Module 1 – Introduction and Overview

INSTRUCTOR’S NOTE:
It is critical to explain to all participants that although this training is designed to prepare each instructor to safely conduct a live burn exercise, the specific requirements of each fire training program must be met in order to conduct a live burn training exercise.


This 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 were based. The following nine chapters and five annexes of the NFPA 1403 standard are covered in detail with hands-on exercises included for the participants to demonstrate proficiency.


- Chapter 1 – Administration
- Chapter 2 – Referenced Publications
- Chapter 3 – Definitions
- Chapter 4 – General
- Chapter 5 – Acquired Structures
- Chapter 6 - Gas-Fired Live Fire Training Structures
- Chapter 7 – Non-Gas-Fired Live Fire Training Structures
- Chapter 8 – Exterior Live Fire Training Props
- Chapter 9 – Reports and Records
- Annex A – Explanatory Material
- Annex B – Live Fire Evolution Sample Checklist
- Annex C – Responsibilities of Personnel
- Annex D – Heat Exhaustion and Heat Stroke in Training
- Annex E – Informational References
Module 1 – Introduction and Overview - Administration Page

INSTRUCTOR’S NOTE:
Review the organization of the Participant Guide, using module 1 as an example.
- Explain the Agenda and modules are divided with tabs.
- PowerPoint slides are numbered in the lower left corner. Slide numbers in the Instructor Guide are consistent with those in the Participant Guide, however page numbers are different, so use slide numbers when discussing specific topics.
- Content is included under each slide, when appropriate.
- The Administrative Table on the first page of each module will not be reviewed for each module by instructors but rather available for reference by each participant.

Duration
1.5 hours

Scope Statement
This module includes introductory administrative tasks and provides for a review of the key elements of Chapters 1, 2, and 3 of NFPA 1403.

Terminal Learning Objectives (TLO)
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 to minimize health and safety hazards.

Enabling Learning Objectives (ELO)
- 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.

Resources
- NFPA compliant self-contained breathing apparatus (SCBA) AND structural fire gear - EACH PARTICIPANT MUST BRING THEIR OWN EQUIPMENT
- Compact disc (CD) with supplemental training materials that includes copies of specific materials as noted in the content – one per participant
- National Fallen Fire Fighters Foundation (NFFF) video Train the Way you Fight…but Safely – Live Fire Training from the Fire Fighter Life Safety Resource Kit - Volume 1 (Video embedded in PowerPoint with permission from NFFF).
Instructor to Participant Ratio
1:25

Reference List
• NFPA 1403, Standard on Live Fire Training Evolutions 2012 Edition
• NFPA 1142, Standard on Water Supplies for Suburban and Rural Fire Fighting 2012 Edition
• NFPA 1500, Standard on Fire Department Occupational Safety and Health Program 2013 Edition
• NFPA 1402, Guide to Building Fire Service Training Centers 2012 Edition

Practical Exercise Statement
Group hands-on activities will be conducted in modules 6 and 7 which occur on days 2 and 3 of training, respectively.

Assessment Strategy
• Observation of student participation as well as performance in group activities
• Instructor facilitated verbal review of module content
• Administration of post-test

Prerequisites:
• Refer to the Ohio Emergency Medical Services (OEMS) Firefighter and Fire Safety Inspector Training Subcommittee list of prerequisites included at the beginning of this manual
## Instructor Notes Icon Map

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑</td>
<td><strong>Knowledge Check</strong>: Used when it is time to assess the learners' understanding</td>
</tr>
<tr>
<td>➡️</td>
<td><strong>Example</strong>: Used when there is a descriptive illustration to show or explain</td>
</tr>
<tr>
<td>🔒</td>
<td><strong>Key Points</strong>: Used to convey essential learning concepts, discussions and introduction of supplemental material</td>
</tr>
<tr>
<td>⚠️</td>
<td><strong>Hint</strong>: Used to cover administrative items or instructional tips that aid in the flow of the instruction</td>
</tr>
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<td>⚡️</td>
<td><strong>Interaction</strong>: Used for suggested small group activity or other interaction</td>
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<td>📹</td>
<td><strong>Video</strong>: Used to prompt instructor to play a video, which has been included on the slide</td>
</tr>
</tbody>
</table>
There have been no fatalities in Ohio due to a live fire training exercise. This operations level of training is a pro-active approach to maintain that status. The National Fire Protection Association (NFPA) created the 2012 NFPA 1403, *Standard on Live Fire Training Evolutions* to train firefighters to avoid injuries and fatalities during live fire training. NFPA 1403 compliance can dramatically decrease the likelihood of firefighter injuries and deaths by conducting training in a safe and controlled manner.

The Firefighter and Fire Safety Inspector Training Subcommittee (2013) has fully reviewed the course materials to ensure the quality of course materials and that training is available to firefighter instructors in the state of Ohio.
Module 1 – Introduction and Overview

INSTRUCTOR’S NOTE:

Take this opportunity to introduce yourself and let the participants introduce themselves – name, job function, jurisdiction, how long at job, etc. Orient the participants to the course materials. Discuss housekeeping logistics as well (e.g., restrooms, emergency exits, etc.)

Ensure each participant has a CD which contains all of the supplemental materials that will be discussed throughout the training and identified appropriately.

Certificates for successfully completing this Live Fire Training – Operations Level course will be issued by the chartered fire training program.

Live Fire Training – Operations Level

- Introductions
- Course Materials
- Logistics

Slide 1-2
Module 1 – Introduction and Overview

INSTRUCTOR’S NOTE:
Refer participants to the agenda in the front of the manual, noting times might vary slightly depending on the discussions and hands-on exercises. Regular breaks will be provided.

Live Fire Training – Operations Level

Agenda

• Day 1 – NFPA 1403 Classroom Lecture

• Day 2 – Live Fire Training Structure (Burn Facility)

• Day 3 – Acquired Structure Pre-Plan

A detailed agenda is provided in the front of the participant manual.
Module 1 – Introduction and Overview

INSTRUCTOR’S NOTE:
Review the learning objectives for module 1 as listed on slide.

Module 1 – Introduction and Overview

Learning Objectives:
• Provide overview of NFPA 1403
• Describe purpose, scope and application of NFPA 1403
• Explain the referenced publications applicable to NFPA 1403
• Review key definitions used in NFPA 1403

Slide 1-4
Module 1 – Introduction and Overview

INSTRUCTOR’S NOTE:
The History of NFPA bullet listed on the slide is the only bulleted item to discuss in more detail on this slide. All of the other bulleted items listed on this slide will all be covered in greater detail on subsequent slides. Briefly review the other bulleted items since they are discussed in greater detail on subsequent slides.

Ensure each participant has a copy of their own NFPA 1403 standard.

Ask participants if they agree hands-on training delivered in an organized fashion is the key to a successful learning experience, especially when it comes to firefighter training? Historically, live fire burns have a tendency to become “bigger the better”. The philosophy was “let it build”. In response to fatalities and serious injuries that have occurred nationwide in live fire training evolutions, NFPA 1403 was created to try and change that attitude and to ensure live fire training was conducted in a safe and controlled manner.

Overview

• The History of NFPA 1403
• Overview of NFPA 1403
• Administration
• Referenced Publications
• Definitions
Module 1 – Introduction and Overview

INSTRUCTOR’S NOTE:

Divide the class into 2 or more groups (3 to 5 participants per group). Distribute a copy of the U.S. Fire Administration Technical Report (USFA-TR-015) to each group. (A copy of the report is included on the CD of supplemental training materials given to each instructor so ensure sufficient copies are on hand for the number of groups. It is important for instructor to be familiar with the details of this incident prior to the training class.) Have each group review the report and the list of “key issues” which led to the training fatality. Assign each group 1 or 2 key issues. Have each group prepare a presentation on how to prevent those assigned key issues and propose solutions for each issue, identifying who might be responsible for the implementation of the solution. Remember that the students will likely have little knowledge of NFPA 1403 but going through this activity will likely generate topics that will in fact be discovered are in fact part of NFPA 1403.

Allow 15 minutes for activity including time for each group to review report, create presentation and present their findings on the assigned key issues.

U.S. Fire Administration/Technical Report

GROUP ACTIVITY

Slide 1-6
An unusual training exercise involving simulated arson scenarios and live firefighting evolutions in an abandoned farmhouse resulted in the deaths of three volunteer firefighters and injuries to three others. The incident occurred in Milford Township, Michigan, a rural area approximately 30 miles from Detroit, on October 25, 1987. Four area volunteer departments participated in the exercise and the fatalities included members of three of the departments.

The drill was arranged and directed by the Milford Fire Department, with the other departments participating as guests. It was intended to familiarize the firefighters with the evidence that
would result from arson fires. To achieve this objective, several different arson scenarios were prepared in the two-story abandoned structure, using flammable and combustible liquids as accelerants. The plan was to ignite all of the arson sets and then extinguish the fires, allowing the trainees to examine the evidence before and after the fact. Some of the trainees would gain added experience in interior structural firefighting and in the use of self-contained breathing apparatus (SCBA). A tanker shuttle was to be used to supply water for the drill, providing an opportunity for all four departments to practice this method, and members of an Explorer Scout group were on hand to practice operating exterior handlines. The plan was to reignite the house and burn it to the ground after completion of the interior operations and examination of the evidence. Exterior 2-1/2 inch hoselines were positioned to protect an exposed new house under construction on the same property.

The deaths and injuries occurred because of an unanticipated flashover on the ground floor that trapped six members on the upper level. Three of those members escaped, but three were killed as the fire rapidly extended to the second floor. All three deaths were attributed to inhalation of products of combustion, although all were wearing full protective clothing and SCBA.

The dead firefighters included a 41-year-old female member of the Milford Township Volunteer Fire Department, a 34-year-old male member of the Lyon Township Volunteer Fire Department, and a 33-year-old male member of the Highland Township Volunteer Fire Department. The three injured firefighters were all members of the Milford department.

This Milford, MI incident is believed to be the first multiple death training incident in the United States since the adoption of NFPA 1403 Standard in 1986. This incident reinforces many of the lessons on firefighting safety that have been learned in real fires and in several previous incidents at live fire training exercises. Live fire training accidents continue to be a source of unacceptable danger to the fire service in the United States.

A copy of the full U.S. Fire Administration/Technical Report 015 is included on the CD that has been given to each participant for more information on this incident.

There will be other incidents that will be discussed in future modules of instruction. Although only a few incidents will be discussed, there are resources available to get more information on fatalities that have occurred during training. Valuable lessons can be learned by reviewing the factual information on the incidents to help prevent other fatalities. The National Institute for Occupational Safety and Health’s (NIOSH’s) Fire Fighter Fatality Investigation and Prevention Program provides an online search tool to easily search for fire training fatality incidents for which reports are available. For more information visit, http://www.cdc.gov/niosh/fire.

The National Fire Protection Agency is another great resource for additional information on lessons learned due to fire training fatalities. In January 2012, the NFPA released a report titled U.S. Fire Fighter Deaths Related to Training 2001-2010 that summarized the NFPA special analysis that focused on the firefighters deaths related to training during the most recent 10-year period -- 2001 through 2010. As the report states, over that period, 108 firefighters died while engaged in training-related activities (11.3 percent of all on-duty firefighter deaths in those years, not including the 340 deaths at the World Trade Center in 2001). Of these 108 victims, 53 were volunteer firefighters, 43 were career firefighters, six were employees of state land management agencies, three were employees of federal land management agencies, one was
a civilian employee of the military, one was a contract pilot, and one was employed by an industrial fire department. One quarter of the victims had one year or less of experience. Of these 27 firefighters, 10 were involved in recruit training when they died. For more information visit, http://www.nfpa.org/research/reports-and-statistics/the-fire-service/fatalities-and-injuries/us-firefighter-deaths-related-to-training-2001-to-2010

The Ohio Administrative Code 4123: 1-21-07 Fire Department Occupational Safety and Health standard should be followed by all fire departments to help ensure the well-being of personnel during all fire related activities. For more information, visit http://codes.ohio.gov/oac/4123%3A1-21-07
In the past, far too many live burn training accidents have occurred, causing far too many injuries and deaths. Training is one aspect that the fire service can control. NFPA 1403, *Standard on Live Fire Training Evolutions* was adopted to provide safety standards in performing live fire training evolutions.

The reorganized 2012 edition of NFPA 1403 contains important updates that further protect firefighters with clear, easy-to-follow guidance:

- New Chapter 4 addresses general items to which all live fire training evolutions must adhere for safety.
- Clarified items include requirements for Emergency Medical Services, allowable types of Class A products, instructor duties, and the role of the fire control team.
- A new requirement mandates that each burn room have a burn plan in place to limit building damage and firefighter injuries.
- Revised inspection and maintenance requirements for live fire training structures are also included.
The nine chapters in the NFPA 1403, *Standard on Live Fire Training Evolutions - 2012 Edition* include:

- Chapter 1 – Administration
- Chapter 2 – Referenced Publications
- Chapter 3 – Definitions
- Chapter 4 – General
- Chapter 5 – Acquired Structures
- Chapter 6 – Gas-Fired Live Fire Training Structures
- Chapter 7 – Non-Gas-Fired Live Fire Training Structures
- Chapter 8 – Exterior Live Fire Training Props
- Chapter 9 – Reports and Records
Module 1 – Introduction and Overview

INSTRUCTOR’S NOTE:
Explain to participants that an asterisk “*” following the number or letter designating a paragraph in NFPA 1403 indicates that explanatory material on the paragraph can be found in Annex A. The annexes in NFPA 1403 are listed on this slide. Annex A provides additional material and explanations for each of the 9 previous chapters. The explanatory materials included in Annex A have been integrated into the appropriate module of instruction in this training manual. All of the worksheets/checklists included in the annexes are used during the hands-on exercises.

Overview of NFPA 1403 (cont.)

• 5 Annexes:
  – Annex A – Explanatory Material
  – Annex B – Live Fire Evolution Sample Checklist
  – Annex C – Responsibilities of Personnel
  – Annex D – Referenced Publications
  – Annex E – Informational References

* in standard refers to explanatory information in Annex

The five annexes in the NFPA 1403, Standard on Live Fire Training Evolutions - 2012 Edition include:

- Annex A – Explanatory Material
- Annex B – Live Fire Evolution Sample Checklist
- Annex C – Responsibilities of Personnel
- Annex D – Heat Exhaustion and Heat Stroke in Training
- Annex E – Informational References

An asterisk “**” following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in the Annex A.
Module 1 – Introduction and Overview

INSTRUCTOR’S NOTE:
Review the scope of NFPA 1403. State that this is a high risk activity that can be managed by following this standard.

Administration

• 1403 Chapter 1

• Scope 1.1
  – Minimum requirements for training all fire suppression personnel

Slide 1-10

The NFPA 1403 Chapter 1 – Administration covers the scope, purpose, and application of the standard. The scope of NFPA 1403 is to identify the minimum requirements for training all fire suppression personnel engaged in firefighting operations under live fire conditions. The minimum live fire training requirements are intended to be a basic system that can be adapted and applied to locations utilizing local standard operating procedures.
INSTRUCTOR’S NOTE:

Review the purpose of NFPA 1403 and how to apply it. State that drills for SCBA familiarization should not be done with live fire. This standard does give good guidance to live fire burns for the training of arson investigators but does not specifically apply to them.

Administration (cont.)

• Purpose 1.2
  – To provide a process for conducting live fire training in safe facilities so as to minimize health and safety hazards

• Application 1.3
  – Use current edition
  – Not for wildfire training or fire cause investigation
  – AHJ must develop SOPs
  – Not for SCBA smoke drills

Slide 1-11

The purpose of NFPA 1403 is to provide a process for conducting live fire training evolutions to ensure they are conducted in safe facilities and that the exposure to health and safety hazards for the firefighters being trained is minimized in both realistic and controlled environments.

The most current version of NFPA 1403 (i.e., 2012 edition) should be used for all live fire training. The standard does not apply if training evolutions involve ground cover or wildland fire or if the sole purpose is for fire cause or origin investigation. In addition, drills conducted to familiarize firefighters for the first time with proper use of SCBA in a smoke environment should not be conducted under live fire conditions.
Module 1 – Introduction and Overview

INSTRUCTOR’S NOTE:
Discuss that NFPA 1403 requires the training, participants, instructors, equipment, uniforms, personal protective equipment (PPE) and water supply to also be in compliance with other applicable NFPA standards as listed on this slide and subsequent slide.

As is noted in the content, although NFPA 1402, Guide to Building Fire Service Training Centers is not specifically referenced in NFPA 1403, the information is still applicable to live fire training.

1403 Chapter 2
Referenced Publications

- NFPA 30, 58, & 59 Fuel Codes
- NFPA 1001 Firefighter Standards
- NFPA 1041 Instructor Standards
- NFPA 1142 Water Supplies
- NFPA 1407 Rapid Intervention Crews
- NFPA 1410 Emergency Scene Operations

There are several documents that are referenced in NFPA 1403 that are to be considered part of the requirements of the standard including:

Although NFPA 1402, Guide to Building Fire Service Training Centers, 2012 edition is not specifically referenced in NFPA 1403, it does provide guidance information that applies to live fire training.
INSTRUCTOR’S NOTE:
Review the additional referenced publications listed on this slide. Direct participants to www.nfpa.org for more information on each of the standards.

Additional referenced publications include:

- NFPA 1500, Standard on fire Department Occupational Safety and Health Program, 2007 edition
- NFPA 1975, Standard on Station/Work Uniforms for Emergency Services, 2009 edition

For more information on each of the standards referenced, visit www.nfpa.org.
Module 1 – Introduction and Overview

**INSTRUCTOR’S NOTE:**
Review each definition found in Chapter 3 that are listed in the content below this slide and subsequent slides. Note that the term of Authority Having Jurisdiction (AHJ) has many interpretations as found in annex A.

### 1403 Chapter 3 - Definitions

- **Review definitions**
  - Authority Having Jurisdiction (AHJ)
  - Shall
  - Should
  - Standard
  - Acquired Prop
  - Backdraft

**Slide 1-14**

- **Authority Having Jurisdiction (AHJ)** - An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

- **Shall** - Indicates a mandatory requirement.

- **Should** - Indicates a recommendation or that which is advised but not required.

- **Standard** - A document, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and which is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. No mandatory provisions shall be located in an appendix or annex, footnote, or fine-print note and are not to be considered a part of the requirements of a standard.

- **Acquired Prop** - A piece of equipment such as an automobile that was not designed for burning but is used for live fire training evolutions.

- **Backdraft** - A deflagration resulting from the sudden introduction of air into a confined space containing oxygen deficient products of incomplete combustion.
Module 1 – Introduction and Overview

1403 Chapter 3 - Definitions (cont.)

• Review definitions
  – Combustible
  – Conduction
  – Convection
  – Deflagration
  – Demonstration
  – Emergency Medical Services
  – Evolution

Slide 1-15

• **Combustible** - Capable of burning, generally in air under normal conditions of ambient temperature and pressure, unless otherwise specified. Combustion can occur in cases where an oxidizer other than oxygen in air is present (e.g., chlorine, fluorine, or chemicals containing oxygen in their structure).

• **Conduction** - Heat transfer to another body or within a body by direct contact.

• **Convection** - Heat transfer by circulation within a medium such as a gas or a liquid.

• **Deflagration** - Propagation of a combustion zone at a velocity that is less than the speed of sound in the unreacted medium.

• **Demonstration** - The act of showing a skill.

• **Emergency Medical Services** - The provision of treatment, such as first aid, cardiopulmonary resuscitation, basic life support, advanced life support, and other pre-hospital procedures, including ambulance transportation, to patients.

• **Evolution** - A set of prescribed actions that result in an effective fireground activity.
**Flameover (Rollover)** - The condition in which unburned fuel (pyrolysate) from the originating fire has accumulated in the ceiling layer to a sufficient concentration (i.e., at or above the lower flammable limit) that it ignites and burns. Flameover can occur without ignition of or prior to the ignition of other fuels separate from the origin.

**Flashover** - A transition phase in the development of a compartment fire in which surfaces exposed to thermal radiation reach ignition temperature more or less simultaneously and fire spreads rapidly throughout the space, resulting in full room involvement or total involvement of the compartment or enclosed space.

**Fuel Load** - The total quantity of combustible contents of a building, space, or fire area, including interior finish and trim, expressed in heat units or the equivalent weight in wood.

**Instructor** - An individual qualified by the authority having jurisdiction to deliver firefighter training, who has the training and experience to supervise students during live fire training evolutions.

**Instructor-in-Charge** - An individual qualified as an instructor and designated by the authority having jurisdiction to be in charge of the live fire training evolution.

**Live Fire** - Any unconfined open flame or device that can propagate fire to the building, structure, or other combustible materials.
Module 1 – Introduction and Overview

INSTRUCTOR’S NOTE:
Continue to review each definition listed on slide.

1403 Chapter 3 - Definitions (cont.)

• Review definitions
  – Participant
  – Personal Accountability Report (PAR)
  – Personal Protective Clothing
  – Personal Protective Equipment
  – Pyrolysate
  – Radiation

Slide 1-17

• **Participant** - Any student, instructor, safety officer, visitor, or other person who is involved in the live fire training evolution within the operations area.

• **Personal Accountability Report (PAR)** - A report requested by and communicated to the incident commander from fire crews operating at a scene as to their location and situation.

• **Personal Protective Clothing (PPC)** - The full complement of garments firefighters are normally required to wear while on emergency scene, including turnout coat, protective trousers, firefighting boots, fire-fighting gloves, a protective hood, and a helmet with eye protection. (Per NFPA 1001, 2008)

• **Personal Protective Equipment (PPE)** - Consists of full personal protective clothing, plus a self - contained breathing apparatus (SCBA) and a personal alert safety system (PASS) device. (Per NFPA 1001, 2008)

• **Pyrolysate** - Product of decomposition through heat; a product of a chemical change caused by heating.

• **Radiation** - Heat transfer by way of electromagnetic energy.
INSTRUCTOR’S NOTE:
Review the final definitions listed on slide.

• Review definitions
  – Safety Officer
  – Student
  – Acquired Structure
  – Live Fire Training Structure
  – Ventilation Controlled Fire

- **Safety Officer** - An individual appointed by the authority having jurisdiction as qualified to maintain a safe working environment at all live fire training evolutions.

- **Student** - Any person who is present at the live fire training evolution for the purpose of receiving training.

- **Acquired Structure** - A building or structure acquired by the authority having jurisdiction from a property owner for the purpose of conducting live fire training evolutions.

- **Live Fire Training Structure** - A structure specifically designed for conducting live fire training evolutions on a repetitive basis.

- **Ventilation-Controlled Fire** - A fire in which the heat release rate or growth is controlled by the amount of air available to the fire.
INSTRUCTOR’S NOTE:
Although not specifically cited in NFPA 1403, it is important to draw attention to the efforts of the National Institute of Standards and Technology (NIST) and the Underwriters Laboratories (UL) who have been working together with the fire service to examine fire dynamics and firefighting tactics. Of particular note as a result of the NIST and UL efforts are a few additional definitions that augment those already cited in NFPA 1403, particularly flow path, ventilation, and ventilation-limited fire.

As is noted in the content below the slide, additional resources specific to the NIST and UL efforts can be found at http://www.nist.gov/fire/. There are several videos included at that website that participants may find very informative.

1403 Chapter 3 - Definitions (cont.)

• NIST and UL Research
  – Flow Path
  – Ventilation
  – Ventilation-limited fire
  – http://www.nist.gov/fire/

Slide 1-19

Although not specifically cited in NFPA 1403, it is important to draw attention to the efforts of the National Institute of Standards and Technology (NIST) and the Underwriters Laboratories (UL) who have been working together with the fire service to examine fire dynamics and firefighting tactics. Of particular note as a result of the NIST and UL efforts are a few additional definitions that augment those already cited in NFPA 1403, including the following:

Flow Path – The course of movement hot gases between the fire and exhaust openings and the movement of air towards the fire.

Ventilation – The expulsion of heat and smoke from a fire building.

Ventilation-limited fire – Another term used for ventilation-controlled fire which is a fire in which the heat release rate or growth is controlled by the amount of air available to the fire.
The extensive NIST and UL collaborative effort with the fire service has resulted in a great deal of valuable information readily available online. For more information, visit http://www.nist.gov/fire/.
Module 1 – Introduction and Overview

INSTRUCTOR’S NOTE:
The video embedded in the PowerPoint slide is a short clip from the Underwriters Laboratory that shows the impact door control has on flow path of a fire. To play the video embedded in the PowerPoint slide, move the mouse cursor over the picture until a “play” arrow icon appears. Click on the icon to start the video which will play in full screen mode. The video is 1 minute long.

Emphasize to participants that limiting the air to a ventilation-limited fire limits the size of the fire. This video shows how a ventilation controlled fire remains small and in check as long as the front door is closed. Once the front door is opened in a ventilation controlled fire the fresh air will allow the fire to grow quickly. Think of a ventilation controlled fire as a wood stove with its damper closed. The fire smolders which means the heat stays relatively low in temperature and the fuel burns for a long time. Once you introduce free airflow into the wood stove the fire quickly ignites and burns with a tremendous increase in heat production. Much is being learned about just how much care should be taken when attacking ventilation controlled fires. Carelessly opening up doors and breaking windows may have detrimental effects on the fire and consequently on us. For more information encourage participants to visit www.ULfirefightersafety.com.

1403 Chapter 3 - Definitions (cont.)
UL Door Control/Flow Path Video

For more information on flow path and door control, visit www.ULfirefightersafety.com
The National Fallen Firefighters Foundation (NFFF) is committed to providing valuable information to firefighters to prevent line-of-duty deaths. The NFFF Resource Kit is a mix of DVD presentations and training materials. Its six modules offer a blueprint for change in the four statistically predominant areas of firefighter deaths-cardiopulmonary health, vehicle response, structure fire attack, and training exercises—as well as in organizational assessments and fire protection/prevention in the built environment. It presents frank interviews with fire service leaders, hard hitting video footage, compelling arguments for enhanced firefighter safety, and useful materials that help steer fire departments and firefighters off the path of a line-of-duty death. The Resource Kit is one of several important projects launched by the NFFF to support the 16 Firefighter Life Safety Initiatives.² For more information, visit http://www.everyonegoeshome.com/.
INSTRUCTOR’S NOTE:
Review the learning objectives of this module and ask participants to provide examples for each objective to ensure each has been discussed.

Review of Module 1
Learning Objectives

• Provide overview of NFPA 1403
• Describe purpose, scope and application of NFPA 1403
• Explain the referenced publications applicable to NFPA 1403
• Review key definitions used in NFPA 1403