: _____ Date: _____

1. Structural Integrity & Safety

- **Structural Certification:** Building has been cleared by a licensed engineer or building inspector.
- **Floor/Roof Stability:** Confirmed no soft spots or collapse hazards in burn areas.
- **Stairways:** Steps and railings are secure; non-secure areas are cordoned off.
- **Wall/Ceiling Integrity:** Holes patched to prevent unintended fire spread between floors.

2. Hazard Mitigation

- **Contaminants:** All asbestos, lead, and mercury-containing items removed.
- **Utilities:** Gas, electricity, and water lines are physically disconnected and locked out.
- **Flammable Materials:** All carpet, upholstered furniture, and flammable liquids removed.
- **Environmental:** Verified that local air quality permits are active and neighbors notified.

3. Egress & Access

- **Exits:** All primary and secondary exit routes are clear and unobstructed.
- **Windows/Doors:** All required egress openings are operational from the inside.
- **Lighting:** Emergency lighting or backup flashlights are positioned at exit points.

4. Fire Control & Operations

- **Water Supply:** Two separate water sources (min. 500 GPM) confirmed and tested.
- **Fuel Load:** Safety Officer has inspected and approved Class A materials only.
- **Communication:** All portable radios tested on the designated training channel.
- **Personal Protective Equipment:** Final SCBA and PPE check completed for all participants.

5. Final Command Check

- **Safety Officer (Name):** _____
- **Ignition Officer(s) (Name):** _____
- **Full Walk-Through:** Completed by Instructor-in-Charge and Safety Officer.

Sign-off (Instructor-in-Charge): _____

Sign-off (Incident Safety Officer): _____

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Appendix IV – NFPA 1403 Live Fire Medical Monitoring Log

Date: _____ Incident/Training ID: _____

REHAB Officer: _____

Medical Provider (EMT/Medic): _____

Participant Entry/Exit Tracking

Participant Name	Pre Burn Vitals (BP/HR)	Entry Time	Exit Time	Post Burn Vitals (BP-HR)	SpO2 / Body Temp	Disposition

Critical Benchmarks for REHAB Officer

- Hydration: Ensure participants drink at least 16 oz of water/electrolyte mix during rehab.
- Active Cooling: Use cold towels, fans, or forearm immersion if ambient temps or core temps are high.
- Medical Release: No participant may re-enter the burn building if:
 - Heart Rate is above 110 bpm after 20 minutes of rest.
 - Systolic BP is > 160 or Diastolic BP is > 100.
 - SpO2 is below 95%.
 - CO Monitoring: Participant shows signs of headache, nausea, or dizziness.

Signature of Medical Officer: _____ **Date:** _____