



## LIVE FIRE TRAINING - OPERATIONS LEVEL COURSE

EFFECTIVE JANUARY 1, 2018

### COURSE DESCRIPTION

NFPA 1403, *Standard on Live Fire Training Evolutions* involves specific requirements for pre-requisite training, evolution planning, development, implementation, supervision and management oversight, monitoring, and records management of live fire training evolutions in acquired structures, training center burn buildings, and a variety of types of exterior fire evolutions.

This course will provide students with an introduction to the necessary knowledge and tools to properly prepare and conduct live fire training evolutions. The course includes an in-depth analysis of NFPA 1403, addressing evolutions at acquired structures; gas-fired training buildings; non-gas-fired training buildings; and exterior props, vehicle fires, and exterior class B fires.

The course is broken up into three parts and must consist of a minimum of twenty-four (24) course hours. The first part of the training contains extensive classroom activities, including scenario-based learning, group problem-solving/planning, and lecture, culminating in a written examination. The second and third parts of the training include a live fire training practical, where students can put into practice the knowledge learned during the classroom portion of the course. The course concludes with a post-evolution debriefing. The combination of classroom and practical activities allows participants to apply the knowledge of the applicable standards to live fire training activities.

### CERTIFICATION

The Live Fire Instructor certification provides certificate holders with the knowledge, skills, and abilities necessary to safely conduct live fire training evolutions. The certification meets the **minimum requirements set forth in the nationally recognized standard, NFPA 1403: “Standard on Live Fire Training Evolutions.”**

The Live Fire Instructor certification is optional, but *will be required* for all fire instructors and assistant fire instructors who provide instruction in live fire training evolutions *required for certification as a firefighter*.

- **The Live Fire Instructor certification became available on January 1, 2018, the effective date of the new fire training rules.**
- **The Live Fire Instructor certification will not be required until January 1, 2021, allowing for a three year implementation period.**

To be eligible for certification, students shall successfully complete the twenty-four hour Live Fire Training Operations Course through an Ohio chartered fire training program. The course is designed to teach qualified fire instructors and assistant fire instructors the necessary skills, knowledge, and abilities to safely and successfully lead live fire training evolutions in accordance with their specific chartered fire training program's standard operating procedures. The NFPA 1403 standard serves as the guidance document from which all of the course materials are based. The standard was created to train firefighters to avoid injuries and fatalities during live fire training evolutions. Compliance with the standard can dramatically decrease the likelihood of firefighter injuries and deaths.

Subsequent to successfully completing the Live Fire Training Operations Course, students will be required to achieve competency in the four job performance requirements – Instructor-in-Charge (Incident Commander), Instructor, Safety Officer, Fire Control Team – through an Ohio chartered fire training program.

### COURSE REQUIREMENTS

1. Lecture (Face-to-Face): 8 hours
2. Live fire training practical activities: 16 hours

## **CONTACT HOURS**

Student contact hours: 50 – 60 minutes = 1 hour; 25 – 30 minutes = ½ hour; full days (0800 – 1600) = 7 hours (assuming 1 hour for lunch unless otherwise documented). Instructional hours may include topic instruction, material review, and testing for knowledge, e.g., quizzes. Instructional hours shall not include practical skill testing, written testing for certification, or instruction on any topic(s) not listed on this guide.

## **ATTENDANCE POLICY**

100% attendance required with no make-up opportunities.

## **ADDITIONAL MATERIALS**

- Textbook: *Live Fire Training Principles and Practice*, Jones & Bartlett Learning
- Provided by instructors
  - Case histories
  - NIOSH reports
  - Course Evaluation Form
  - NFPA 1403 Forms
  - Water Supply Calculator
  - OEMS Fire Charter Training Facilities - Live Fire Training Structures and Props Capabilities Summary spreadsheet
  - NFPA Report - U.S. Firefighter Deaths Related to Training, 2001-2010

## **COURSE CONTENT**

Students shall be provided with:

- Information on the history of live fire training evolutions
- Review of live fire training evolution incidents
- Information on live fire training legal considerations
- Information on preparation and training of live fire evolution instructors
- Pre-requisites to becoming a live fire training instructor
- Comprehensive review of the fundamental elements of the NFPA 1403, *Standard on Live Fire Training Evolutions*, including how to use NFPA 1403
- An understanding of the impact of NFPA 1403 on live fire training
- Information on the effects of live fire training on firefighter physiology
- The fundamental elements of planning for live fire training
- Information on live burn evolutions in acquired structures
- Information on live burn evolutions in gas-fired and non-gas-fired structures
- Information on nonstructural training props

Proper documentation of students meeting course objectives is required.

## **COURSE SCHEDULE**

### **DAY ONE - CLASSROOM**

Module 1 – NFPA 1403 Chapters 1, 2, and 3	1.5 hours
<ul style="list-style-type: none"><li>• Introduction and overview</li></ul>	
Module 2 – NFPA 1403 Chapter 4	2.5 hours
<ul style="list-style-type: none"><li>• General</li></ul>	
Module 3 – NFPA 1403 Chapters 5, 6, 7, and 8	2.0 hours
<ul style="list-style-type: none"><li>• Acquired structures</li><li>• Gas-Fired live fire training structures</li><li>• Non-Gas-Fired live fire training structures</li><li>• Exterior live fire training props</li></ul>	
Module 4 – NFPA 1403 Chapter 9 and Annexes	1.0 hours
<ul style="list-style-type: none"><li>• Reports and records</li><li>• Annex A – Explanatory Materials</li><li>• Annex B – Live Fire Evolution Sample Checklist</li><li>• Annex C – Responsibilities of Personnel</li><li>• Annex D – Heat Exhaustion and Heat Stroke in Training</li><li>• Annex E – Informational Resources</li></ul>	
Module 5 – Post-Test	1.0 hours

### **DAY TWO (or DAY THREE) – LIVE FIRE TRAINING STRUCTURES AND PROPS (Burn facility)**

Module 6 – Live fire training structure hands-on training	8.0 hours
<ul style="list-style-type: none"><li>• Review positions and responsibilities<ul style="list-style-type: none"><li>○ Instructor-in-Charge</li><li>○ Safety Officer</li><li>○ Instructor</li><li>○ Fire Control Team (Ignition Officer and Observer)</li></ul></li><li>• AHJ (Chartered Organization) review of standard operating procedures for all positions and props</li><li>• If time permits<ul style="list-style-type: none"><li>○ Inspect props and complete safety checks</li><li>○ Set-up and preparation</li><li>○ Assign positions and rotations</li><li>○ Perform live fire evolutions per SOP of facility<ul style="list-style-type: none"><li>• Gas-Fired structures</li><li>• Non-Gas-Fired structures</li><li>• Exterior live fire props</li></ul></li></ul></li></ul>	

**DAY THREE (or DAY TWO) – ACQUIRED STRUCTURE PRE-PLAN (at acquired structure and classroom)**

Module 7 – Acquired structures pre-plan overview and travel to acquired structure

8.0 hours

On-site group preparation and data gathering

In classroom plan development

- Documents and permits required
- Tools, supplies, and equipment needed
- Hazard identification and mitigation
- Prop and aids development
- Order of proposed burns and burn box location/sizes
- Timeline for burn
- Water supply requirements
- Placement and location of apparatus and support staff needed
- Instructors needed

Presentation and evaluation of pre-plan by each group

Class debriefing and overall course evaluation

**Each participant shall be required to complete the Ohio Division of EMS “Live Fire Training Operations Job Performance Requirement Check-Off” sheets under the auspices of a chartered fire training program, within twelve (12) months of completion of this course, in order to be eligible for certification as a Live Fire Instructor. A copy of the course completion certificate and completed JPRs shall be kept in the chartered fire training program course/student files.**

**Due to file size the Live Fire Instructor course materials are not available for download. The course materials will be provided to Ohio’s chartered fire training programs at no charge. Please contact the Division of EMS Fire Coordinator to request the Live Fire Training course materials.**

DIVISION OF EMERGENCY MEDICAL SERVICES

1.800.233.0785

[ems-firecertifications@dps.ohio.gov](mailto:ems-firecertifications@dps.ohio.gov)

## OHIO LIVE FIRE TRAINING – OPERATIONS LEVEL - INSTRUCTOR COURSE REQUIREMENTS

STANDARD / DIRECTIVE	O.A.C. REFERENCE	LIVE FIRE TRAINING - OPERATIONS LEVEL - CHARTER REQUIREMENTS (PRE-REQUISITES)
N/A	4765-24-02	In order to hold a Live Fire Instructor classification a chartered fire training program shall hold a Fire Instructor classification. The program shall have held such classification for at least two years, and shall have conducted at least one (1) Fire Instructor Course in the past two (2) years.
N/A	4765-24-02 4765-24-03 4765-24-15	<p>The chartered fire training program shall hold a Live Fire Instructor classification issued by the Ohio Department of Public Safety, Division of Emergency Medical Services. The classification shall be granted to a chartered fire training program that:</p> <ul style="list-style-type: none"> <li>• Meets all requirements as set forth in rule 4765-24-03 of the Administrative Code</li> <li>• Provides the curriculum as set forth in rule 4765-24-15 of the Administrative Code</li> <li>• Holds a Fire Instructor classification</li> <li>• Utilizes instructors in accordance with the following:                             <ul style="list-style-type: none"> <li>- Each instructor shall hold a current and valid Fire Instructor or Assistant Fire Instructor certificate in accordance with Chapter 4765-21 of the Administrative Code</li> <li>- Each instructor shall meet the Live Fire Instructor requirements set forth in paragraphs (C), (D), (E), and (F) of rule 4765-21-03 of the Administrative Code</li> <li>- Each instructor shall be appointed by the program director as a Live Fire Instructor Trainer</li> </ul> </li> <li>• Has authorization from its authorizing official to provide Live Fire instructor training courses</li> </ul>
NFPA 1403	4765-24-03	<p>The chartered fire training program shall have access to an appropriate burn structure and shall acquire/prepare all required permits or documentation. Structure must be safe and ready to burn prior to live fire portion(s) of the class.</p> <ul style="list-style-type: none"> <li>• Acquired structures shall meet requirements outlined in NFPA 1403, Chapter 5; with inspection form (NFPA 1403 Appendix A, Figure A.5.2.5) completed prior to live burn evolutions.</li> <li>• Gas fired structures shall meet requirements outlined in NFPA 1403 (Appendix A, Figure A6.2.1.1) prior to live burn evolutions.</li> <li>• Non-gas fired structures shall meet requirements outlined in NFPA 1403, Chapter 7; with inspection form (NFPA 1403 Appendix A, Figure A6.2.1.1) completed prior to live burn evolutions.</li> </ul>
N/A	4765-24-03	The chartered fire training program shall have access to non-structural props used to train firefighters.
NFPA 1403	4765-24-15	The Live Fire Training Operations Course shall be conducted in accordance with NFPA 1403, <i>Standard on Live Fire Training Evolutions</i> .
STANDARD / DIRECTIVE	O.A.C. REFERENCE	LIVE FIRE TRAINING – OPERATIONS LEVEL – INSTRUCTOR TRAINER REQUIREMENTS (COURSE INSTRUCTOR PRE-REQUISITES)
N/A	4765-24-15	Course instructors shall hold a valid Firefighter II certificate that is in good standing, issued under rule 4765-20-03 of the Administrative Code.
N/A	4765-21-03	Course instructors shall hold a valid Fire Instructor certificate that is in good standing, issued under rule 4765-21-03 of the Administrative Code.
N/A	4765-24-15	Course instructors shall have held the Fire Instructor certificate for at least five years.

STANDARD / DIRECTIVE	O.A.C. REFERENCE	LIVE FIRE TRAINING – OPERATIONS LEVEL – INSTRUCTOR TRAINER REQUIREMENTS (COURSE INSTRUCTOR PRE-REQUISITES)
N/A	4765-24-15	<p>Course instructors shall have operated extensively in the environment in which they will teach, and have an excellent understanding of all potential nuances and dangers the situation can present:</p> <ul style="list-style-type: none"> <li>• Instructors shall have assisted with at least ten (10) documented live burn evolutions conducted as part of a Firefighter I and/or Firefighter II course through an approved chartered fire training program, with an evolution defined as pre-burn through conclusion of the live fire training session.</li> <li>• Experience as an Assistant Instructor can be counted toward the ten (10) documented live burn evolutions.</li> </ul>
N/A	4765-24-15	Course Instructors shall have served as a crew lead on at least five (5) live burn evolutions and as the Instructor-in-Charge (Incident Commander) on at least one (1) live burn training session in the preceding five (5) years, with an approved fire charter.
N/A	4765-24-15	Course instructors shall possess extensive knowledge regarding NFPA 1403, <i>Standard on Live Fire Evolutions</i> and other related NFPA standards, fire behavior, building construction, smoke reading, flow path management, and hostile fire events.
N/A	4765-24-15	Course instructors shall have successfully completed the state of Ohio “Live Fire Training Operations Course” including the Job Performance Requirements (JPRs) for Instructor, Safety Officer, Ignition Officer, and Incident Commander/Lead Instructor.
N/A	4765-24-15	Course instructors shall be physically fit enough to perform their duties, including emergency actions.
N/A	4765-24-15	Course instructors shall have at least two letters of recommendation, one from a chartered fire training program and one from a fire chief.
N/A	4765-24-15	Course instructors shall have successfully completed IS 700, ICS 100 or online equivalent, and ICS 200.
STANDARD / DIRECTIVE	O.A.C. REFERENCE	LIVE FIRE TRAINING – OPERATIONS LEVEL—STUDENT ADMISSION REQUIREMENTS (PRE-REQUISITES)
N/A	4765-20-03	Students shall hold a valid Firefighter certificate that is in good standing, issued under rule 4765-20-03 of the Administrative Code.
N/A	4765-21-03	Students shall hold a valid Fire Instructor or Assistant Fire Instructor certificate that is in good standing, issued under rule 4765-21-03 of the Administrative Code.
N/A	Out of State Students	<p>Students from outside of the state of Ohio who wish to participate in this course:</p> <ul style="list-style-type: none"> <li>• Must show proof of a valid Firefighter certificate that is in good standing issued from their state.</li> <li>• Must show proof of a valid Fire Instructor or Assistant Instructor certification that is in good standing.</li> <li>• Must meet all other entry requirements.</li> </ul>
N/A	4765-21-03	Students shall have an agency sponsor and shall provide a letter signed by their chief and/or training officer approving their participation in the course.
HSPD-5,8	4765-21-03	Students shall have successfully completed National Incident Management System IS 700, ICS 100 or online equivalent, and ICS 200.

## OHIO LIVE FIRE INSTRUCTOR – CERTIFICATION REQUIREMENTS

STANDARD / DIRECTIVE	O.A.C. REFERENCE	QUALIFICATIONS FOR LIVE FIRE INSTRUCTOR CERTIFICATION
N/A	4765-21-03	Applicants shall hold a valid Fire Instructor or Assistant Fire Instructor certificate that is in good standing, issued under rule 4765-21-03 of the Administrative Code.
NFPA 1403	4765-21-03 4765-24-02	Applicants shall complete the "Live Fire Training Operations Course" through a chartered fire training program except that credit may be given for successful completion of a substantially similar live fire training course when approved by the executive director.
NFPA 1403	4765-21-03	Applicants shall complete the "Live Fire Training Operations Job Performance Requirement Check-Off" under the auspices of a chartered fire training program within twelve months of completion of the "Live Fire Training Operations Course."
N/A	4765-21-03	Applicants shall submit a completed "Live Fire Instructor Initial Application" within 90 days after completion of the "Live Fire Training Operations Job Performance Requirement Check-Off."
N/A	Out of State Students	Students from outside of the state of Ohio will not be eligible to gain an Ohio Live Fire Instructor certification: <ul style="list-style-type: none"> <li>Out of state students upon completion of the Live Fire Training Operations Course and the Job Performance Requirements in accordance with rules 4765-21-03 and 4765-24-15 shall receive a certificate of completion from the fire charter.</li> </ul>

## OHIO LIVE FIRE TRAINING – OPERATIONS LEVEL - COURSE OBJECTIVES

STANDARD / DIRECTIVE	ENABLING LEARNING OBJECTIVES (ELO)	Module 1 – Introduction and Overview <u>Terminal Learning Objectives (TLO)</u> At the conclusion of this module, participants will be able to describe the purpose, scope and application of the NFPA 1403 standard to provide a process for conducting live fire training in safe facilities that minimizes health and safety hazards.
NFPA 1403	ELO 1-1	Provide overview of NFPA 1403.
	ELO 1-2	Describe the purpose, scope and application of NFPA 1403.
	ELO 1-3	Explain the referenced publications applicable to NFPA 1403.
	ELO 1-4	Review key definitions used in NFPA 1403.
STANDARD / DIRECTIVE	ENABLING LEARNING OBJECTIVES (ELO)	Module 2 – NFPA 1403 Chapter 4 General <u>Terminal Learning Objectives (TLO)</u> At the conclusion of this module, participants will be able to describe the various considerations regarding live fire training including: safety practices, permits required, student pre-requisites, safety officer, extreme weather, Instructor-in-Charge and Instructors, fire control team, personal protective clothing, communication, emergency medical services, water supply, fuel materials, parking/staging, visitors and spectators, and pre-burn plan/briefing.
NFPA 1403	ELO 2-1	Describe the safety practices that must be followed during live fire training evolutions including impact of extreme weather.
	ELO 2-2	Articulate the minimum training requirements for a student to participate in a live fire training evolution.
	ELO 2-3	Describe the role and responsibilities of a safety officer for live fire training evolutions.
	ELO 2-4	Describe the role and responsibilities of the Instructor-in-Charge and Instructors for live fire training evolutions.
	ELO 2-5	Explain the duties of the fire control team.

STANDARD / DIRECTIVE	ENABLING LEARNING OBJECTIVES (ELO)	<b>Module 2 – NFPA 1403 Chapter 4 General</b> <u>Terminal Learning Objectives (TLO)</u> At the conclusion of this module, participants will be able to describe the various considerations regarding live fire training including: safety practices, permits required, student pre-requisites, safety officer, extreme weather, Instructor-in-Charge and Instructors, fire control team, personal protective clothing, communication, emergency medical services, water supply, fuel materials, parking/staging, visitors and spectators, and pre-burn plan/briefing.
NFPA 1403	ELO 2-6	Determine the appropriate personal protective clothing for live fire training evolutions.
	ELO 2-7	Establish coordinated fireground communication plan including evacuation plan.
	ELO 2-8	Ensure basic life support emergency medical services and reporting functions are available for live fire training evolutions.
	ELO 2-9	Determine the rate and duration of water flow necessary for each live fire training evolution including backup lines and reserves.
	ELO 2-10	Recognize the fuel materials that are allowed in live fire training evolutions per 1403.
	ELO 2-11	Assess all parking/staging areas needed for live fire training evolutions including vehicles/equipment that are part of evolution and those not part of evolution.
	ELO 2-12	Determine visitor/spectator areas to ensure safety of those not participating in evolutions.
	ELO 2-13	Determine pre-burn plan/briefing that covers all facets of each evolution including crew assignments, props, possibility of victims, adjacent property notifications, and safeguards for streets or highways in the vicinity of evolutions.
STANDARD / DIRECTIVE	ENABLING LEARNING OBJECTIVES (ELO)	<b>Module 3 – NFPA 1403 Chapters 5, 6, 7 and 8</b> <u>Terminal Learning Objectives (TLO)</u> At the conclusion of this module, participants will learn what it takes to adequately prepare an acquired structure to ensure all hazards such as structural deficiencies, hazardous containers, hazardous environmental conditions, and debris have been removed and/or eliminated. In addition, participants will learn how to ensure gas-fired and non-gas-fired live fire training structures are inspected and tested for structural integrity prior to and after completing live fire training evolutions. Finally at the conclusion of this module, participants will learn how to safely integrate exterior live training props in the evolutions.
NFPA 1403	ELO 3-1	Prepare an acquired structure for the live fire training evolution including hazards, utilities, and exits.
	ELO 3-2	Inspect and test gas-fired live fire training structures prior to and after completing evolutions for safe conditions.
	ELO 3-3	Inspect and test non-gas-fired live fire training structures prior to and after completing evolutions for safe conditions.
	ELO 3-4	Integrate exterior props safely in live fire training evolutions.
STANDARD / DIRECTIVE	ENABLING LEARNING OBJECTIVES (ELO)	<b>Module 4 – NFPA 1403 Chapter 9 and Annexes</b> <u>Terminal Learning Objectives (TLO)</u> At the conclusion of this module, participants will be able to describe the records and reports that must be maintained on all live fire training evolutions. In addition, participants will review the additional information that is included in the annexes of NFPA 1403.
NFPA 1403	ELO 4-1	Prepare required records and reports that must be maintained on live fire training evolutions.
	ELO 4-2	Correlate NFPA 1403 annex materials to appropriate requirement in the standard including use of checklists, responsibilities of personnel, heat exhaustion and heat stroke, and additional references.



STANDARD / DIRECTIVE	ENABLING LEARNING OBJECTIVES (ELO)	<b>Module 5 – Post-Test</b> <u>Terminal Learning Objectives (TLO)</u> At the conclusion of this module, participants will complete a post-test.
NFPA 1403	ELO 5-1	Demonstrate a foundation of knowledge regarding skills and resources necessary to safely and efficiently lead live fire training evolutions.
STANDARD / DIRECTIVE	ENABLING LEARNING OBJECTIVES (ELO)	<b>Module 6 – Live Fire Training Structure and Props (Burn Facility)</b> <u>Terminal Learning Objectives (TLO)</u> At the conclusion of this module, participants will gain an understanding of all positions and responsibilities involved in live fire training, especially as it relates to authority having jurisdiction (AHJ) requirements, as well as demonstrate proficiency in following AHJ’s standard operating procedures (SOPs) for live fire burn training evolutions at a live fire training structure (burn facility) including exterior props present at the specific training structure.
NFPA 1403	ELO 6-1	Discuss positions and responsibilities of personnel involved in live fire training including: Instructor-in-Charge, Safety Officer, Instructor, Fire Control Team (Ignition Officer/igniter/fueler, and observer).
	ELO 6-2	Discuss AHJ’s standard operating procedures for all positions and props.
	ELO 6-3	Demonstrate proficiency and understanding of all positions per AHJ’s standard operating procedures for training site.
	ELO 6-4	Demonstrate proficiency in inspecting and testing gas-fired live fire training structures prior to and after completing live fire training evolutions, if applicable to training site.
	ELO 6-5	Demonstrate proficiency in inspecting and testing non-gas-fired live fire training structures prior to and after completing live fire training evolutions, if applicable to training site.
	ELO 6-6	Demonstrate proficiency in creating a burn sequence matrix chart for the burn rooms in the live fire training structure that includes maximum fuel loads and maximum number of sequential evolutions based on the AHJ’s safe live fire training action plan.
	ELO 6-7	Demonstrate proficiency in inspecting, maintaining, and integrating exterior props in live fire training evolutions.
STANDARD / DIRECTIVE	ENABLING LEARNING OBJECTIVES (ELO)	<b>Module 7 – Acquired Structure Pre-Plan</b> <u>Terminal Learning Objectives (TLO)</u> At the conclusion of this module, participants will demonstrate competency in preparing an acquired structure.
NFPA 1403	ELO 7-1	Articulate the required permits and permissions that must be obtained to conduct a live fire training evolution.
	ELO 7-2	Demonstrate proficiency in ensuring acquired structure is capable of withstanding the weight of contents, participants, and accumulated water.
	ELO 7-3	Demonstrate proficiency in removing or eliminating all hazards from acquired structures including combustible materials/containers, hazardous structural conditions, floor openings, missing stair treads and rails, dangerous portions of chimney, holes in walls and ceilings, asbestos, unsafe debris, toxic weeds, insect hives, vermin, and vegetation that could create a hazard to participants.
	ELO 7-4	Demonstrate proficiency in ensuring all utilities are disconnected.
	ELO 7-5	Demonstrate proficiency in identifying and evaluating all exits prior to each training burn.
	ELO 7-6	Demonstrate knowledge of all personnel’s roles and responsibilities involved in live fire training evolutions including Instructor-in-Charge, Safety Officer, Instructor, and Student.