

## **Operating Guideline # 1700**

### **Live Fire Training**

**December 9, 2023**



#### **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, 2012 edition.
3. Only approved fuel bundles shall be used in the 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 PPC interior operations, hose handling, how to use 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 zone will wear full PPE 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, however 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 a live fire training are effective control measures for reducing risk.
12. Participants should all stay out of the flow paths created by the fire.
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.

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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.

#### **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](#)
- [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