



RUSSELLVILLE FIRE DEPARTMENT
POLICY MANUAL

Policy Number:
Section:
Original Date:
Revised Date:

PURPOSE

The policy establishes a process and guidelines for live burn training in a fixed facility to be done in a safe manner modeled after current NFPA 1403: Standard on Live Fire Training Evolutions and Russellville Fire Department Standard Operating Procedures.

This policy applies to all members or any agency using the burn building and all live fire training evolutions.

POLICY

During live fires the number of personnel involved in training fires often exceeds the number normally operating on an incident. To reduce risk and assist with scene management and training, fire participants shall be formed into individual teams consisting of no more than five (5) personnel and shall be supervised by a certified Instructor.

A Command Post shall be established and positioned to afford maximum visibility of the structure, operating companies and fire conditions. A qualified representative of the Training Division must be present at all live burns.

When an outside agency utilizes the burn tower for live fire training the following positions must be staffed by RFD personnel:

- Instructor-In Charge (IIC)
- Inside Safety
- Outside Safety
- Ignition Officer

A fee may be charged to outside services/agencies. For agencies requesting use, the following fees shall apply:

200.00 per hour plus replacement of materials including particle board, propane, straw and pallets.

The following positions/groups shall be filled on all live fire training evolutions:

- Instructor-In-Charge (IIC)
- Incident Commander (IC)
- Safety Officer
- Ignition/Fire Control Group
- Rapid Intervention Team (RIT)
- Fire Attack Group
- Back-Up Group
- Water Supply Group
- Medical/Rehab Group

Instructor-In-Charge (IIC)

The IIC shall be responsible for full compliance with this policy and will have overall responsibility for the safety of all training operations on the training grounds.

The IIC is responsible for creating a burn plan for each training evolution.

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The IIC shall assign one instructor to each functional crew, each of which shall not exceed five (5) students, one instructor to each backup line, one additional instructor for each additional functional assignment. Prior to the ignition of any fire, the instructor shall ensure that all personal protective equipment specified in SOP 206.04 Protective Equipment is being worn according to the policy and in accordance with the manufacturer's instructions.

The IIC shall establish an emergency notification procedure for real, unexpected incidents that may occur during training. Upon stopping an evolution due to an accident or safety concern, the IIC shall confer with the Safety Officer and corrective action shall be taken prior to an evolution starting again. Whenever an evolution is stopped due to an accident or safety concern, the IIC shall ensure that a personal accountability report (PAR) is conducted immediately for all personnel operating on scene.

The IIC shall provide for appropriate rest and rehabilitation periods between training evolutions as well as any necessary medical evaluation and treatment.

The IIC may serve as the Incident Commander (IC).

Incident Commander (IC)

An instructor or the IIC will be designated as "Command" and will assume incident command responsibilities per RFD policy.

Ignition Officer / Fire Control Group

An instructor shall be designated as the "Ignition Officer" and will serve as the Instructor to the Fire Control Group to control the materials being burned. The Fire Control Group shall not be permitted to ignite materials without a back-up line in place.

The decision to ignite a training fire shall be made by the IIC in coordination with the Safety Officer. The fire shall be ignited by the Ignition Officer. The Fire Control Group shall wear full personal protective equipment including SCBA when performing this control function.

A charged hose line shall be available when the Fire Control Group is igniting or tending to any fire. Fires shall not be ignited without an instructor assigned as the Safety Officer visually confirming that the fire area is clear of personnel being trained. All fires shall be extinguished without an excessive period of pre-burn, as soon as the training objectives have been satisfied.

Safety Officer

The Safety Officer will be assigned at all structural training fires. Although safety is the responsibility of all personnel operating in the training evolutions, it is the responsibility of the Safety Officer to monitor personnel and fire conditions, working with Command to ensure all safety procedures are complied with and that risk to personnel is minimized.

The safety officer shall provide for the safety of all persons on the scene, including students, instructors, visitors, and spectators.

The Safety Officer shall have full authority to intervene and control or stop any aspect of the operations when in his/her judgment, a potential or real risk to personnel exists. The safety officer shall not be assigned other duties that interfere with safety responsibilities. Responsibilities of the Safety Officer(s) will include but not be limited to prevention of unsafe acts and elimination of unsafe conditions.

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The Safety Officer must review the Burn Plan with the IIC prior to any briefing with students.

Company officers acting as instructors will be responsible for the direct supervision of assigned students and their safety and welfare, including the prevention of unsafe acts and the elimination of unsafe conditions. 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. Additional safety personnel, as deemed necessary by the Safety Officer, shall be positioned to react to any unsafe or threatening condition.

When deemed necessary the Safety Officer or the IIC may designate an instructor to serve as the Inside Safety Officer. This position will serve as the instructor to the BackUp Group and be responsible for overseeing the interior operations of Fire Control Group and the Fire Attack Group.

The Safety Officer shall ensure temperatures in the burn rooms are recorded every ten (10) minutes and they do not exceed specified limits.

Inside Safety Officer

The Inside Safety Officer shall be located in close proximity to the Back-up Line and have a thermal imaging camera (TIC) or Data Loggers to verify interior temperatures of burn rooms. Temperatures shall be communicated to the IIC prior to fire evolutions.

Water Supply Group

Water Supply Group shall consist of, at a minimum, one qualified individual per pumping apparatus used in training evolutions, assigned by the IIC.

Instructor

An individual assigned by the IIC to deliver firefighting training, who has the training and experience to supervise students during live fire training evolutions.

All instructors shall be qualified and authorized to deliver firefighter training according to the Russellville Fire Department.

Instructors shall supervise and monitor all students during the live fire training evolution. The participating student-to-instructor ratio shall not exceed 5 to 1.

Instructors shall conduct a personnel accountability report (PAR) prior to entering and upon exiting the structure during a live fire training evolution.

Rapid Intervention Team (RIT)

Must consist of a minimum of two personnel (not students) and positioned to make entry to assist entry teams out of structure if called upon. RIT Group must be in place before anyone can make entry into the IDLH atmosphere.

Medical / Rehab Group

Medical Group shall be established for all live fire training. Responsibility includes but is not limited to pre and post vitals of all personnel involved in live fire training, establishing a rehab area, and creating a designated medical plan with the IIC.

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Communications

Command is responsible for establishing radio communications with each company officer or instructor involved in the drill. Channel assignment must be coordinated with all companies involved. Companies operating at the training fire will continuously monitor the assigned radio channel. A radio check will be conducted prior to initiating training fire operations.

Fireground Perimeter

To eliminate confusion, and provide adequate scene control, all personnel operating within the fireground perimeter shall operate under the direction of an assigned officer. The fireground perimeter shall be defined as the hazardous area surrounding the burn structure and shall be determined by Command or the Safety Officer. All spectators shall be restricted to an area outside the fireground perimeter.

Prerequisite Training

Prior to being permitted to participate in live fire training evolutions, firefighter personnel / students shall have received training to meet the job performance requirements for Firefighter I in NFPA 1001, Standard for Fire Fighter Professional Qualifications. All firefighters involved in burn building training fires shall have received training to meet the performance objectives of Firefighter 1, NFPA 1001 in the following:

- Safety
- Fire behavior
- Portable extinguishers
- Personal protective equipment, including SCBA
- Ladders
- Fire hose, appliances, and streams
- Overhaul
- Water supply
- Ventilation
- Forcible entry
- Building Construction

Personal Protection Equipment (PPE)

Participants involved in structural live fire training shall have structural PPE and self-contained breathing apparatus (SCBA) completely donned prior to engaging in live fire.

Prior to commencing the training evolution, a complete inspection of PPE, SCBA, and other equipment shall be completed. Prior to the ignition of any fire, instructors shall ensure that all protective clothing and equipment are worn properly. The Safety Officer will make the determination to order and ensure all students, instructors, safety personnel, and other personnel to wear a minimum of full personal protective equipment when operating within the collapse zone (hot zone) of the structure while the training evolutions are in progress.

The ensemble shall include structural firefighting coat, trousers, gloves, footwear, Nomex hood, and helmet with chinstrap and ear flaps. The structural PPE ensemble shall be in accordance with RFD SOP 206.04 Protective Equipment, NFPA 1971 Standard on Protective Ensemble for Structural Fire Fighting and Proximity Fire Fighting, NFPA 1981 Standard on Open-Circuit Self-Contained Breathing Apparatus, NFPA 1982 Standard on Personal Alert Safety Systems (PASS), current Edition or the NFPA standard in effect at the time the PPE was manufactured.

All personnel not wearing appropriate PPE and equipment shall remain outside the operational perimeter.

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Accountability

Accountability Tags will be collected by a designated accountability officer. Participating personnel will turn in their tag or passport to the Command Post. Command will assume the accountability responsibility. Personnel Accountability Report or "PAR" will be used at the following accountability benchmarks:

- At conservative time-frames consistent with the "working" air supply of participants
- Any report of a trapped or missing firefighter
- Upon exiting the structure
- Sudden hazardous event
- At the discretion of Command

Facilities

Burn rooms shall be visually inspected for damage that would render the room(s) unsafe prior to conducting live fire training evolutions. Any damage that renders the room(s) to be declared unsafe shall be documented.

All safety devices related to the burn room(s) shall be checked prior to any live fire training evolution to ensure that they operate correctly. Debris hindering the access and egress of fire fighters shall be removed prior to the beginning of the next exercise.

Burn room(s) shall be left in a clean and safe condition upon completion of live fire training evolutions. All discarded burn materials shall be completely out before being placed into the dumpster.

The Instructor-in-Charge shall determine the rate and duration of water flow necessary for each individual live fire training evolution, including the water necessary for control and extinguishment of the training fire by attack lines, the supply necessary for backup lines used to protect personnel, and the supply necessary to protect exposures (95 gpm minimum).

Separate sources shall be used for the supply of attack lines and back-up/RIT lines; this can be accomplished by having two pumpers on two hydrants with one pumper designated for fire attack lines and the other designated for backup/lines.

Areas for staging, operating and parking of fire apparatus, and rehab will be designated. There shall be room around the burn building so that there is space for all attack lines as well as backup lines to operate freely.

Burn Building Preparation

All doors, windows, scuttles, ventilation devices, lighting, and temperature monitors shall be checked and operated prior to any live fire conditions to ensure correct operation.

Doors must be unlocked, and latches/padlocks removed or secured in an unlocked/unlatched position.

Hose lines and advancing crews can cause the metal dividers to move. ALL movable divider walls must be checked to ensure the panels are plumb. Turnbuckles must be tight and aligned with floor joists to prevent dividers from kicking out and falling. This must be monitored during and after evolutions.

Ladders must only be placed on the flat metal support pads alongside or below the window openings.

Burn buildings shall be left in a safe condition upon completion of each live fire exercise. Debris hindering the access or egress of firefighting personnel shall be removed before continuing further operations.

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Pre-Planning

- A pre-fire tour of the burn building is required.
- Weather
- Hazards - inside and adjacent to the burn building
- Agencies must utilize the "Live Fire Checklist"

Pre-Training Briefing

Prior to conducting live fire training evolutions, a pre-burn briefing session shall be conducted for all participants (see RFD Burn Plan).

All facets of each evolution that is to be conducted shall be discussed, and assignments made for all crews participating in the training session.

The location of simulated victims is not required to be disclosed, provided that the possibility of simulated victims is discussed in the pre-burn briefing. No fire or civilian personnel shall be permitted to act as a victim(s) during training fires.

A burn plan shall be prepared and utilized during the pre-burn briefings. Prior to conducting a live fire training evolution, all participants shall have a knowledge and familiarity with the building/room(s) being used for the evolution.

All spectators shall be restricted to an area outside the operations area perimeter as established by the Instructor-in-Charge and/or the safety officer. Control measures such as cones shall be used to designate this perimeter.

Safety Considerations

Safety shall be the primary consideration at all live fire training exercises. For that reason, strict compliance with NFPA 1403 shall be required for all live fire training activities.

Live fire training is strictly prohibited within the fire department except as specifically authorized in this policy.

Due to the potential for serious injury or loss of life during live fire training, any member who conducts or engages in live fire training outside the parameters authorized by this policy will be deemed to have committed a serious offense.

A Safety Officer shall be appointed for all live fire training evolutions. The Safety Officer may not be assigned other duties that will interfere with their capacity to fulfill their responsibilities. The responsibilities of the Safety Officer shall include:

- Prevention of unsafe acts
- Elimination of unsafe conditions

Assistant Safety officers may be assigned as deemed necessary. The Safety Officer shall be knowledgeable in the operation and location of safety features available for the burn room(s).

All personnel will be equipped with operating PASS devices.

Backup/RIT lines shall be provided to ensure protection for personnel operating attack lines.

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Live Fire Evolutions

It shall be the responsibility of the Instructor-in-Charge to coordinate the overall fire training evolution to ensure that the proper levels of learning takes place and to ensure the proper levels of safety.

The IIC of the live fire training evolution shall determine, prior to each specific evolution, the number of training attack lines and backup lines that are necessary to meet the goal of the drill.

The IIC shall develop an attack plan based upon information obtained during the preplan and building preparation stages.

The Attack Plan shall specify:

- Points of ignition
- Amount of fire load
- Position of attack lines
- Position of RIT units (and RIT line/back-up line)
- A rescue plan
- Accountability plan

All personnel involved in the drill shall be instructed on each element of the attack plan prior to igniting the structure and shall receive a walk through briefing of the building prior to each training fire. An evacuation plan and signal shall be reviewed, demonstrated and agreed upon.

A method of communication shall be established to enable coordination between the Instructor-in-Charge, the Safety Officer, and the participants (see Communication Plan.)

The *participating* instructor-to student ratio shall not be greater than 5 to 1. The Instructor-in-Charge shall designate Company Officers as instructors for the drill.

The Instructor-in-Charge shall maintain overall accountability of personnel while Company Officers (Instructors) shall be responsible for accountability for personnel under their charge during live fire training evolutions.

Two persons, who are not actively involved in the evolution, shall be assigned as Fire Control Team to control the materials being burned and to ignite the training fire under the direction of the Instructor-in-Charge. They shall wear full protective clothing, including SCBA with the face-piece in place.

No person(s) shall play the role of a victim inside of a burn room used with live fire. Fires shall not block a designated exit path.

Each hot zone participant shall be equipped with full protective clothing and SCBA. The Instructor-in-Charge shall ensure the inspection of all participants prior to entry into a live fire training evolution to verify that protective clothing and SCBA are being worn in accordance to manufacturers and/or departmental policy and are in serviceable condition.

Additional safety personnel, as deemed necessary by the safety officer, shall be located strategically within the structure to react to any unplanned or threatening situation or condition.

A building evacuation plan shall be established, and conveyed to all instructors and students prior to when live fire training begins. An evacuation signal shall be demonstrated to all participants prior to when live fire training begins.

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A search of the structure shall be conducted immediately prior to ignition to ensure that no unauthorized persons, animals, or objects are in the building.

After all evolutions are completed the instructor-in-charge will be responsible for making sure the burn structure is inspected and that all equipment is put back in storage or back in service.

If any or all of this live fire training burn policy is violated the instructor-in-charge will be held responsible and disciplined by the Fire Chief accordingly.

The Instructor-in-Charge will be responsible for producing the following drill documentation:

- Attendance rosters
 - Listing of students
 - Listing of instructors
- Pre-burn plan
- Drill sheet with main objectives and activities that occurred
- Documentation of unusual conditions encountered
- Any injuries incurred and treatment rendered
- All paperwork including an NFIRS report must be completed before the conclusion of the respective shifts tour
- Any changes in the deterioration of the structure.

All training burns shall be documented and filed for proper record keeping at the training division. Each fire attack crew will consist of a minimum of two people with one being a company officer. A minimum of two people shall be assigned to operate each 1-3/4" attack line and each backup/RIT line. RIT lines should be of the same size or larger than the attack lines. Each hose line shall be capable of delivering a minimum of 95 gpm and up to 200 gpm.

Water Supply Sources

Two separate sources of water supply shall be established, one of which must be a properly functioning hydrant with sufficient flow. All fire attack hoselines shall be supplied by a pumper with its own hydrant water supply. The RIT unit (backup) hoselines shall be supplied by a separate water supply. All hoselines must be capable of delivering a minimum of 95 gpm and should be checked for sufficient flow and operation, immediately prior to igniting the fire. Booster tanks must be full during evolutions and a minimum of 500 gallons in order to be considered as a back-up water source.

Fuel Materials

Only class "A" materials will be used for conducting live fire training evolutions in simulating structural fire attack. Acceptable class "A" materials include pine excelsior, wooden pallets, straw, hay, and other ordinary combustibles.

Pressure treated wood, rubber, tires, plastic, straw or hay that has been treated with pesticides or other harmful chemicals shall not be used. Flammable or combustible liquids shall not be used as fuel, or used to initiate and/or accelerate class "A" materials.

Fuel materials will only be used in the amounts necessary to create the desired fire size. Unidentified materials, such as debris found in or around the structure that could burn in unanticipated ways, react violently, or create environmental or health hazards, shall not be permitted to be used.

The use of flammable or combustible liquids shall not be permitted to be used in live fire training evolutions in structures.

Approved



Fire Chief

The instructor-in-charge shall assess the selected fire room environment for factors that can affect the growth, development, and spread of the fire.

Fire Ignition

The use of flammable or combustible liquids, as defined in NFPA-30, shall be prohibited for use in live fire training evolutions. Only Class A materials shall be used in live fire training.

The ignition process will be conducted by an Ignition Officer under the direct supervision of the Safety Officer. The Ignition Officer will regulate the fuel load for each evolution to maintain a tenable atmosphere inside the burn rooms.

Class A burn materials should consist of:

- Clean wood pallets (no more than 4 standard size / burn)
- Straw bales (no more than 100#/ burn)
- Crushed paper bales (no more than 100# / burn)

The ignition of the fire shall be coordinated through Command so the burn rooms do not become overheated. Burn room temperature must be continually monitored by the Instructor-in-Charge. He may designate a knowledgeable and responsible firefighter to keep him informed. Temperature should not exceed 800 degrees at ceiling level. Time and Temp. Probe readings must be recorded on the attached Burn Building.

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

A tile warm up period of 10 mins shall occur prior to any training activities starting. This warm up period will include the ignition officer igniting the materials in the burn room in accordance with the Burn Sequence Chart and keeping the fire "In Check" by spraying water

The training exercise shall be stopped immediately when the Instructor-in-Charge or the Safety Officer determines through ongoing assessment that the combustible nature of the environment represents a hazard. The exercise shall continue only when actions have been taken to reduce the hazard.

Temperature

The key to conducting safe live fire training is to control the maximum temperature. FTS insulated burn rooms are designed to withstand a maximum temperature of 1100°F. Maintain temperatures between 500°F to 800°F range for live fire training evolutions. Maintaining a safe margin below the maximum temperature will provide a safe burn environment for firefighters and prolong the life of the PPE and the burn room.

The Instructor-in-Charge shall appoint a separate person to monitor the temperature of the fire in each burn room.

Do not place wedge devices between doors and frames, especially the hinge side, to hold doors open. Do not breach roofs or walls in the designated burn rooms with the padgenite panels.

Temperatures are to be recorded every 10 minutes and immediately prior to crew entry.

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Fire Chief